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**A Multi-level Technology Acceptance, Adoption and Implementation
Model for Achieving Government-Citizen Dialogue:**

An Omani Case Study

A thesis

submitted in fulfillment

of the requirements for the degree

of

Doctor of Philosophy in Management Systems

at

The University of Waikato

by

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THE UNIVERSITY OF
WAIKATO
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2014

Abstract

The number of commercial applications that exploit Web 2.0 social media is increasing rapidly. However, little is known about the challenges that public sector organizations face when they decide to adopt Web or other technology-based applications, and offer them to consumers; particularly when governmental and civil service organizations are involved. This is particularly true in developing non-Western regions, such as the Middle East, where 'Arab Spring' developments in 2011 stimulated interest in the ability of social networking to mobilize citizens against ruling elites. Consequently, this study investigated Oman's public sector to gain a deeper understanding of the adoption and use of information technology innovation and its potential to engage governments more closely with citizens. In essence, it aimed to develop a comprehensive model of 'organizational adoption' and 'citizen use' of technology for achieving meaningful online dialogue. The focus of this study is not social media applications per se, but rather it concerns any Web or other technology-based application that is suited to improving dialogue between government organizations and citizens.

The final model was derived over three distinct phases of research using a mixed method approach. In *Phase I*, an initial literature review developed understanding of global trends in e-Government adoption and clarified the study aims, scope, and primary research question. A more extensive literature review was then undertaken to derive a tentative 'first-cut model' theoretical framework. This contains factors considered critical to both achieving successful organizational adoption of IT innovations and a meaningful dialogue between governments and citizens. These are presented from three distinct perspectives or levels; the National level, Organization level, and Management level. In *Phase II* of the research, case studies involving three Omani civil services organizations helped to refine the tentative model. Policymakers and citizens were interviewed to confirm issues and identify additional adoption and use factors. Finally, in *Phase III* a participatory action research approach was used to test completeness of the refined model, which culminated in the final model.

This study has shown that meaningful online dialogue can be used for different purposes: for facilitating access to decision-makers (mainly), for responding to citizens' enquiries and for addressing rumours. At the National level, government support—meaning political, economic and technical aspects—plus social changes has driven the acceptance of technology for improving government-citizen interactions and for sharing of information. In contrast, the major National level inhibitors are: limited availability of broadband services, other digital divide barriers, national culture barriers and political barriers. At the Organization level, having an IT strategy and top management support, adequate human, financial and technical resources, and a strong citizen-centric orientation are all factors that drive the adoption. Conversely, lack of capability, inappropriate internal culture, and resistance to change can all inhibit adoption. At the Management level, good preparation, proficiency with technical issues, accessibility and marketing issues, appropriate consideration of operational issues and end user needs are critical for implementation of Web or other technology-based applications needed to create meaningful online dialogue. Conversely, major implementation challenges concern inadequate IT infrastructure, resistance to change, and inability to recruit a suitable management team. The research also found that creating a management team, recruiting qualified moderators, controlling the discussion, responding to citizens, and defining the interaction characteristics (objectives, target citizens, participation policies and rules, etc.) are all critical for achieving a meaningful dialogue.

The developed model has added to the knowledge of *how* to encourage technology innovations in governmental organizations, in particular through online dialogue that motivates citizens and other stakeholders to engage in meaningful discussions. For non-Omani governmental organizations having similar operational characteristics, the developed model offers lessons for policymakers and others who wish to enhance citizens' interactions; or who wish to improve the reputation of the organization; or bring about citizen-acceptable policies and decisions. Future work should be aimed at testing the developed social networking adoption model in other industries, sectors and national settings.

Acknowledgements

After sincerely thanking Allah for all blessings and bounties, I would like to thank many people for their contribution, assistance, support and guidance. Firstly, I would like to thank my mother for her daily prayers and enormous efforts to help me complete this journey, and my father who planted in me the love of knowledge. Foremost I would like to thank my wife and children who have accompanied me along the joyful journey of knowledge and who marvellously created the right atmosphere for me to bring this research to fruition. I am also grateful to my home country (Oman), which continuously offers its people free education from first grade, and to my employer (the Ministry of Higher Education) for providing me the opportunity to study abroad and for sponsoring my postgraduate education (Master and PhD).

In addition, special thanks go to my research team members for their continued encouragement, support and valuable advice. First, to my chief supervisor Associate Professor Eric Deakins, who showed me the way and taught me everything I needed to become an accomplished researcher and scholar; and second, to my other supervisors: Dr Stuart Dillon and Professor Gottfried Vossen whose support and guidance has helped me through this journey. To all other staff of Waikato University and the Management School, and the Department of Management Systems in particular who work behind the scenes to ensure research students receive all the academic resources and help they need, I say thank you and God bless you all.

Publications arising from the thesis

Al Namani, H., Deakins, E. & Dillon, S. (2008). The role of online social networking in public administration. *Proceedings of the 4th International Conference on e-Government*, Melbourne, Australia; 23-24 October, 299-307.

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Glossary of Terms

Definitions of the main terms used in this study:

Acceptance

Acceptance is the act of a government, and its citizens, forming a positive attitude toward Web or other technology-based applications that offer online social networking services designed to achieve meaningful dialogue.

Acceptance Stage (National level)

This stage is referring to the *National level* of the proposed multi-level technology acceptance model. The *Acceptance Stage* refers to the stage when the highest level of the government apparatus becomes aware of, and forms its positive attitude toward Web, or other technology-based, applications for offering online social networking services to achieve meaningful dialogue with its citizens. The *Acceptance Stage* also involves citizens being willing to use the delivered online social networking service to interact and share comment, opinion viewpoint, and suggestion with a government organization. This stage combines the first two (Knowledge and Persuasion) stages of the Rogers (1995) diffusion of innovation framework and the intention to use stage of the Davis (1989) technology acceptance model.

Adoption

Adoption is the act of a government organization making the decision to utilize a suitable Web or other technology-based application to help it achieve meaningful dialogue with its citizens.

Adoption Stage (Organization level)

This stage is referring to the *Organization level* of the proposed multi-level technology acceptance model. The *Adoption Stage* refers to the stage when the government organization is making its decision to utilize a suitable Web or other technology-based application to help it achieve meaningful dialogue with its citizens. This decision is made in light of such considerations as organizational capabilities, the value to the organization of the adoption and the types and degree of any required changes. This stage is similar to the third (*Decision*) stage of the Rogers (1995) diffusion of innovation framework.

Citizen side considerations

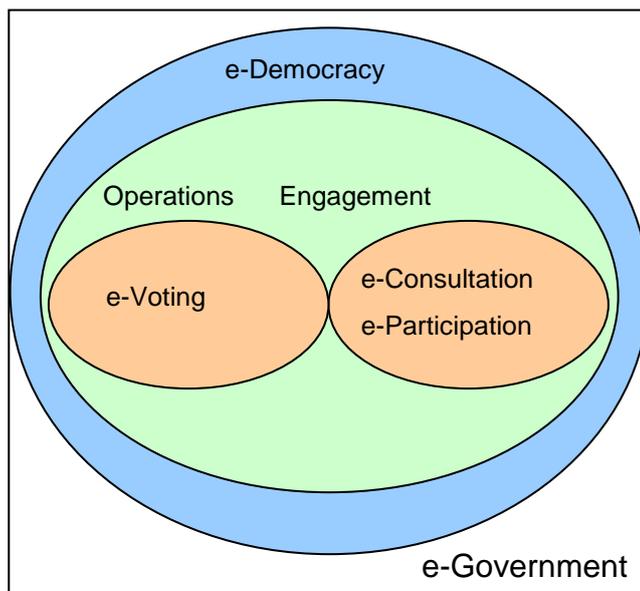
These include personal, organizational, cultural, economic, technical, social and political aspects that citizens need to consider in order to make an informed decision about whether to accept/use the online social networking services offered by government organizations for the purposes of sharing personal comments (e.g., opinions viewpoints and suggestions) with others members of an online community.

Drivers

Drivers are factors that facilitate, speed up, or in some other manner force the acceptance, adoption and implementation of Web or other technology-based applications by government organizations to achieve meaningful dialogue with citizens. Drivers may be organizational, social, economic, technical, political or cultural.

e-Democracy

e-Democracy can be defined as the use of information communication technology (ICT) by public organizations to support the participation of citizens or their representatives in debate, political discourse, raising and elaborating social issues, emergence of representation, polling, and voting (Shane, 2004; Zwass, 2006). The concept of *e-Democracy* encompasses two functional aspects: *Operations*, such as e-Voting, and the active *Engagement* of citizens in the decision-making process, such as via e-Consultation and e-Participation. *e-Democracy* is considered to be a key part of e-Government. This research focused on the subject of e-Participation in particular.

***e-Government***

For the purposes of this study e-Government is synthesized from the work by Lips (2008) and refers to the process of the delivery of services to citizens, and engagement and collaboration with clients and other partners online at state, national and local levels through the use of Information and Communication Technology (ICT).

e-Participation

In broad terms, e-Participation refers to the use of ICT by public organizations for supporting stakeholder participation in organizational processes, which include decision-making and policymaking, and services delivery (Macintosh, 2003). For this study, e-Participation is considered a key part of e-Democracy. Regarding the

use of format, scholars tend to use ‘e-’ to refer to the collective use of ICT by government agencies under an e-Government umbrella term; or they separate out the terms. This study treats all ‘e-’ terms as belonging under the e-Government umbrella as indicated here.

Government

Government is a process/system/form of governing (Hague and Harrop, 2007). Governments around the world generally adopt one of three different styles of government: three-tier, two-tier, or single tier. For instance, a three-tier government may comprise of state, national, and local governments. The term central government also refers to national government. Styles of government include autocratic and democratic governance.

Implementation

Implementation is the act of a government organization implementing a suitable Web or other technology-based application intended to achieve meaningful online dialogue with citizens. It comprises organization side considerations of (Web application) introduction and operation, and citizen side considerations of application use.

Implementation Stage (Management level)

This stage is referring to the Management level of the proposed multi-level technology acceptance model. The *Implementation Stage* refers to the stage when the local government organization implements (i.e. introduces and operates), and citizens make use of, a suitable Web or other technology-based application intended to achieve meaningful online dialogue. The *Implementation Stage* thus comprises three sub-stages termed respectively: *Introduction*, *Operation*, and *Use (of the application)*. This stage is part of the fourth (*Implementation*) stage of the Rogers (1995) diffusion of innovation framework.

Inhibitors

Inhibitors are factors that delay, postpone, stop or in some other manner prevent the acceptance, adoption and implementation of Web or other technology-based applications by government organizations to achieve meaningful dialogue with citizens. Inhibitors may be organizational, social, economic, technical, political or cultural.

Introduction

Introduction is the act of the government organization introducing the online social networking service to citizens for the purpose of interacting and sharing information.

Introduction Stage (Management level)

This is actually a sub-stage of the Implementation stage. The *Introduction Stage* refers to the act of the government organization introducing the online social networking service to citizens for the purpose of interacting and sharing information. This stage is part of the fourth (*Implementation*) stage of the Rogers (1995) diffusion of innovation framework.

Local government

This refers to the lowest level of government entity in countries that have two or more tiers. This level of government entity is that which is closest to citizens and is concerned with local community issues. For example, the New Zealand government consists of two main bodies: central and local government (a city council is an example of the latter). In contrast, when a country has only a single tier the term *government* is used. In Oman, the (single tier of) government serves its citizens via Ministries consisting of small sub-units that include directorates and departments.

Meaningful dialogue

Meaningful dialogue is two-way communication for the purpose of sharing understanding, exploring ideas, and gaining insights (Bohm, 1996; Senge, 1990).

Online social networking application (social media application)

This refers to Web-based software that enables the interaction and sharing of information between groups of actors. Such applications include discussion forums, social networking sites (e.g., Facebook) and Blogs.

Online social networks (OSN)

This refers to the set of relationships between groups of actors; which can be individuals or organizations that (usually) have similar interests, who interact and share using Web 2.0 applications or tools. Such tools include Wikis, Blogs, and social networking sites (Liebowitz, 2007; Vossen and Hagemann, 2007; Wellman, 1996, 2001).

Operation

Operation is the act of the government organization operating a virtual online community, which its citizens are using in order to interact and share comment, opinion viewpoint, and suggestion with the government organization.

Operation Stage (Management level)

This is a sub-stage of the Implementation stage. The *Operation Stage* refers to the period of time during which the government organization operates a virtual online community in which its intention is that government and citizens will interact and share their interests. Simultaneously, its citizens are willing to use the delivered online social networking service to interact and share comment, opinion viewpoint, and suggestion with the government organization. This stage is part of the fourth (*Implementation*) stage of the Rogers (1995) diffusion of innovation framework.

Organization side considerations

These include organizational, social, economic, technical, political and cultural aspects that government organizations need to consider to make an informed decision about whether to accept/adopt/implement/operate/use Web, or other technology-based, applications to achieve meaningful online dialogue with citizens.

Social networking services (SNS)

This refers to an online service that enables a virtual community of similarly interested individuals or groups to be created. Typically, Web 2.0 applications and social networking sites offer online social networking services.

Use

Use is the act of the government organization and its citizens actively accessing the online social networking service and interacting and sharing information.

Use Stage (Management level)

This is a sub-stage of the *Implementation Stage*. The *Use Stage* refers to the act of the government organization and its citizens actively accessing the online social networking service and interacting and sharing information. For example, the organization may post topics for discussion or reply to member enquiries, and citizens may read or participate in the discussion or post enquiries. This stage is part of the fourth (*Implementation*) stage of the Rogers (1995) diffusion of innovation framework, and concerns the *actual use* stage of the Davis (1989) technology acceptance model.

Virtual or online community

A virtual community is a community of people that shares common interests, ideas, and feelings over either the Internet or some other collaborative online network (Vossen and Hagemann, 2007).

Web 2.0 / Web 2.0 applications

Generally, Web 2.0 describes a wave of World Wide Web (Web) developments that enable online interactions and sharing (O'Reilly, 2005, 2006; Vossen and Hagemann, 2007). For this study, Web 2.0 applications refer to the Web-based software that enables such interactions and sharing of information.

Chapter 1: Introduction

1.1 Background

The purpose of this chapter is to introduce the study and explain its value. It places the concept of social networking within the context of attempts to improve public administrations around the world. Outlined are research questions, scope, objectives and significance.

Public administration has a long history of concerted effort to help provide a better quality of life for citizens. A now widely applied tactic first appeared in the literature in the late 1980s, the refocus of public administrations from being inward looking to outward looking (Osborne and Gaebler, 1992). This approach emphasizes the concerns and needs of end users in order to achieve delivery of improved services, development of strong relationships with stakeholders, and improved public sector performance (Ho, 2002). Much research has been devoted to enhancing these effects (e.g., Axelsson et al., 2010; Bertot *et al.*, 2010; Bonson *et al.*, 2012; Cavaleri, 2004; Devas and Delay, 2006; Ho, 2002; Lukensmeyer and Torres, 2006a, 2006b; Macintosh, 2003).

In the last decade, a major theme of enhanced public administration has been the reorientation and transformation of a traditional paper-based government into one where the organization adopts, and citizens use, information and communication technologies (Deakins *et al.*, 2002, 2007c; Dorris, 2008; Gilbert *et al.*, 2004; Heeks, 2006; Ho, 2002; Kolsaker and Lee-Kelley, 2008; Lips, 2008; Moon, 2002; Scott, 2006). This transformation into 'e-Government' has been driven by many central governments' intention to deliver better services and enhance democratic processes (Bertot *et al.*, 2008; Irani *et al.*, 2005; Olphert and Damodaran, 2007; Thomas and Streib, 2005). This trend originated in the USA and has since become a global phenomenon (UN, 2005, 2010).

Although many authors prefer to isolate individual aspects for study (e-Democracy, e-Participation...etc.), the e-Government term refers collectively to the process of delivering services to, and engaging and collaborating with, citizens online using ICT. Hence, scholars and practitioners are increasingly interested in the evolution of the Web and its opportunities for public administration (e.g., Axelsson, Melin, and Lindgren, 2010; Bertot, Jaeger, and Hansen, 2012; Bonson *et al.*, 2012; Chang and Kanan, 2008; Dadashzadeh, 2010; Deakins *et al.*, 2007c; Dorris, 2008; Hunt, 2007; Lathrop and Ruma, 2010; Lips, 2008; Lukensmeyer, and Torres, 2006a, 2006b; McDonough, 2011; Noveck, 2009; Osimo, 2008). This trend is motivated by the widespread acceptance of commercial Web applications within society and the positive online experiences claimed by public organizations. There is thus an awareness of many Web-enabled possibilities for government institutions, although challenges such as security, identity management, and privacy are also recognized (Belanger and Hiller, 2006; Bertot *et al.*, 2012; Dorris, 2008).

A significant event occurred in 2004 when the Web was reclassified. Thus, the term Web 1.0 is used to describe technologies, applications, and websites that facilitate the publication and pushing of information to consumers. In contrast, Web 2.0 involves Web technologies, applications and sites that facilitate interactions and information sharing over the Web (Axelsson *et al.*, 2010; Bertot *et al.*, 2012; Chang and Kanan, 2008; Faraj *et al.*, 2011; Landsbergen, 2010; Lukensmeyer and Torres, 2006a, 2006b; O'Reilly, 2005, 2006; Osimo, 2008; Vossen and Hagemann, 2007). Web 2.0 is inspired by new technical developments and by changed perceptions regarding the Web and the Internet (Bates, 2006; Chang and Kanan, 2008; Landsbergen, 2010; O'Reilly, 2006; Vossen and Hagemann, 2007). In addition, the diffusion of essential broadband infrastructure and evolution of Web-based applications and technologies have together helped to enable convenient, cost-effective interactions and sharing of information over the Web. For example, Wiki and Blog applications enable users to share their opinions and experiences over the Internet and the ready acceptance

by a younger generation raised with the Internet has helped to make the Web and the Internet an extremely popular and widely used medium (Bertot *et al.*, 2012; O'Reilly, 2006; Vossen and Hagemann, 2007).

The transition of the Internet into a social interaction platform is often described as the socialization of the Web (Bertot *et al.*, 2012; Faraj *et al.*, 2011; Chang and Kanan, 2008; Vossen and Hagemann, 2007) and, being a rising trend, its diffusion is expected to be soon observed in different sectors (Sherwood, 2007). This has attracted researchers to study its usage in education among many other areas (e.g., Lai and Ng, 2011; Lucas *et al.*, 2007; Mason and Rennie, 2007).

A *social network* is a record of the relationships between individuals, indicating the ways in which they connect through various social familiarities ranging from casual acquaintance to close familial bonds. Barnes first coined the social network term in 1954 (in: *Class and Committees in a Norwegian Island Parish*, "Human Relations"). Thus, long before the advent of the Internet, social networks were recognized as a powerful means of creating and sharing knowledge (Liebowitz, 2007). Nowadays, most social network services comprise Web 2.0 based applications that offer a variety of ways for users to interact and share; including messaging, email, video, voice chat, file sharing, Blogging, and discussion groups. These applications are available on a wide variety of communication devices, including Personal Computers (PCs), Personal Digital Assistants (PDAs), mobile phones, and Tablet PCs.

Social networking tools or social media applications¹, in the guise of Web 2.0 applications, are frequently described as a powerful means to build virtual communities within which *meaningful* dialogue can take place (Chang and Kanan, 2008; Faraj *et al.*, 2011; Finin *et al.*, 2005; Vossen and Hagemann, 2007; Yates *et*

¹ The term *social networking tools*, which was considerably refined during the course of this study, has been overtaken in popularity in the literature by the term *social media applications* to refer describe Web 2.0 applications that enable interaction and sharing between actors. For this reason, this thesis uses both terms interchangeably.

al., 2010). Meaningful dialogue provides for sharing of information, understanding, experiences, and thoughts; and can also lead to the creation and sharing of new knowledge (Bohm, 1996; Chang and Kanan, 2008; Senge, 1990; Yates *et al.*, 2010). Recently, virtual communities built around a social network structure have become popular Web-based applications that allow members to define links to other members with whom they have relationships of various kinds (consider for example, *Facebook*, *Friendster*, and *LinkedIn*). Other Web-based virtual communities have successfully combined social networking with specific interests such as photography (*Flickr*), personal video (*YouTube*), personal Blogging (*MySpace*), and sharing of news and opinion (*s-oman.net*). According to Levene (2006), in addition to simple Web page linking, online social networks add links between people and communities and these features have helped to make social networking sites the most popular visited sites globally (Alexa, 2012a; ComScore, 2011). In professional terms, uses for online social networking services have increased dramatically to include building brand awareness, staff recruitment, and learning about new technologies and competitors (Nimetz, 2007).

Government entities also increasingly recognize the value of using the Web and the Internet as they seek to improve interactions with citizens. Civic involvement is a fundamental aspect of e-Democracy whereby the use of communication technology by public organizations supports the participation of citizens or their representatives in debate, political discourse, raising, and elaboration of social issues, emergence of representation, polling, and voting (Zwass, 2006). Civic involvement appears to be most dominant in Western cultures (UN, 2010; UN 2012). For example, increased citizen participation in the decision-making process has long been a priority of the e-Government agenda in the USA (Executive Office of the President of the United States, 2003) in order to improve: government performance and improve citizen satisfaction, knowledge creation, and problem solving (Axelsson *et al.*, 2010; Devas and Delay, 2006; King *et al.*, 2007; Macintosh, 2003; Yates and Paquette; 2011).

Among the developed nations, quality of the interactions between government and citizens has become a key trend within the theme of e-Government transformation (e.g., Axelsson *et al.*, 2010; Bertot *et al.*, 2010; Bonson *et al.*, 2012; Macintosh, 2003; Schedler and Summermatter, 2007; Scott, 2006; Shane, 2004; Thomas and Streib, 2003, 2005; Welch and Fulla, 2005). However, there can be marked differences in political, cultural and social aspects in developing nations (Al-Hujran *et al.*, 2011; Chatfield and Alhujran, 2009; Hague and Harrop, 2007; Hofstede, 1978, 2003; Khalil, 2011; Mahler, 2003) where the e-Government situation can be quite different (Abanumay *et al.*, 2005; Deakins *et al.*, 2006, 2007c; UN, 2005, 2010). Being a relatively new area of study most of the research has focused on developments in developed Western cultures and (selected) Asian cultures, with very few studies addressing Arabic settings. A recent United Nations report shows that more work needs to be done generally (UN, 2010), hence this study focuses on e-Government transformation within a developing Arabic nation (Oman) where there is currently great interest about *how* to use ICT as a key driver of a potential knowledge-based economy.

In 2003, the Omani government launched its ‘eOman’ strategy. This aims to improve the quality of services that government delivers to citizens and identifies new opportunities for Omani people in the IT sector. In 2006, the government cemented its digital strategy in place by establishing the Information Technology Authority (ITA), which is the government arm supporting e-Government implementation. Its vision is to transform the Sultanate of Oman by leveraging ICT to enhance government services, enrich businesses, and empower individuals (ITA, 2009). The ITA mission involves pioneering the implementation of a wide range of initiatives and services designed to direct Oman toward becoming a sustainable knowledge-based economy. Another milestone occurred in 2008 when the government encouraged public organizations to use ICT as a means to deliver services to citizens. In his annual speech, His Majesty Sultan Qaboos stated:

“Information technology and communications have now become the main elements that move forward the development process in this third millennium; therefore, we have accorded our attention to finding a national strategy to develop the skills and abilities of citizens in this domain with the aim of further developing e-Government services. We are closely following the important steps that we have made in this regard. We call upon all government institutions to speedily enhance their performance, and to facilitate their services, by applying digital technology in order to usher the Sultanate into the constantly evolving spheres for applying knowledge.” (MOI, 2008, p. 5)

Commercial use of social networking tools is increasing in Oman. For example, Alexa (2012b) identified that the social networking sites: *YouTube*, *Facebook*, and *s-oman.net* were respectively the second, third, and fifth most popular websites (June 2012). However, government uses of Web 2.0 applications are still rare, with only two government agencies currently utilizing online discussion forums (*moe.gov.om* and *mohe.gov.om*). This is in spite of the fact that effective government-citizen interactions can be a powerful means to increase trust, transparency and accountability, and help identify community needs for improving organizational performance and client satisfaction (e.g., Axelsson *et al.*, 2010; Bertot *et al.*, 2010; Bonson *et al.*, 2012; Cavaleri, 2004; Devas and Delay, 2006; Lukensmeyer and Torres, 2006a, 2006b; Macintosh, 2003).

E-Government services may facilitate central or local governance and, being still relatively under-researched, the focus of the present study was on government organizations that directly interact with citizens. An initial literature review had revealed a small number of situations where Web-based applications were in use for government-citizen engagement. However, these were mostly limited to Western settings and the majority reported issues relating to individual projects and project outcomes rather than to full implementations. Finally, studies were usually conducted using a questionnaire survey and field research was rarely reported.

1.2 Research outline

This section formally outlines the research purpose, primary research question, and selected research methods.

1.2.1 Purpose

A convergence of the researcher's personal interest, home-country situation, and identified gaps in the extant literature all helped to define the topic and the purpose of the present study. In spite of the dramatic increase in the popularity of commercial Web 2.0 applications, few government organizations in Oman have implemented and used Web or other technology-based applications such as social media applications for achieving meaningful online dialogue with citizens. In addition, given the share and interactivity features of contemporary social media applications and the Omani government's desire to enhance government-citizen interactions, the overarching goal of this research was to develop a model of successful (organization) adoption and (citizen) use of Web or other technology-based applications suitable for Arabic government organizations.

1.2.2 Objectives

This study had six main objectives along the path to developing a model for successful adoption and use, in Oman, of Web or other technology-based applications for achieving meaningful government-citizen online dialogue:

1. Identify the external (contextual) factors that influence the development of e-Government in Oman
2. Identify the main reasons for Omani government organizations wanting to /needing to utilize Web or other technology-based applications for achieving meaningful online dialogue with citizens
3. Identify the organizational factors that influence the development of e-Government in Oman
4. Identify the advantages and disadvantages of utilizing Web or other technology-based applications by Omani government organizations for achieving meaningful government-citizen online dialogue

5. Identify the key characteristics of meaningful online dialogue that Omani government organizations should aim for
6. Identify the management factors that influence the implementation and use of Web or other technology-based applications in Omani government organizations

1.2.3 Primary research question

The study addressed the following primary research question:

What are the critical success factors for Omani government organizations seeking to implement Web (or other online technology-based) applications to achieve meaningful government-citizen dialogue?

To facilitate development of a research model, the relevant e-Government considerations, responsibilities, and authorities were conceptualized as being distributed among three different levels of governance. Hence, from the outset, developed theory took the form of three interrelated frameworks; assumed to contain National level, Organization level, and Management level considerations. Considerations within each of these levels can involve either the Organization side perspective or the Citizen side perspective, or both.

Specifically the *National level* of the framework focuses on those external considerations that influence Omani government organization *Acceptance* of a Web-based or other technology-based application. From the *Organization side* perspective, this level includes consideration of political, cultural, technical, economic and social inhibitors and drivers that influence the *Acceptance* of technology for achieving meaningful online government-citizen interactions. From the *Citizen side* perspective, this level includes personal, cultural, economic, technical, social and political aspects that influence citizen *Acceptance* of whether to accept the online social networking services offered by government organizations.

The *Organization level* of the framework focuses on those internal considerations that influence individual Omani government organization *Adoption* of a Web-based or other technology-based application. By definition, this level only includes *Organization side* considerations, and aims to document technical and non-technical issues that influence the *Adoption* of technology for achieving meaningful government-citizen online dialogue.

Finally, the *Management level* of the framework focuses on those internal considerations that influence individual Omani government organizational *Implementation* of a Web-based or other technology-based application. From the *Organization side* perspective, this level includes consideration of technical and non-technical factors that influence *Implementation*, and is therefore concerned with introduction and operation aspects. From the *Citizen side* perspective, this level includes consideration of technical and non-technical factors that influence *Implementation*, and is therefore concerned with actual citizen use of the social networking service. Thus, the *Implementation Stage* of the *Management level* of the framework comprises three sub-stages: *Introduction*, *Operation*, and *Use*. The complete multi-level framework is shown in **Figure 1.1**.

From this specification, the research outcome provides a model of good practice for (e-Government) policymakers, decision-makers and others in Omani government organizations. Findings are expected to be applicable to other developing-nation settings that have a similar culture and operating environment to that of the Omani government situation.

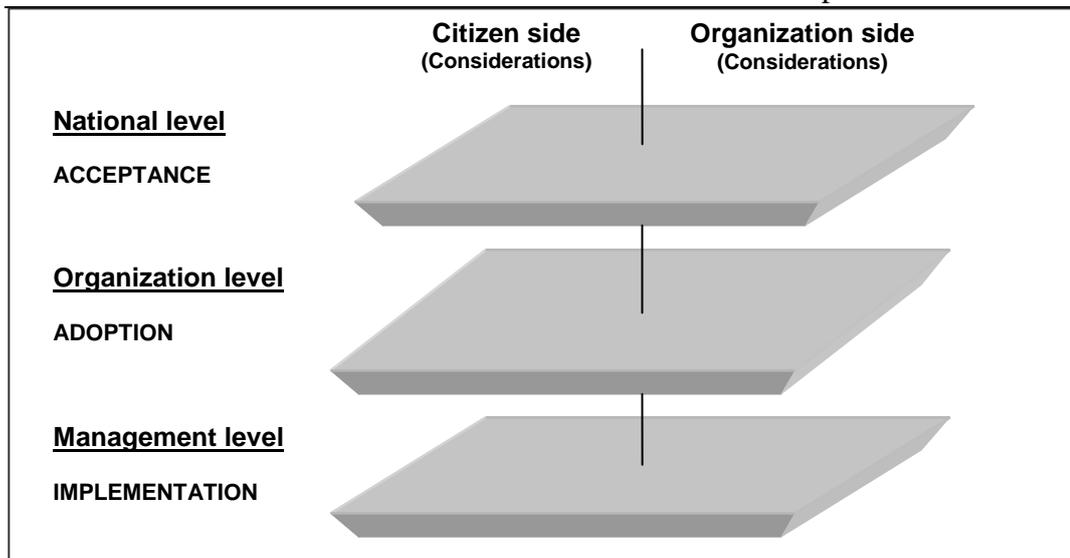


Figure 1.1: Proposed multi-level technology acceptance model framework

1.2.4 Methodology

Given the meager state of knowledge, a qualitative research investigation approach was chosen to improve understanding of the adoption and use of Web or other technology-based applications to achieve meaningful online dialogue. Such an approach can yield rich descriptions and explanations that lead to theory building (Collis and Hussey, 2003; Creswell, 2003; Lee and Lings, 2008; Miles and Huberman, 1994; Stake, 2010). In addition, many scholars recommend methodological triangulation and data collection triangulation to improve research credibility (Collis and Hussey, 2003; Creswell, 2003; Yin, 2003; Stake, 2010); hence, the adopted mixed methods development approach involved three distinct research phases as outlined in **Figure 1.2**:

- Phase I (Literature Review)
- Phase II (Case Study Research)
- Phase III (Participatory Action Research).

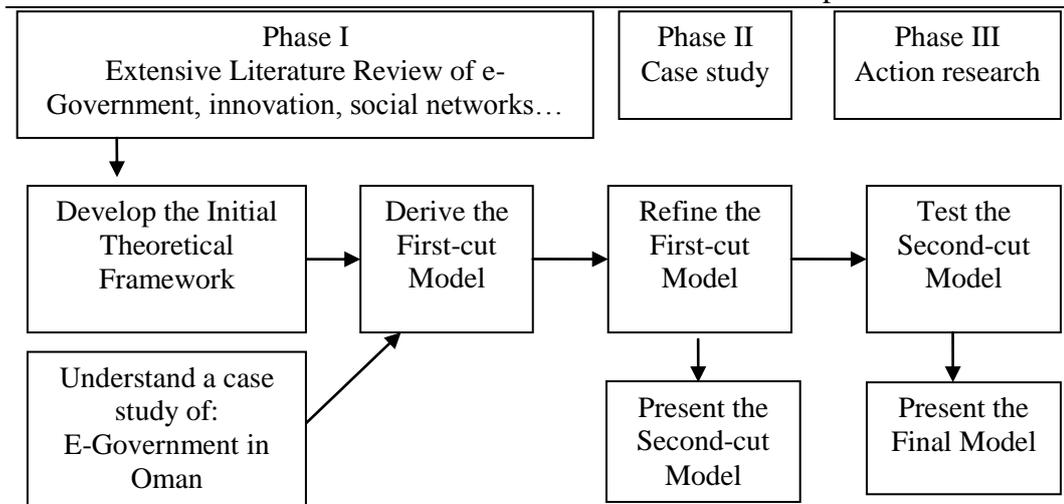


Figure 1.2: Framework development flowchart

1.2.4.1 Phase I (Literature Review)

In this phase an initial literature review is conducted to gain understanding of the global trends in e-Government adoption, to identify research gaps, and to define the research aims, scope, and questions. Since little is known about the adoption and use of Web or other technology-based applications to achieve meaningful online dialogue in government agencies in general, and in Oman specifically, a more thorough literature review was judged necessary to identify specific gaps in knowledge and help better shape the research direction and research questions (Collis and Hussey, 2003). Thus, an in-depth literature review was conducted of academic articles and trends data concerning the use of ICT in government, stages of e-Government implementation, the conditions suitable for dialogue creation, and online information sharing and citizens' democratic involvements. This synthesis led to development of a tentative theoretical model, which was reviewed in light of an e-Government case in Oman to derive the so-named 'first-cut model'.

1.2.4.2 Phase II (Case Study)

In this phase the aim was to refine the first-cut model derived (essentially) from the literature. Thus case study research was used, as Eisenhardt (1989), Stake (1995) and Yin (2003) all suggest using a case study method to study a

phenomenon in its real context *when little is known about the subject or phenomenon of interest*. This study examined three government organizations within the Omani government sector that were using Web or other technology-based applications (such as social media applications) for achieving government-citizen dialogue with citizens. 'Organization A' operates in the general education sector, 'Organization B' in the higher education sector, and 'Organization C' operates in the municipality sector. Interviews were predominantly used to collect data from participants in the case organizations and a sample of citizens was also interviewed.

1.2.4.3 Phase III (Participative Action Research)

The aim of this phase was to test the completeness of the further refined (second-cut) model. Thus, a participatory action research method was used, which concerned organizational adoption of Web or other technology-based applications by government agencies, which citizens could experience and comment on in detail, and which the host government agency similarly could comment on. The action researcher initiated changes, both within the organization and the wider community, which increased understanding (Baskerville and Myers, 2004; Collis and Hussey, 2003; Dick, 1997; Rapoport, 1970; Susman and Evered, 1978). These activities culminated in development of the final model. Similar to the Phase II activities, the main source of data was interview and observation.

1.3 The need for this research

The use of Web or other technology-based applications such as social media applications by government agencies is still in its infancy, with relatively few live experiences reported in the literature. Thus, developing an understanding of the most effective means to implement Web or other technology-based applications such as social media applications for achieving meaningful online dialogue within government (in general) and within an Arabic country in particular, involves major reflection, due to:

1. E-Government projects often fail; a fact that Heeks (2003, 2006a, 2006b) attributes in the main to poor implementation processes and project management. The World Bank also highlights that most of the failed projects have been in developing nations (Dada, 2006).
2. Understanding of the implementation issues will aid the uptake of online services in general, and social networking services to achieve meaningful government-citizen dialogue specifically. To-date, little empirical evidence is available concerning the business value to government agencies of adopting social networking services. No literature was detected that explained why public organizations in Oman have been slow to adopt Web-based applications that interact with citizens; how to create them; or how to operate them to achieve meaningful dialogue with citizens.
3. The Omani government has placed great emphasis on e-Government by offering the technical, financial and political support believed to be the drivers of Web-based applications that will meet Oman's societal needs.
4. There is regional demand to increase e-participation. For example, the first Gulf Cooperation Council (GCC) e-Government conference held in Oman in December 2009 emphasized the desirability of more e-participation in GCC countries.

In light of calls for empirical research to address the gaps in the e-Government literature (Lips, 2008) there is clearly a need to understand the key challenges to the adoption and use of Web or other technology-based applications intended to achieve meaningful government-citizen dialogue; in public organizations in general, and in developing (non-Western) countries like Oman in particular.

1.4 Scope of this study

The rapid growth of commercial social networking applications raises many fundamental questions about their capability and potential value for government administrations. Thus, it is expected that this study will be of interest to many different stakeholders, including:

- E-government, social network, knowledge management, IT acceptance, adoption, implementation and use, and citizen participation researchers
- E-government policy and decision makers, and virtual community operators
- Private sector officials responsible for acquiring or otherwise provisioning e-Government applications

1.5 Limitations of scope

This study focuses primarily on the government organization, rather than the individual citizen to develop a generic model that is tailored for specific conditions. Although the case sample concerns the Muscat governorate in Oman, the developed model is judged equally applicable to other government organizations in Oman and to government organizations in developing nations that have a similar culture and governance environment to Oman; such as Gulf Cooperation Council nations.

1.6 Research contributions

This study contributes to the literature, and to research design and practice by:

- Developing a model of technology acceptance for achieving a meaningful online government-citizen dialogue. The derived model comprises three interrelated frameworks: the National-level Framework, the Organization-level Framework, and the Management-level Framework. These collectively highlight the key adoption and use factors for achieving a meaningful online government-citizen dialogue, several of which have not been identified by earlier research. Hence, the developed model contributes both to the theoretical and practical understanding of e-Government initiative planning and implementation in general, and to understanding of specific initiatives designed to achieve meaningful online government-citizen dialogue
- Focusing on the Arabic context, which has marked differences in political, cultural and social aspects compared with other nations (Al-Hujran *et al.*,

2011; Chatfield and Alhujran, 2009; Hague and Harrop, 2007; Hofstede, 1978, 2003; Khalil, 2011; Mahler, 2003). Very few studies have addressed the Arabic government sector in general, and the Omani government sector specifically

- Highlighting the key aspects of the adoption and use of social media such as the adoption advantages, disadvantages, and impact on organization and society. This is a new and very current area of research
- Utilizing mixed qualitative methods, which provide a rich contextual understanding of the adoption and use of online social networking by government institutions. Recent calls for a focus on qualitative methods are intended to increase the general level of understanding of the adoption and use of ICT in the government context (e.g., Heeks and Bailur, 2007 Lips, 2008)
- Providing specific recommended actions for government policymakers, and implementation and operations teams, among many others.

1.7 Outline of the thesis

The remainder of this thesis presents as follows: Chapter 2 reviews the relevant contextual literature concerning recent public sector trends, evolution of the Web, and the inhibitors and drivers of organizational adoption and citizen use of social networking services in various settings. Chapter 3 describes and justifies the systematic method used to develop the research model. Chapter 4 develops the National-level of the integrated research framework, and presents issues needing consideration at this level if further progression to adoption and use of online social networking services is to be successful. Chapter 5 and Chapter 6 similarly describe the Organization-level and Management-level framework development, respectively. Chapter 7 discusses the main findings. Chapter 8 presents the overall research conclusions, contributions, limitations and opportunities for further research.

Chapter 2: Literature Review

2.1 Introduction

The purpose of this chapter is to provide context to the study. It includes a detailed description of key research findings regarding the adoption and use of Information Technology Innovation by government organizations; contributions to knowledge, theories, case studies and unanswered questions. It begins by reminding the reader of the research scope. This is followed by a comprehensive review of literature including traditional government roles; trends in ICT use within the government sector; measures of e-Government sophistication; the nature of e-Government-citizen interactions; and Web 2.0 technologies and online social networks. Case studies relevant to the research are also discussed and potential research questions identified.

Please note that the literature reviewed in this chapter is supplemented by material contained in Chapters 4, 5, and 6, describing the literature pertinent to developing initial models for the National-, Organization-, and Management level Frameworks, respectively.

This thesis focuses attention onto e-Government; specifically concerning the adoption and use of Information Technology innovations by a government agency in order to achieve meaningful dialogue between government and citizens, **Figure 2.1**. Currently, government policymakers in Arabic nations lack guidelines to help them successfully adopt social networking services. Thus, the primary objective of the study is to develop a theoretical framework of the issues that need to be considered when a government organization is planning to adopt online social networking services. Although Oman was selected as the base for data collection, it is anticipated that the model will be applicable to other developing nations having a similar culture and operating environment to Oman.

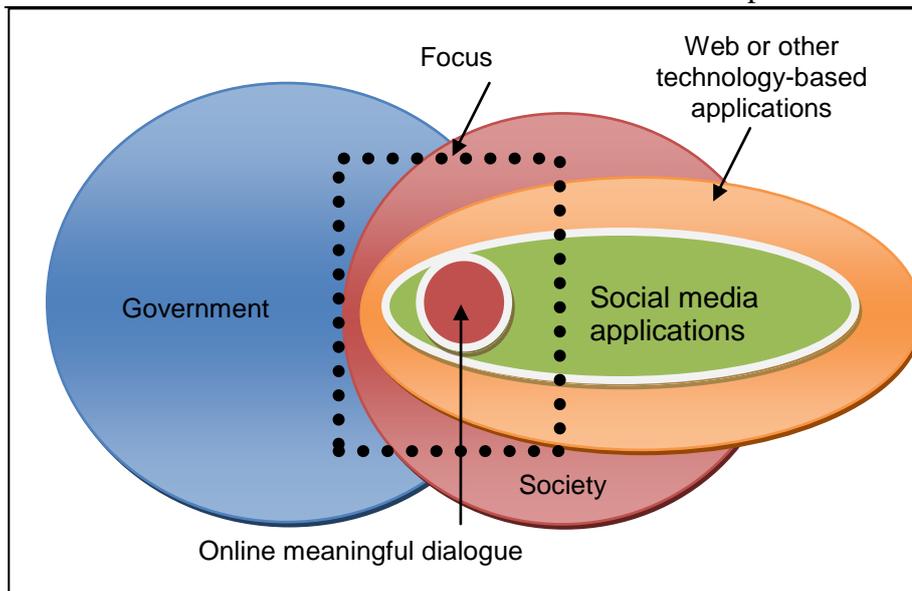


Figure 2.1: Focus of this study

2.2 Government sector

This section introduces public administration. It begins by describing different forms of government and their major roles. This is followed by description of social networking within the context of government.

2.2.1 Government

Generally speaking, government can be described as a process or the system or the form of governing (Hague and Harrop, 2007). Over the centuries, public administration theorists have introduced several models of government operation that enable authorities to adapt to rapid changes in the contextual environment and determine the nature of national and international activities (Shafritz *et al.*, 2004). One government model consists of three tiers or levels: federal, national and local and this is commonly observed in larger nations such as the USA or Australia, or for cultural reasons it is found in the United Arab Emirates. The federal government mainly has responsibilities for international aspects and, being the highest level of authority, its working scope covers the entire country. The national government is concerned about national aspects of a state, and the local government only deal with issues within a particular region of a state. Hence, a

town council or a regional council does not have as much power as a federal or national government (Hague and Harrop, 2007; Mahler, 2003).

Another model of government consists of two tiers or levels: national and local government, as in New Zealand, the UK, and some Arabic countries. In this model, national or central government is concerned with international issues such as protecting the state, and building economic, political, and social relationships with other nations. It is also concerned with national issues such as maintaining internal security; making policies and decisions about the commercial and public sectors; planning and implementing development projects that use national resources; income from taxes and tariffs; and delivering national public services such as education and social and health services. In contrast, local government has the main responsibility of delivering public services to local communities at the regional or city level (Hague and Harrop, 2007; Mahler, 2003).

The final commonly observed government model consists of a central government, which is therefore concerned both with internal and external aspects. Examples include the Omani government (MOI, 2010) and the governments of some other Arabic nations including Saudi Arabia, Kuwait, Qatar, and Bahrain (UNPAN, 2010). In this model, a large Ministry operates a major public sector entity and maintains a head office plus smaller regional or governorate units. The local level of government in this model has only limited power since head office distributes authority, responsibility and financial resources for providing public services among local government units dispersed in the governorates. For example, in Oman a central government Ministry such as the *Ministry of Regional Municipalities and Water Resources* is responsible for the municipality sector in most of the governorates, and the central government *Ministry of Housing* is similarly responsible for the housing sector in most of the governorates. In other words, these ministries maintain subunits within the governorates, each with limited administrative and financial authority. Head office exerts its control over the human and financial resources so that local subunits of the ministries cannot

recruit, promote, or dismiss staff; and final investment decisions also need to be approved by head office.

This research focuses on government organizations that provide public services directly to citizens at the governorate/regional/local level. Thus, the term 'local government' will be used here to refer to government entities that both face and are closest to citizens, and are therefore concerned with local community issues. Because the Arabic governments of Oman, Saudi Arabia, Kuwait, Qatar, and Bahrain maintain a single tier, semi-centralized administrative approach (UNPAN, 2010), terms such as directorate/entity/department/public authority all refer to the lowest arm of government. For example, Oman has a single tier of government that serves its citizens via Ministries; which in turn consist of smaller sub-units that include directorates and departments

2.2.2 The local government sector

Generally speaking, local government institutions vary in size, structure and function. They may be large independent entities which operate over a large area, deal with multiple stakeholders and deliver various types of public services; or may be small dependent entities of sufficient size to operate over a small area, deal with limited numbers of stakeholders and deliver specific public services. Government stakeholders include citizens, the financial community, future generations, interest groups, taxpayers, service recipients, unions, employees, media, competitors, suppliers, other governing bodies, and political parties (Bryson, 1996; Hague and Harrop, 2007; Rowley, 2011).

Dynamic and interchangeable interactions take place within the local government sector, with citizens as the main service recipients. Government institutions interact with citizens as individuals or as part of organized groups such as civil organizations. Similarly, citizens deliver their voice to government as an individual or as a group, visiting a physical location, or by 'visiting' via Internet, phone, or mobile device. Government agencies mainly interact with citizens for

the purpose of disseminating information about activities or to seek opinion on the delivery of new or improved services, and on decisions of local citizen interest.

Local government agencies also interact with other government agencies. Interaction and communication with national level entities occurs mainly for the purpose of discussing, clarifying, progressing, and requesting managerial, financial, legal and technical issues relevant to delivered services, development of human capital and financial and non-financial requirements. In contrast, interactions with other local government agencies may concern collaborative projects.

Local government institutions assume the main responsibility for delivering public services. Recently, and with the aim of delivering better quality services, more attention has been paid to enhancing interactions with citizens in order to better understand their needs and expectations. These needs and expectations can be influenced by many factors such as age, gender, education level, and social position, hence practitioners are increasingly interested in the evolution of the Web and government agencies are increasingly turning to services that make use of Web 2.0 applications (e.g., Bonson *et al.*, 2012; Central Office of Information, 2009; Department of Internal Affairs, 2012a; Gibson, 2010; Landsbergen, 2010).

The complexity and dynamics of the government sector ensures that multiple stakeholders are affected by political, technical, economic and social changes; making the search for opportunities to deliver better services a continuous process. Initiatives have included restructuring, decentralization of administrative and financial functions, top management turnover, training, change policies, involving citizens in decision-making/policymaking, transforming traditional ways of operation, and interaction and service delivery in new digital ways (Bertot *et al.*, 2010; Bonson *et al.*, 2012; OECD, 2003; Rowley, 2011). In many nations, local government policymakers are being obliged to adapt to changes in the external environment and they need to understand how ICT can best be utilized to

sustainably support more efficient and effective government that can offer a better quality of life for citizens.

2.3 Trends in the use of ICT by government

Governmental use of ICT can be traced back to the 1980s, when communication technology was introduced to increase operational efficiency (King, 1982). Later, as the Internet enabled government agencies to automate their e-Government services, the focus of the government sector in many developed nations shifted from being internal and managerial to involving external relationships with citizens and other business partners (Ho, 2002; Moon, 2002).

Early e-Government scholars predicted that automation of services would add value to government organizations and to society, and thereby would lead to reduced operating costs and improved quality and access to services (Basu, 2004; Gichoya, 2005; Gilbert *et al.*, 2004; Warkentin *et al.*, 2002). For example, a survey of 38 e-Government projects in Australia in 2003 revealed that an estimated investment of some \$108 million (AUD) was expected to generate \$100 million in savings for government; \$14.62 in savings per transaction for citizens; and more than \$25 in savings per transaction for businesses (NOIE, 2003). Recent reports confirm that successful e-Government projects can reduce transaction costs and processing times, and have increased government revenues (The World Bank Group, 2009). Social benefits include better access to services and reduced customer service costs (Gilbert *et al.*, 2004; Reddick and Frank, 2007).

The scope of ICT use within government has broadened over the course of the last two decades. Early implementations were chiefly concerned with improving internal process efficiency, which was followed by a trend towards improving service satisfaction via extra convenience for citizens. When the Internet and later the mobile devices were first utilised they became an external channel for service delivery. This point marked the beginning of an era that became known as 'Government 1.0' (Lips, 2008). Extending the use of the Internet and mobile

devices for the purpose of government-citizen interactions introduced a greater focus on accountability, transparency and need; and ushered in what is often referred to as the era of 'Government 2.0' (Baumgarten and Chui, 2009; Bonson, 2012; Hu *et al.*, 2009; Lips, 2008; Ressler, 2009).

Various political, governmental, economic, social and technical factors have driven the diffusion of e-Government across nations and government entities. Recent studies around the world show good progress towards an e-Government paradigm. For example, the United Nations e-Government Development survey (UN, 2010) stated that Oman and other GCC nations have achieved 'remarkable' performance towards transformation into e-Government. It appears this can be attributed to several significant factors including political support and technical and financial supports. For example, the Omani government has established a national digital strategy to accelerate the nation's transformation into a digital society (Information Technology Authority, 2009). Other GCC countries also continue to provide increased levels of financial and technical support to accelerate ICT diffusion among government units (Information Technology Authority, 2009). For example, ICT spending in the GCC is predicted to reach almost \$180 billion by the end of 2013 (Kapur, 2010).

As mentioned above, the earliest stages of migration to e-Government were characterized by governmental agencies adopting the Internet as an extra delivery channel to push basic information about government functions to citizens and others (Deakins *et al.*, 2002, 2007c; Layne and Lee, 2001; Reddick, 2005). Subsequent improvements to infrastructure and a willingness to diffuse e-Government initiatives among government agencies at different levels supported new collaborative ways of working, such as a one-stop shop collaboration model which involves a group of public organizations working together to integrate services into a single website. Integration across government units similarly enables a broader collaboration model, often referred to as the e-portal, which is a

citizen-centered services model hosted at the national or state level to integrate all government services into a single site.

Most recently, some nations are beginning to use ICT for the purpose of increased government-citizen interaction at the local and national levels. One observed pathway within this trend is the use of ICT to operationalize democratic processes. For example, some countries offer e-Voting systems to replace traditional, paper-based systems. Another pathway focuses on the use of ICT to support government-citizen interactions to enhance knowledge management, decision-making and innovation (Accenture, 2006; Bertot *et al.*, 2010; Bonson, 2012; Lips, 2008; Lukensmeyer and Torres, 2006a, b; Macintosh, 2003; OECD, 2001, 2003, 2005; Yates and Paquette, 2011). Benchmarking indicates progress is being made towards engaging citizens locally in decision-making. For example, a recent United Nations 'e-participation index' reveals that most of the top-20 countries have improved on their ranking. However, Western cultures continue to dominate and the survey indicates that only one Arabic country, Bahrain, ranks as a top country for e-Participation (UN, 2010).

The trend toward using ICT specifically to enhance government-citizen interactions is driven by many factors. In Western nations such as New Zealand, the UK and the USA, e-Participation is a key priority in the modernization agenda and governments intend to transform online engagement with people (Department of Internal Affairs, 2012a; Exec, 2003; King and Cotterill 2007; Lowndes *et al.*, 2001). For example, the UK government's modernization agenda, which has long favored users' needs over those of the organization, aims to apply new technology to make governance simpler and more accessible; and provide enhanced cooperation between central and local bodies of government (King and Cotterill, 2007; Newman *et al.*, 2001).

In light of the commercial development of Web 2.0 services, some governmental agencies have been encouraged to explore new tools. For example, New Zealand's

central government has begun to use Web 2.0 services to involve citizens in decision-making/policymaking via a collaboration project known as *Shared Workspace* (Department of Internal Affairs, 2012b). This project uses Web 2.0 tools to enable secure collaboration and allows specialist groups and networks to share expertise, experience, and good practices between government agencies.

It appears that the digitalization of government is now a global phenomenon, with many central and local governments considering whether and how to use ICT as the means to change how government agencies operate, collaborate, and otherwise engage with citizens and other stakeholders (Bertot *et al.*, 2010; Bonson *et al.*, 2012; UN, 2008, 2010).

2.3.1 Web 2.0 technologies

The Internet is a general communication infrastructure that links computers. In the early 1990s, Berners-Lee (1999) developed the first application to link documents located in different physical locations (Berners-Lee and Fischetti, 1999); an invention he called the World Wide Web (Web). He then went on to organize a 'neutral' consortium of stakeholders (W3C) to drive this invention, since which time the Web has developed in terms of both design and functionality.

Today, different terms are used to distinguish the first generation of the Web (Web 1.0) from the current Web version, which is referred to as Web 2.0 in this research. Web 1.0 was principled on the concept of a small group of people on the supply side pushing information to consumers, with limited input from the consumer demand side. Hence, under Web 1.0 even today, website owners make information available *they* believe has value for the citizen/consumer. This could include basic information about the organization's functions, services and activities.

The term Web 2.0, which first began to appear in 2004, is closely associated with Tim O'Reilly through the O'Reilly Media Web 2.0 conference. O'Reilly (2006) loosely defines Web 2.0 as:

"...the business revolution in the computer industry caused by the move to the Internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: build applications that harness network effects to get better the more people use them."

According to O'Reilly (2006), the uniqueness of Web 2.0 is that it works as a platform for software applications, and as a server instead of a desktop client PC. He further argues that user-generated content can be harnessed to create value and he thus characterizes Web 2.0 sites as offering rich user experiences, user participation, dynamic content, metadata, Web standards and scalability, openness, freedom and collective intelligence. Web 2.0 sites typically allow users to run software applications entirely through browsers like Google Docs, which accepts most popular file formats to enable users to create documents, spreadsheets and presentations online that enable collaboration between geographically dispersed users (<http://www.google.com/google-d-s/tour2.html>). Users can also own the data on a Web 2.0 site and exercise control over it, such as with Wikipedia content (<http://en.Wikipedia.org/>).

Vossen and Hagemann (2007) also recognize a new generation of the Web resulting from developments that began more than ten years ago, involving applications and technology and changes in peoples' perceptions and increased participation. For example, Chang and Kana (2008) define Web 2.0 as, '... a networked platform for supporting individual users who create content and collectively share and update information and knowledge using sophisticated and diverse devices and tools, and remix and improve on content created by each other'.

From these descriptions, it is clear that Web 2.0 is not a new technology at all; rather it is more about new ways of designing, developing and using websites. O'Reilly explains that, most importantly, the Web is continuing to move from a pure read medium in which users only pull information, to a read/write medium in which users also contribute to Web content. For example, Wiki and Blog applications enable users to contribute directly to the content of Web pages. Consequently, developments in technologies related to the design and development of the Web; such as XML, PHP, CSS, and AJAX technologies are inspiring a new wave of Web 2.0-based applications and services (Bates, 2006). Examples include: Web-based community, hosted services, Web applications, social networking sites, video sharing sites, photo sharing sites, Wikis, Blogs, mashups, and folksonomies (Bertot *et al.*, 2010; Bonson *et al.*, 2012; Chang and Kanan, 2008; Dadashzadeh, 2010; Kaplan and Haenlein, 2010; O'Reilly, 2006; Solomon and Schrum, 2007; Vossen and Hagemann, 2007). The following is a description of the current main Web 2.0 applications:

- **Wiki** refers to a collection of pages created by collaboration between a group of people, plus an authorized user who has the capability to add, remove, and edit page content (Chang and Kanan, 2008; Dadashzadeh, 2010; Vossen and Hagemann, 2007). Perhaps the best-known Wiki is the online encyclopaedia Wikipedia (<http://en.Wikipedia.org>). Such types of Web-based applications are being used by organizations to create a pool of knowledge. For example, Reuters (OECD, 2011) deployed a Wiki application to build a financial glossary from readers' input (<http://glossary.reuters.com/index.php>)
- **Blog** refers to Web pages created and updated by individuals who commonly present their own thoughts about specific topics, and allows visitors to read and reflect or comment on the content (Chang and Kanan, 2008; Dadashzadeh, 2010; Vossen and Hagemann, 2007). Blogs first appeared in 1997 when Rob Malda published news (Vossen and Hagemann, 2007). Many online social networking sites contain Blog

tools. Organizations also post Blogs and use the feedback to monitor what is being said about them, which provides a valuable information resource (OECD, 2011)

- **Social networking site** refers to a website that allows individuals to build personal profiles, articulate a list of other users with whom they share a connection, and view and track their list of connections and those made by others within the system (Chang and Kanan, 2008; Dadashzadeh, 2010; Vossen and Hagemann, 2007). The most popular social networking sites currently are: Facebook, MySpace, Twitter, and LinkedIn (Alexa, 2012a). Many organizations maintain a profile on social networking sites to build relationships and facilitate events (OECD, 2011)
- **Mashup** refers to Web applications that combine content from more than one source to create a new service (Chang and Kanan, 2008; Dadashzadeh, 2010; Vossen and Hagemann, 2007). An example of a mashup application is Google Maps API
- **Tagging** refers to the method of tracking online items and can help to discover related items and improve searches (Chang and Kanan, 2008; Dadashzadeh, 2010; Vossen and Hagemann, 2007). For example, Flickr.com uses a tagging facility that enables users to track their personal interest photos
- **Folksonomy** refers to the categorization system people use to classify Web content (Dadashzadeh, 2010; Vossen and Hagemann, 2007). A well known website that offers this as a service is delicious.com, which allows users to bookmark their interests and share them with others
- **Podcast** refers to a way of distributing multimedia files such as music or video over the Internet. Multimedia files generated by users are uploaded to a website and are made available for others to watch and comment on (Chang and Kanan, 2008; Dadashzadeh, 2010). YouTube.com is a well-known example

- **Discussion forum (Forum)** refers to an online discussion site that contains several categories or threads with individual posts. Discussion forums can be used by organizations as an efficient and effective way of achieving group interaction for different purposes, and where users can help each other to answer questions (OECD, 2011)

In addition to technical changes, social change has fuelled the increasing trend toward online interactions (Dadashzadeh, 2010; Landsbergen, 2010; Ressler, 2009; Vossen and Hagemann, 2007). The majority of the users of social networking sites are the younger generation that has grown up with the Internet (Lenhart *et al.*, 2010), and their acceptance of Web applications has helped to make the Web and the Internet an extremely popular and widely used medium (O'Reilly, 2006; Vossen and Hagemann, 2007). Their easy acceptance could be due to educational, economic, and governmental factors and it is pertinent to note here that the Omani government has introduced educational programs on information technology into every primary school.

In summary, Web 2.0 is a term in wide use today that describes social technology-based tools that enable people to collaborate and share information online, anytime and anywhere there is Internet access. Popularity of the term has led scholars and others to coin a flurry of new Web 2.0 application and service terms. Examples include Government 2.0 (Baumgarten and Chui, 2009; Bonson, 2012; Hu *et al.*, 2009; Lips, 2008; Ressler, 2009); Library 2.0 (Exploring Web 2.0 and Libraries, 2006); and Enterprise 2.0 (McAfee, 2006). The next section explains the social use of Web 2.0 applications for building virtual communities that support social interaction and information dissemination and collaboration.

2.3.2 Social networks and Web 2.0 technologies

Social networks have undergone significant development during the last two decades, ever since the emergence of the Internet introduced new ways for people to network. Back in the 1950s, when he spent two years studying the social

structure of a fishing village in Norway, Barnes (1954) found that most individuals make organizational decisions based on their personal contacts and informal relationships across the boundary of the organization. He concluded that stable and unstable associations serve many different purposes, and that the social structure combines different patterns of ties which people use in consideration of their actions.

Online social networks for the purposes of this research are considered to be a synthesis of the works by Liebowitz (2007) and Wellman (1996), and therefore refer to a set of relationships between groups of actors. These individuals and/or organizations have similar interests, and interact and share information using Web 2.0 applications and tools such as Wikis, Blogs and social networking sites. **Figure 2.2** outlines the structure of such an online social network, the main components of which are:

- **Virtual community**, which refers to the group of actors that interact online for a shared purpose. This can take different forms depending on the purpose of the network and the number of participants (Faraj *et al.*, 2011; Vossen and Hagemann, 2007; Wellman, 1996; Yates *et al.*, 2010)
- **Social networking service**, which refers to the online services provided to enable the interactions between the actors
- **Social networking applications or social media applications**, which refer to the software applications or tools, such as Wikis, discussion forum and Blogs, which form a platform enabling networking between the actors
- **Infrastructure**, which refers to the tools that need to establish interaction and communication and which 'tie' together the actors within the network. The infrastructure represents the core or base of any communication system.

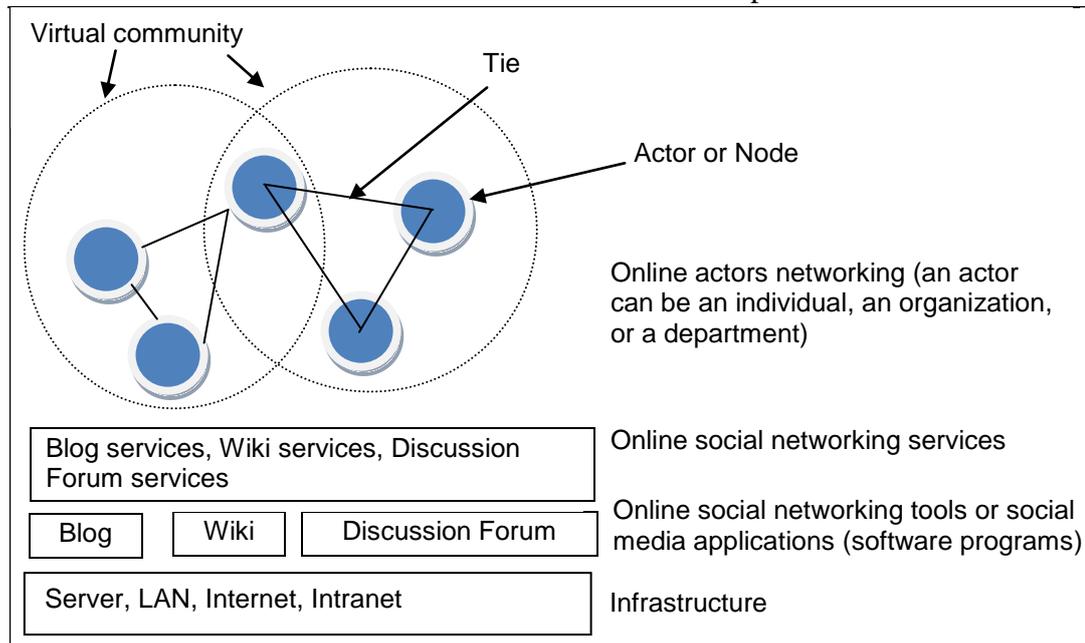


Figure 2.2: Structure of an Online Social Network

Social networking tools in the guise of Web 2.0 applications have been described as a powerful means to build virtual communities (e.g., Faraj *et al.*, 2011; Vossen and Hagemann, 2007; Yates *et al.*, 2010), because in principle they enable dialogues to be created. Meaningful dialogue can be used to share and create knowledge (Bohm, 1996; Senge, 1990; Yates *et al.*, 2010) by sharing information, understanding, experience and thoughts. For example, Sun and Scott (2003) argue that dialogue is a powerful means to create and transfer knowledge from offsite resources to the organization. Effective dialogue and collaboration enables creation and verification of ideas, which improves the quality of knowledge (Cavaleri, 2004).

At a social level, interest in social networking has grown dramatically. For example, in 2006 a study found that social networking sites like MySpace.com and Blogger.com were the fastest growing with regard to new visitors (Walker, 2006). Facebook is currently the dominant social networking site, with its users comprising some 55 percent of all global users, who also account for one in every seven minutes users spend online (ComScore, 2011). In Oman, social networking sites, **Table 2.1**, are consistently listed in the top 10 of most popular websites.

Table 2.1: Popular social networking sites ranking for selected countries (Sept 2012)

Top sites	Facebook	YouTube	Twitter	Wikipedia	Blogspot	S-Oman*
<i>Global</i>	1	3	8	6	11	
Bahrain	1	3	7	11	8	
Egypt	1	3	16	22	7	
Jordan	1	3	10	13	-	
Kuwait	2	3	7	10	8	
NZ	2	4	11	8		
Oman	3	2	8	12	9	6
Qatar	1	3	8	9	7	
Saudi Arabia	3	2	6	13	8	
UAE	1	4	7	9	11	
UK	2	4	11	9	-	
USA	2	3	9	6	13	

Source: (Alexa, 2012b), * www.s-oman.net is an Omani public community interaction site

Even as early as 2005, when they began to play an important role in commercial activities and economic developments, virtual communities were predicted to become an important part of modern society supported by Web 2.0 technology (Finin *et al.*, 2005). As the number of commercial social network sites increased, early Web 2.0 supporters believed that the Web was changing direction more toward social networks (Baumann, 2006; ITNOW, 2006). By then, computer-mediated social networks were providing opportunities for users to share information about the variety of products on offer (Hogg and Adamic, 2004). For example, eBay, as an early pioneer of virtual community marketplaces, allowed millions of users worldwide to discuss products, share common interests and best practices, and receive help and feedback from others. These types of virtual communities stimulate the economy by augmenting transactions between loosely connected and diverse communities of individuals and small businesses.

Today, individuals routinely use commercial social networking sites to share information, files, and other digital products such as images and music. Different networking goals create diverse types of online virtual communities that function as social spaces supporting a wide variety of activities related to information seeking and sharing in social, educational, political, and business contexts. Online social networks are critical for generating knowledge and may even enhance innovation by stimulating knowledge flows and serving as incubators for new ideas. Wikis and Blogs applications also improve collaboration across organizations and between business units.

2.4 Government-citizen interaction

Interactions with citizens occur at all levels of government including the local and regional levels, which is the focus of this study. They encompass a wide range of activities, from policymaking to delivering and consuming (other) public services. Although the nature of the government relationship with citizens has been debated and researched for several decades (Ho, 2002), the term 'citizen orientation' refers to the recently introduced notion of treating citizens as customers (Osborne and Gaebler, 1992). This requires more attention to citizens' needs during the design and delivery of services and while policymaking (Bertot and Jaeger, 2006; Bertot *et al.*, 2010; Lowndes *et al.*, 2001; Lukensmeyer and Torres, 2006a, 2006b; Reddick, 2010; Scott, 2006; Shane, 2004; Zwass, 2006). It is widely argued that such participations can produce many important benefits for both government and 'the community' (e.g., Bertot *et al.*, 2010; Irvin and Stansbury, 2004). Strengthening relationships with citizens is described as a powerful means to increase trust, transparency and accountability, and to identify community needs; thereby improving the organization's performance and client satisfaction (e.g., Bertot *et al.*, 2010; Bonson *et al.*, 2012; Cavaleri, 2004; Devas and Delay, 2006; Lukensmeyer and Torres, 2006a, 2006b; Osborne and Gaebler, 1992; Schedler and Summermatter, 2007).

Macintosh (2003) states that ICT can be used to engage with a wide audience, provides relevant information, enables more in-depth consultation, facilitates analysis of contributions, and provides relevant and appropriate feedback. He also states that the main reason for citizen engagement in policy-making is to produce better policy, build trust, gain acceptance of policy and share responsibility for policy-making. Norris (2001) agrees that ICT can play a major role in engaging citizens and may even attract individuals currently marginalized from the political system, such as the younger generation or those living in isolated areas. While Internet capability implies increased reach anywhere anytime, the extra challenges (Ho, 2002) help ensure that it is still common that government-citizen interactions take place during regular office hours using well-accepted 'traditional' face-to-face, telephone or e-mail means.

Scholars and practitioners alike have shown significant interest in proposing a model of citizen engagement. For example, Macintosh (2003) presented a model featuring three aspects: information; consultation; and active participation. Similarly, Lukensmeyer and Torres (2006a) developed a participation framework that distinguishes engagement from collaboration.

2.4.1 E-Government and social networks

Many government agencies have signaled their intent to utilize Web 2.0 applications, and this trend has increased in the last five years (UN, 2012). However, the diffusion of Web-based application has so far been very limited within the governmental agencies of Asian nations (Kuzma, 2010) and Arabic nations. The main social media in current use are the well-known social networking sites Twitter and Facebook; and social networking applications such as Blogs, Wiki, and discussion forums.

Reports based on Western experiences demonstrate how such applications reach out to citizens and other stakeholders, to share information within and across government agencies and disseminate information to the public. This enhances

community participation in decision and policymaking, achieving transparency, self-promotion and education (Bertot *et al.*, 2010; Bonson *et al.*, 2012; Department of Internal Affairs, 2012a, 2012b, 2012c; OECD, 2011). Facebook is being used for policy consultation, advertising, and education (OECD, 2011). Similarly, Twitter was used as a channel for reaching out to earthquake-affected customers (OECD, 2011). Wiki applications share information and experiences between government agencies (Bertot *et al.*, 2010; Department of Internal Affairs, 2012c).

It is apparent that organizations and citizens can experience real benefits associated with efficiency gains, user convenience, transparency, accountability, involvement, improved trust, knowledge management and better archiving (Bertot *et al.*, 2010; Department of Internal Affairs, 2012a; Lathrop and Ruma, 2010; Noveck, 2009; OECD, 2011; Yates and Paquette, 2011). For example, in New Zealand, the tax administration agency reports that using Facebook for policy consultation and advertising has enabled it to reach a wider range of people who were unlikely to provide feedback through conventional written channels (OECD, 2011). Similarly, many government agencies in the USA use social media to present information and services such as sharing live news, offering training opportunities, and engaging the public in discussions (Federal Web Managers Council, 2012).

Western experiences also show that success in government-citizen interactions enabled by Web 2.0 applications requires consideration of managerial and technical issues. For example, the New Zealand experience highlights the need to consider appropriate planning tools and communication channels, the target customer; and legislative issues such as terms and conditions. In addition, there is a need to develop a strategy concerned with how social networking tools will be used, the quality of information sharing, and consideration of the boundaries of responsibility and accountability for the information provided (OECD, 2011).

Some governments have developed guidelines to support the adoption of Web 2.0 social media within their own government agencies, (Government Digital Services, 2012). For example, the New Zealand government has developed guidelines for achieving best practice using social media. It provides useful templates and tools for planning and an overview of the strengths, weaknesses, benefits and risks of the toolset (Department of Internal Affairs, 2012d). Gartner Research's vice president and analyst, Andrea Di Maio, describes these guidelines as 'the best government social media guidelines so far' because the principles focus on an individual's role, they are down-to-earth, and provide actionable decision frameworks (Maio, 2011).

2.4.2 The importance of achieving a meaningful dialogue

In the governmental context, social networking tools can be used to strengthen the relationship between government and citizens. In principle, convenient government-citizen interactions lead to meaningful dialogue that identifies citizen's needs, enhances shared learning, and leads to improved decision-making and innovation. In reality however, little has been written about the characteristics of discourse that organizations need to establish, their reasons for doing so, or how such online discourse might be made routine.

The communication literature indicates that three different forms of conversation exist: debate, discussion, and dialogue. Senge *et al.* (1994) separate human-to-human conversation into a four-stage continuum based on the participants' contribution to the discussion: raw debate, polite discussion, skilful discussion, and dialogue. He further states that the difference between skilful discussion and dialogue is intention. In discussion, the intention is to come closer together to make a decision, reach agreement, solve a problem, or identify priorities; and the parties may choose to explore new issues and build some deeper meaning among the members. In dialogue, the intention is to explore, discover or generate ideas; and regular meetings might be organized to develop thinking about a specific topic.

Table 2.2 compares dialogue and discussion characteristics from the works of Bohm (1996), who describes dialogue as a powerful technique to share understanding, and Senge (1990) who refers to dialogue as a set of techniques for improving organizations, enhancing communications, building consensus, or solving problems. The knowledge management literature also discusses the value of dialogue for knowledge creation and sharing that enables creation and verification of an idea and improves the quality of knowledge (Cavaleri, 2004). In the online virtual world, social networking tools are used to share information, thoughts, ideas and experiences; and to create and share knowledge.

For example, Google launched a (now defunct) service called ‘knol’ in which individuals could share and add content collaboratively. Similarly, the Finnish Ministry of Justice hosted a discussion forum where citizens could comment on the administration of new or ongoing projects, legislative reforms and other topics.

Table 2.2: Discussion and dialogue

	Discussion	Dialogue
Purpose	Analyze the presented idea from different points of view	Explore new ideas, sharing of understanding
Characteristics	Analyze the presented idea, presenter defends his/her idea, no collaboration	Free flow of ideas, all participate, and individuals suspend their assumptions.
Participation	Only the presenter	All participate
Decision	Weighted alternatives in order to choose one	No decision is made
Winner(s)	Individual	All
Led by	The presenter of the idea	Facilitator: Helping people to maintain ownership of the process and outcomes Must keep the dialogue moving Influences the flow of development by participating in the dialogue
Skills	Reflection, inquiry, and discussion	Reflection, inquiry, and dialogue

Source Bohm (1996); Senge (1990); Senge *et al.* (1994)

2.5 Cultural context of the research

The present research was conducted in the Sultanate of Oman, which is the third largest nation in the Arabian Peninsula, **Table 2.3**. It shares land borders with the Republic of Yemen, the Kingdom of Saudi Arabia, and the United Arab Emirates. Oman is a very ancient nation that has gone by different names through the ages, such as Majan, Megan, and Mezoun. Archaeologists have shown that civilizations have flourished in the area of modern day Oman for at least 5,000 years and probably much longer (MOI, 2007).

According to a recent census, the total population of Oman is 2,773,479 citizens (58% male, 42% female). In addition to Omani nationals there are significant numbers from other Arab nations and from India, Pakistan, and Western countries; which together account for some 30 percent of the population (National Center for Statistics and Information [NCSI], 2011).

Table 2.3: Characteristics of Oman

Land area	309,500 sq km
Language	Arabic/English
GDP	17,731.1,243.1 R.O *
Population	2.77 million**
Estimated Internet users per 100 inhabitants	62.6***
Mobile subscribers per 100 inhabitants	165.54***
Main fixed telephone lines per 100 inhabitants	10.20***
Total fixed broadband per 100 inhabitants	1.89***

Sources: (*MOI, 2010) (**NCSI, 2011) (***)UN, 2012) RO= US\$2.60

The Sultanate of Oman is divided into eleven governorates, each of which consists of several districts (wilayats). The governorate of Muscat is the most densely populated with a population of 775,878 people. It is the seat of government and the country's administrative heartland. Similar to other Arabic nations in the region, Islam is the predominant religion and Arabic is the common language. However, Oman distinguishes itself from other Arabic nations by having its own

customs and norms. The government in Oman is a monarchy and His Majesty Qaboos bin Said Al Said is the present Head of State. His Majesty appoints Members of Council and the most recent appointments include two females. Oman has two legislative bodies (a bicameral system): a State Council '*Majlis A'Dawla*' with members appointed by His Majesty, and a Consultation Council with members elected by citizens. The two councils combine to form the Council of Oman '*Majlis Oman*', which assists in drawing up the general policies of the State.

Omani government institutions vary by size, type, structure, responsibilities and authority; from small public authority entities to large institutions and ministries that have small units or directorates located in the governorates and wilayats. For example, the Information Technology Authority (ITA) is a financially and administratively independent legal entity that was established under Royal Decree in 2006 to participate in the operation of the IT sector. On the other hand, the Ministry of Education is a large, financially and administratively independent entity that has directorates in the governorates and regions to operate the local education sectors.

According to the Ministry of Civil Service, the Omani work force is predominantly employed by government institutions. Employees are overwhelmingly male and middle-aged (MOCS, 2010). Although an 'Omanisation' policy aims to offer training and scholarships to leverage the performance levels of the Omani work force and replace expatriate workers, defections of well-educated staff to the higher-paid private sector continue (MOCS, 2010).

The *Basic Law of the State* defines the relationship between different executive, parliamentary, and judicial authorities. It also lays down the rights and duties of citizens, protects their freedoms, and safeguards the right of citizenship. Citizens have the opportunity to express their views and concerns and to be active

participants in public affairs. Omanis reject all forms of fanaticism and extremism; instead supporting freedom of thought and belief. For example, Basic Law Article 28 states, "Freedom of opinion and expression, whether spoken, written or in other forms, is guaranteed within the limits of the Law." Furthermore, "The freedom to practice religious rites in accordance with recognized customs is guaranteed provided that it does not disrupt public order or conflict with accepted standards of behavior." (MOI, 2002)

The nation's main source of income is oil and gas production; hence, GDP is highly sensitive to oil price fluctuations. The government has begun a long-term development strategy to diversify income sources that will increase contributions from the industrial and tourism sectors. In 2003, the government started to implement a national digital strategy called *eOman* that aimed to:

- Streamline government services for citizens and businesses
- Create and nurture knowledge-based industries
- Develop a local ICT sector
- Support a better competitive environment
- Provide employment for Omani youth
- Enable better healthcare
- Improve educational opportunities
- Support the tourism sector
- Enhance social development using IT
- Make Oman a more attractive destination for foreign investment and conducive for business (ITA, 2007)

Since 2006, ITA has supported the implementation of e-Government initiatives. Its vision is 'to transform the Sultanate of Oman into a sustainable Knowledge Society by leveraging Information and Communication Technologies to enhance government services, enrich businesses, and empower individuals'. ITA is 'pioneering the implementation of eOman, which comprises a wide range of

initiatives and services designed and created to improve the efficiency of government services, enhance the activities of businesses and empower individuals with skills and knowledge, to meet society's needs and expectations and to direct Oman towards becoming a sustainable Knowledge-based Economy.” (ITA, 2009) The recent focus of the ITA program has been to develop human resources and improve the information infrastructure between government institutions, businesses, and citizens.

In general, **Table 2.4** shows rapidly improving UN e-Government indices between 2010 and 2012.

Table 2.4: United Nations e-Government indices

UN Index	2010	2012	Δ
Infrastructure index	0.2092	0.3942	88.4%
Human capital index	0.7980	0.7224	-9.5%
Online service index	0.3683	0.6667	81.0%
E-participation index	0.1571	0.4474	184.8%
e-Government development index	0.4576	0.5944	29.9%
World e-Government development ranking	82	64	-22.0%
Estimated Internet users per 100 inhabitants	16.84	62.6	271.7%
Mobile subscribers per 100 inhabitants	115.58	165.54	43.2%
Main fixed telephone lines per 100 inhabitants	9.84	10.20	3.7%
Total fixed broadband per 100 inhabitants	1.15	1.89	64.3%

Source: (UN, 2010, UN, 2012)

Governmental efforts to transform Oman into a digital society mean that a transformation to e-Government remains a top priority. Consequently, the *Five-Year Development Plan (2011-2016)* produced by the Minister of National Economy states that IT sector development is one of the government's priorities (Kamoonpuri, 2009). Although a recent United Nations survey indicates that there has been rapid progress in the development of e-Government in Oman, more work

is needed to progress to the more advanced levels (**Table 2.5** and **Table A6.1-Context for the Study** in **Appendix 6**). The low e-Government index score indicates that the Omani government needs to improve e-Government infrastructure; leverage IT knowledge capacity of citizens; and otherwise assist government organizations to overcome the challenges inhibiting further online service offerings.

Table 2.5: UN e-Government index (Oman)

UN Index	UAE	Bahrain	SA	Qatar	Kuwait	Oman
Infrastructure index	0.5568	0.4183	0.4323	0.4513	0.4179	0.3942
Human capital index	0.7837	0.8057	0.7677	0.7316	0.7885	0.7224
Online service index	0.8627	0.8627	0.7974	0.7386	0.5817	0.6667
E-participation index	0.7368	0.6579	0.6316	0.6316	0.1842	0.4474
E-government development index	0.7344	0.6946	0.6658	0.6405	0.5960	0.5944
World e-Government development ranking	28	36	41	48	63	64
Estimated Internet users per 100 inhabitants	78.0	55.0	41.0	69.0	38.25	62.6
Mobile subscribers per 100 inhabitants	145.45	124.18	187.86	132.43	160.78	165.54
Main fixed telephone lines per 100 inhabitants	19.7	18.07	15.18	16.95	20.69	10.20
Total fixed broadband per 100 inhabitants	10.47	12.21	5.45	9.17	1.68	1.89
Fixed Internet subscriptions per 100 inhabitants	20.24	6.79	7.02	9.13	12.51	2.88

Source: (UN, 2012)

2.6 Summary of current research gaps

There is a clear and growing trend toward using social networking to enhance e-Government-citizen interactions. However, little is known about the phenomenon as few studies have addressed information technology innovation adoption by government organizations, especially concerning Web or other technology-based applications such as social media applications that can enable interaction and sharing. Almost exclusively, existing studies relate to the experiences of Western organizations in the UK and the USA (Bertot, 2012). In addition, there is little knowledge about what government agencies are actually aiming to achieve when they reach out to citizens using such a social media application (Bonson *et al.*, 2012; Bertot *et al.*, 2010). Similarly unknown is the capability of social media applications for creating a meaningful dialogue between governmental organizations and citizens (Bonson *et al.*, 2012). These are significant gaps for researchers to explore.

There is also a lack of knowledge about the adoption of IT innovations in developing countries (Al-Hujran *et al.*, 2011). Early innovation studies highlight the importance of human factors, organizational factors, technological factors, and environmental factors for successful adoption and implementation of an innovation (Kamal, 2006; Tornatzky and Klein, 1990). However, most of these appear to focus on the critical issues that affect the adoption of IT in Western countries (e.g., Scott, 2006; Ho, 2002). In particular, the literature does not identify the issues that initially prompt the organization to consider offering sophisticated online services in an Arabic country like Oman.

There is also a general lack of knowledge about the use of e-Government applications (Lips, 2008), in Arabic nations specifically (Al-Busaidy and Weerakkody, 2009; Al-Hujran *et al.*, 2011; Chatfield and Alhujran, 2009). The governmental role in technology diffusion and the role that ICT plays in democracy and participation is also unclear (Andersen and Henriksen, 2005).

Moreover, the majority of e-Government studies are quantitative, which frequently do not offer rich information about the addressed topic (Lips, 2008).

No less significant is the research that shows e-Government initiatives do fail, particularly in developing countries (e.g., Dada, 2006; Heeks, 2006b, 2003). The fact that Heeks (2006a) attributes most of these failures to poor implementation processes and to management of the project helped establish the need for this study.

2.7 Investigating the primary research question

Using information technology to achieve meaningful government-citizen dialogue requires consideration of many factors, including technology selection and adoption, virtual community creation, and operationalizing a meaningful dialogue.

Because the primary focus of this study is consideration of the critical success factors concerning government organization rollout of a suitable new technology, this arguably involves diffusion of an innovation. Early innovation studies highlight the importance of human factors, organizational factors, technological factors, and environmental factors for successful adoption and implementation of an innovation (Tornatzky and Klein, 1990; Zaltman *et al.*, 1973). Rogers (1995) defines innovation as a 'new idea' and describes the adoption of an innovation as, 'the process through which an individual or other decision-making association passes from first knowledge of an innovation to confirmation of the decision to continue using the innovation. Roger's Diffusion of Innovation (DOI) theory is widely accepted within the information systems discipline, and is used to address adoption and use aspects of technology. It addresses the adoption of innovation from an organizational perspective. Thus, Rogers (1995) DOI theory was judged suitable as a starting point for an overarching framework of organization side considerations. According to Rogers, diffusion of a new IT innovation into an organization involves a process with five stages:

1. The *Knowledge* stage is where the individual is first exposed to an innovation but lacks information about it. During this stage he/she has not been inspired to discover more information about the innovation
2. The *Persuasion* stage is where the individual becomes interested in the innovation and actively seeks further information/detail about the innovation
3. The *Decision* stage is where the individual weighs the advantages/disadvantages of using the innovation, and decides whether to adopt or reject the innovation
4. The *Implementation*, stage is where the individual employs the innovation to a varying degree, depending on the situation. During this stage, the individual determines the usefulness of the innovation and may search for further information about it.
5. The *Confirmation* stage is where the individual seeks support for his or her decision, and finalizes the decision to continue using the innovation. This involves both intrapersonal and interpersonal confirmation that the right decision has been made.

The Technology Acceptance Model (TAM) (Davis, 1989) is also widely accepted within the information systems discipline. It is used to address adoption and use aspects of technology from the perspective of an individual user. Thus, the Davis (1989) TAM was judged appropriate as the starting point for an overarching framework of citizen side considerations. The TAM helps predict and explain underlying factors that motivate individual users to accept and use new information technology. Typically, TAM is extended/combined with other models that identify the influence of further factors that affect the user's decision to accept and use IT; such as social factors and organizational and personal factors (e.g., Venkatesh *et al.*, 2003; Venkatesh and Davis, 2000). According to the Theory of Reasoned Action (Fishbein and Ajzen, 1975), from which TAM is derived, individual attitudes and subjective norms influence the users' behavioral intention, which, in turn, influence actual user behavior. TAM posits that user

acceptance of IT can be explained and predicted by assuming that Perceived Ease Of Use (PEOU) and Perceived Usefulness (PU) are the key determinants of IT acceptance behavior. According to Davis (1989), positive feelings toward information system PU and PEOU positively influence user attitude toward the system, which in turn positively influences *intention to use* the system and *actual use* of the system. Hence, this study divides citizen acceptance and use of social networking services into two separate stages: *intention to use (Acceptance)* and *actual use*.

The study did not set out to test either the DOI or TAM models. Rather, the Rogers (1989) framework is extended to include acceptance and implementation aspects. Practically speaking, knowledge of the theories provided the keywords for the literature review in Phase I and offered pointers (from the Western literature) to the data needing to be collected in subsequent research phases.

In summary, this study addresses the factors involved in the adoption and use, by government organizations and citizens, of Web or other technology-based applications for achieving government-citizen dialogue. It assumes a three-stage process that involves *Acceptance, Adoption and Implementation*, in which the *Implementation* stage is further divided into three sub-stages: *Introduction, Operation and Use*:

- *Acceptance* is referring to the act of a government, and its citizens, forming a positive attitude toward Web or other technology-based applications that offer online social networking services designed to achieve meaningful dialogue.
- *Adoption* is referring to the act of a government organization making the decision to utilize a suitable Web or other technology-based application to help it achieve meaningful dialogue with its citizens.
- *Implementation* is referring to the act of a government organization implementing a suitable Web or other technology-based application intended to achieve meaningful online dialogue with citizens. The local

government organization implements (i.e. introduces and operates), and citizens make use of, a suitable Web or other technology-based application intended to achieve meaningful online dialogue. This stage, which is part of the fourth (*Implementation*) stage of the Rogers (1995) diffusion of innovation framework, comprises three sub-stages:

- *Introduction* refers to the act of the government organization introducing the online social networking service to citizens. This stage is part of the fourth (*Implementation*) stage of the Rogers (1995) diffusion of innovation framework.
- *Operation* refers to the period of time during which the government organization operates a virtual online community in which its intention is that government and citizens will interact and share their interests. Simultaneously, its citizens are willing to use the delivered online social networking service to interact and share comment, opinion viewpoint, and suggestion with the government organization. This stage is part of the fourth (*Implementation*) stage of the Rogers (1995) diffusion of innovation framework.
- *Use* refers to the act of the government organization and its citizens actively accessing the online social networking service and interacting and sharing information. For example, the organization may post topics for discussion or reply to member enquiries, and citizens may read or participate in the discussion or post enquiries. This stage is part of the fourth (*Implementation*) stage of the Rogers (1995) diffusion of innovation framework, and concerns the *actual use* stage of the Davis (1989) technology acceptance model.

In light of the above description, the Primary Research Question Investigation Framework (PRQIF) was developed to facilitate the investigation of the primary research question. As shown in **Figure 2.3**, this has three parts: *Acceptance*, *Adoption* and *Implementation*.

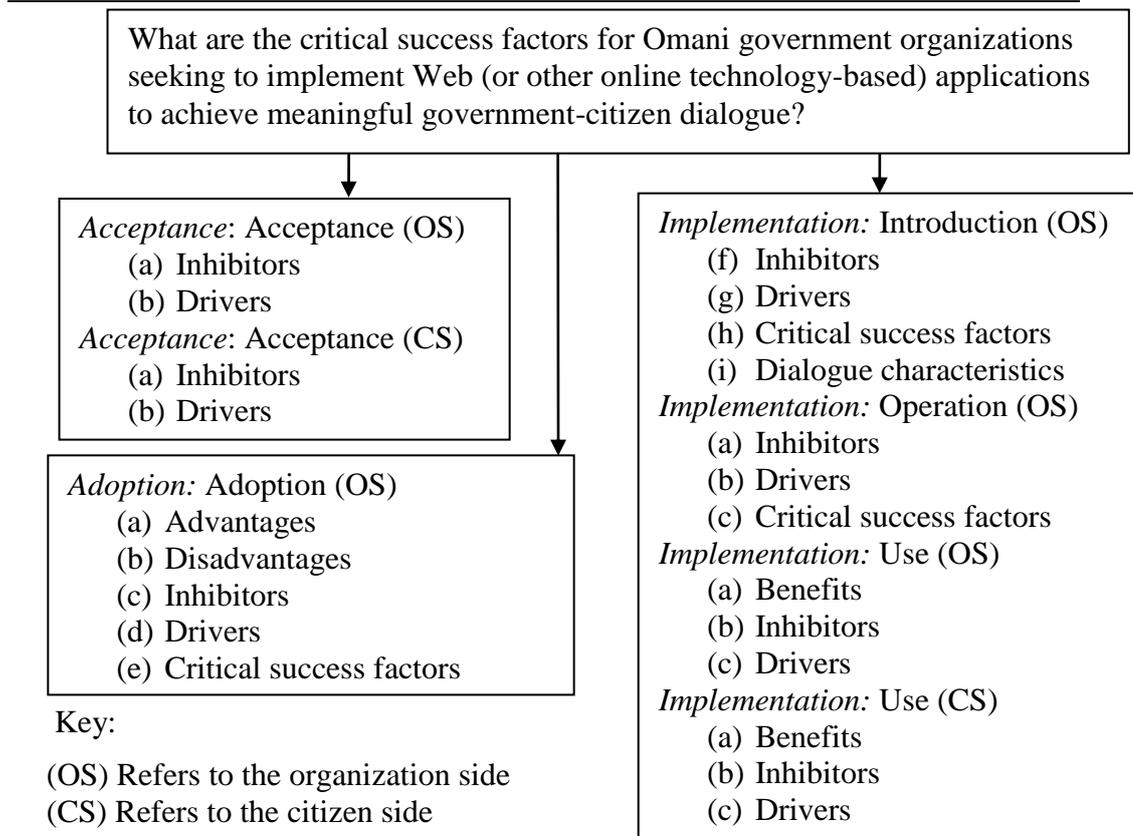


Figure 2.3: Framework for investigation of the primary research question (PRQIF)

Acceptance

This part of the PRQIF focuses on the organization and citizen sides to address the *Acceptance stage* in order to feed the *National-level* of the proposed multi-level technology acceptance model. From the organization side, the acceptance part of the PRQIF focuses on identifying external considerations (National-level aspects) that could influence the government organization to accept providing social networking services by using Web or other technology-based applications such as social media applications for achieving meaningful dialogue with citizens. External considerations may be **drivers** or **inhibitors**. Drivers are factors that facilitate, speed up, or in some other manner force the acceptance. Drivers may social, economic, technical, political or cultural. In contrast, inhibitors are factors that prevent the acceptance of providing such online social networking services to interact and share of information with citizens. Inhibitors may be social, economic, technical, political or cultural.

From the citizen side, the acceptance part of the PRQIF focuses on identifying external inhibitors/drivers that may influence the acceptance of citizens to use online social networking services. External inhibitors may be social, economic, technical, political or cultural.

Adoption

This part of the PRQIF predominantly focuses on the organization side to address the *Adoption stage* in order to feed the *Organization-level* of the proposed multi-level technology acceptance model. It focuses on identifying the adoption advantages, disadvantages and the internal considerations that may influence the adoption decision. This decision is made in light of such considerations as organizational capabilities, the value to the organization of the adoption and the types and degree of any required changes.

Implementation

This part of the PRQIF focuses on the *Implementation* sub-stages (introduction, operation and use) in order to feed the Management-level of the proposed multi-level technology acceptance model. It focuses on the organization and citizen sides to consider the introduction, operation and use of Web or other technology-based applications from the organization and citizen sides.

From the organization side, this part addresses the introduction, operation and use of social networking services. The introduction section focuses on identifying considerations that may influence the development and installation of selected application to offer the social networking services, and creation and activation of the virtual community for the interaction and sharing of information. The operation section focuses on identifying considerations that may influence the operation of the virtual community. Lastly, the use section focuses on identifying considerations that may influence government organization to interact and share information with citizens. From the citizen side, the implementation part of the PRQIF addresses the use stage to feed the citizen side of the management level of

the proposed multi-level technology acceptance model. The aim is to develop understanding about citizen use of delivered online social networking services. The intention is to identify the considerations that may influence citizens actively accessing the online social networking service and interacting and sharing information with other members of the virtual community.

2.8 Secondary research questions

Based on the PRQIF, and to facilitate creation of the research model, several secondary research questions were generated to provide extra depth and academic support regarding the adoption and use of Web, or other technology-based, applications intended to achieve meaningful government-citizen online dialogue.

The secondary research questions are categorised according to the National-, Organization-, and Management-levels of the framework, as indicated in **Table 2.6**. Although the influence of environmental aspects on adoption of e-Government initiatives in Western settings has been addressed within the literature, only limited research into Arabic contexts was noted (e.g., Aladwani, 2003; Al-Hujran *et al.*, 2011; Chatfield and Alhujran, 2009; Al-Khoury and Bal, 2004; Deakins *et al.*, 2002, 2007c; Hasan, 2003; UN, 2010; Ho, 2002; Noce and McKeown, 2008; Reddick, 2010). Thus, the first of the secondary research question (SQ1) sought to identify the external factors influencing the development of Omani e-Government initiatives. SQ1 was designed to feed into the 'Acceptance part' of the PRQIF at the National-level, to develop understanding of acceptance from the organization and the citizen sides.

Because the 'Adoption part' of the PRQIF aims to develop understanding about the adoption of online social networking services by Omani government organizations, in order to identify the adoption advantages, disadvantages, inhibitors, drivers and key success factors; the secondary research questions (SQ2-SQ5) cover issues related to the organization's culture, capability and strategy, and its relationship with stakeholders.

Table 2.6: Secondary research question summary

Secondary Question (SQ)	Framework Level		
	National	Organization	Management
SQ1: What are the external factors that inhibit/drive the development of e-Government in Oman?	X		
SQ2: What are the organizational factors that inhibit/drive the development of e-Government in Oman?		X	
SQ3: How do Omani government organizations use Web 2.0 applications?		X	
SQ4: What are the advantages and disadvantages for Omani government organizations of using social networking services?		X	
SQ5: What are the key characteristics of online dialogue that Omani government organizations aim for, and how are they achieved?			X
SQ6: What are the management factors that influence the implementation of online social networking applications in Omani government organizations?			X

The secondary research questions (SQ2-SQ5) were designed to feed into the ‘Adoption part’ of the PRQIF at the Organization level, to develop understanding of the organizational experience concerning adoption from the organization side (by definition) regarding the use of Web or other technology-based applications such as social media applications for achieving meaningful online dialogue.

The secondary research question SQ6 was intended to develop understanding of specific implementation (introduction, operation and use) benefits, inhibitors, drivers and critical success factors from the organization side, which feed into the Management-level of the research model (implementation and operation parts of PRQIF). It was also designed to feed into the Management-level regarding the use of online social networking services from the citizen side.

2.9 Chapter summary

This chapter has reported the literature on organizational adoption and citizen use of online social networking services by government agencies. Highlighted were key authors, research themes, and gaps from which several derived secondary research questions provide extra depth and academic support for the primary research question, and for research model creation.

Chapters 4, 5, and 6 include the additional literature that is pertinent to developing the initial models for the National-, Organization-, and Management level Frameworks, respectively.

Chapter 3: Research Methodology

3.1 Introduction

This chapter documents the systematic, methodological process designed to elicit contributions to the e-Government body of knowledge concerning the adoption and use of Web or other technology-based applications for achieving meaningful online dialogue with citizens. It begins by introducing the researcher and then goes on to explain how the research model was created and progressively refined. Candidate research methods and other issues requiring consideration when conducting an effective research project are highlighted, and the final selection of research methods is described and fully justified. Finally, the chapter explains the research design and the data collection procedures.

3.2 About the researcher

It is important to acknowledge the role of the researcher and the possibility of personal bias brought to the study. The researcher is an Omani national who has also lived in the Western cultural setting of New Zealand for about seven years. He previously worked in the public sector in Oman before embarking on postgraduate study to leverage his management skills when he completed a Master degree in Management Systems at Waikato Management School. During some eight years of work experience, the researcher was exposed to a broad range of decision-making in operational and middle management roles and experienced a range of government-citizen interactions. Evident differences in e-Government sophistication between Oman and New Zealand motivated the researcher to focus on e-Government as a research topic. During the course of this study, the researcher visited Oman 2-3 times per year for the purpose of data collection. Visits to different public works to meet with decision-makers and policymakers all facilitated the case study and action research activities. The actual research took place between April 2007 and October 2012 (inclusive).

3.3 Typical e-Government research methods

E-Government has been researched for at least the last decade and the supporting systems have inevitably attracted research interest. Indeed system implementation is predicted to be one of the more important organizational change challenges involving IT for the foreseeable future (Marche and McNiven, 2003; Heeks, 2006a; Reddick, 2011; Warkentin *et al.*, 2002). Part of this motivation arises from circulation of the e-Government concept among nations at both the national and local levels, where implementation process factors are reported to be related to political, cultural, social, and technical issues (Albusaidy and Weerakkody, 2008; Al-Hujran1 *et al.*, 2011; Chatfield and Alhujran, 2009; Deakins *et al.*, 2002, 2007c; Gilbert *et al.*, 2004; Reddick, 2010). Consequently, researchers are keen to identify the problem sources associated with information system implementation, and how best to address them (Lucas *et al.*, 2007).

Although E-government researchers have addressed implementation issues, there have been recent calls for further work in the area (e.g., Heeks and Bailur, 2007; Yildiz, 2007). This in part is because the majority of e-Government studies have been quantitative (e.g., Deakins and Dillon, 2002; Gilbert *et al.*, 2004; Moon, 2002; Reddick, 2005); and have favored secondary data to examine the output of E-Government processes. Only rarely has new theory been derived (Lips, 2008; Yildiz, 2007). Thus, e-Government scholars appear to be more interested in using a broader range of research methods to increase understanding about the enabling systems, including their implementation and use (e.g., Heeks and Bailur, 2007; Lips, 2008).

3.4 The research process

Figure 3.1 indicates the systematic and methodical process of enquiry used in the present research. This is based on the recommendations of well-known social science research designers, including Collis and Hussey (2003), Creswell (2003), Maxwell (2005), Merriam (2001), Yin (2003) and Stake (1995).

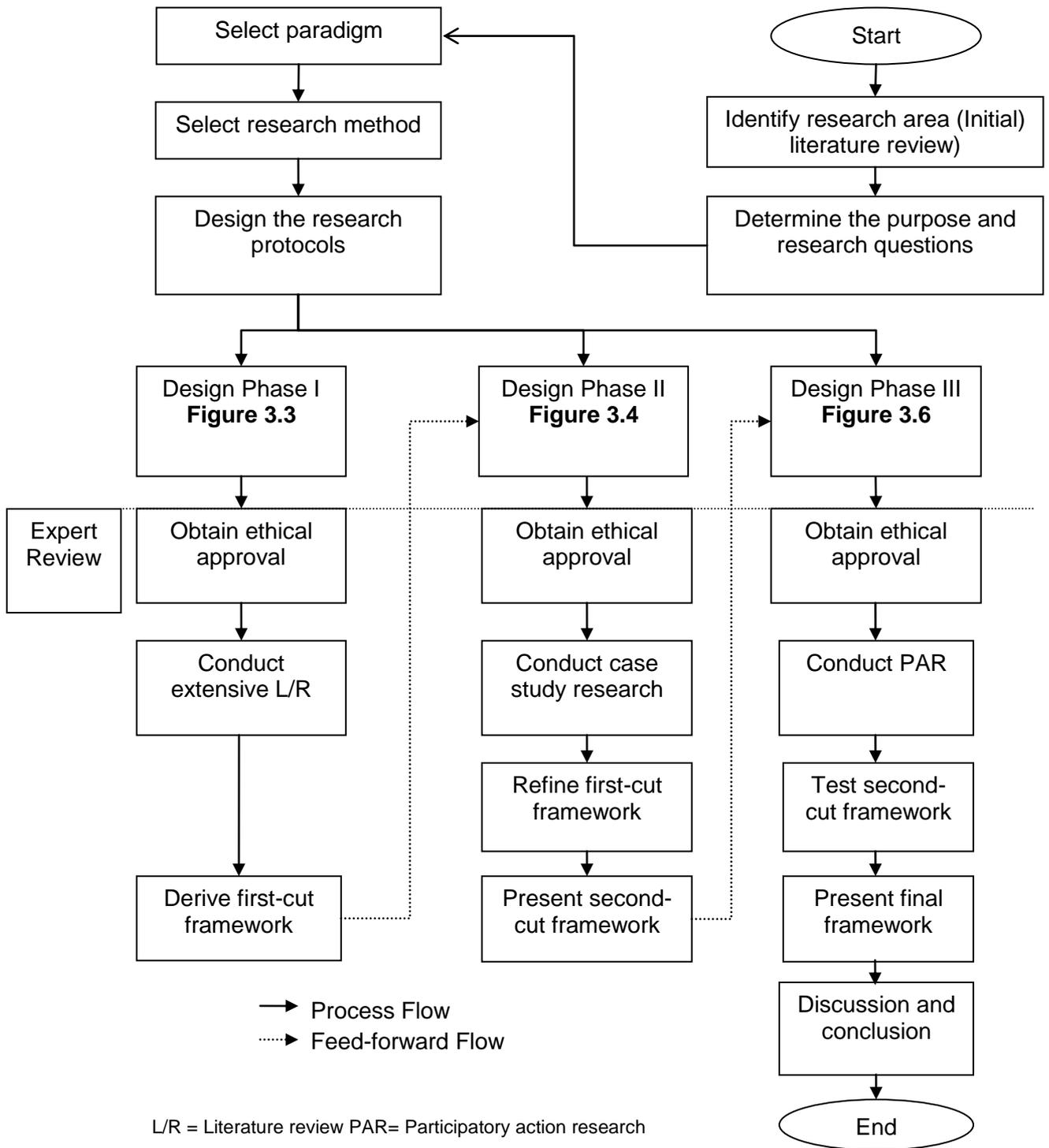


Figure 3.1: Research process for this study

The initial stage involved developing understanding about the conceptual issues underpinning the research, including identifying the research area; determining the research purpose and questions; selecting an appropriate research paradigm and methods; and designing the research protocols. These processes were actioned by reviewing the literature and discussing outcomes with relevant subject experts, before data collection and analysis, and presenting the research findings in a formal document. The two main research methods were case study and participatory action research. The following sections detail each phase of this research process.

3.5 Defining the research purpose

Setting the research purpose is one of the critical steps in research design because it directs the scope of the research and the generation of the research question(s) (Collis and Hussey, 2003; Creswell, 2007; Maxwell, 2005; Merriam, 2001; Yin, 2003). For example, Maxwell (2005) suggests that the final purpose of the research should incorporate motivations that encourage the researcher to carry out the study (personal purpose), as well as the research purpose which is concerned with gaining understanding, and the practical purpose concerned with the outcome of the study.

Personally speaking, the researcher has an interest in exploring the challenges and opportunities wrought by the adoption and use of ICT in developing nations. Previous work experience plus the identified gap in knowledge motivated the researcher to conduct doctoral research in the broad area of e-Government. The researcher has also previously worked in the government sector in Oman and completed a postgraduate degree in New Zealand. According to United Nations reports New Zealand is classified as one of the advanced nations in e-Government development, whereas Oman is still in the early stages (UN, 2005, 2008). Thus, the researcher's ambition is to contribute to knowledge in order to help reduce the knowledge gap regarding the use of e-Government in Arabic cultures;

specifically, by leveraging New Zealand and other Western nations' experiences to assist the transformation of Oman into a digital society.

The topic of e-Government is very broad, and during Phase I of this research, the literature was examined to define the research purpose and decide on the scope of researchable areas having potential to maximize contributions to knowledge. The extensive literature review also identified the limitations of research that has been conducted to-date.

Exploratory studies are recommended when either little is known about the addressed phenomenon or it has never been addressed with a certain sample or group (Creswell, 2003). Chapter 2 showed that transformation towards e-Government is a global phenomenon and researchers appear to be more interested in the new technology that is facilitating transformation. Specifically, researchers and practitioners seem to be very interested in the use of Web or other technology-based applications to support e-Government-citizen interactions with the potential to enhance democracy and improve the performance of government entities. However, few government agencies in developing nations have adopted Web or other technology-based applications such as social media applications for achieving meaningful online dialogue with citizens and little remains known about the implementation of such networks within a governmental context. Similarly, little is understood about the use of ICT in the public sector, and in particular, how it was introduced.

Thus, the broad research purpose was to 'explore' and be useful to researchers and practitioners. More specifically, it was shaped towards an exploration of e-Government policy/decision-maker attitudes and citizen attitudes toward the adoption and use of online social networking tools that potentially can enhance interactions and knowledge sharing, and thereby improve delivered services and quality of decision-making. Section 1.2 and Sections 2.7-.8 contain details of the research purpose and research questions, respectively.

3.6 Determining the research paradigm

This section describes the assumptions that underlie the research. It begins by highlighting key research paradigm issues and then presents justification of the interpretative paradigm that was finally selected.

3.6.1 Overview of research paradigms

‘Paradigm’ refers to a set of beliefs that guide the process of conducting research (Collis and Hussey, 2003; Creswell, 2003). This is a key issue needing to be addressed in the early stages of research design because it has an influence on the selection of research methodology, data collection and data analysis (Collis and Hussey, 2003). Research paradigms may be delineated by defining the ontological and epistemological assumptions that underlie the research. The ontological assumption considers the nature of reality and seeks to answer question about what is reality? Is reality objective and external to the researcher or subjective; socially constructed and only understood by examining the perception of the human actors? (Collis and Hussey, 2003; Walsham, 1993). An epistemological assumption, on the other hand, considers the study of knowledge and what is accepted as being valid knowledge. This involves examination of the relationship between the researcher and what is being researched. (Collis and Hussey, 2003; Walsham, 1993)

In social science, peoples' stance regarding the epistemological assumption can be divided into two main groups: *positivist* and *phenomenologist* (Collis and Hussey, 2003). A Positivist believes that only phenomena that are observable and measurable can be validly regarded as knowledge; whereas, a phenomenologist believes that the researcher can be involved in the constitution of knowledge (Collis and Hussey, 2003; Walsham, 1993). Drawing on a number of other authors, Creswell (2003) summarizes the difference between those two paradigms, **Table 3.1**. He uses the term quantitative to refer to the positivistic paradigm and qualitative to refer to the phenomenological paradigm.

Table 3.1: Comparison between positivist and interpretivist paradigms

Assumption	Question	Quantitative (Positivism)	Qualitative (Interpretivism)
Ontological	What is the nature of reality?	Reality is objective and singular, apart from the researcher	Reality is subjective and multiple, as seen by participants in study
Epistemological	What constitutes valid knowledge?	Researcher is independent from that being researched	Researcher interacts with that being researched
Axiological	What is the role of values?	Value free and unbiased	Value laden and biased
Rhetorical	What is the language of research?	Formal, based on set definitions, impersonal voice, use of accepted quantitative words	Personal voice, use of accepted qualitative words
Methodological	What is the process of research?	<p>Process is deductive</p> <p>Study of cause and effect with static design (categories are isolated before study)</p> <p>Research is context free</p> <p>Generalizations lead to prediction, explanation and understanding</p> <p>Results are accurate and reliable through validity and reliability</p>	<p>Process is inductive</p> <p>Study of mutual simultaneous shaping of factors with an emerging design (categories are identified during research process)</p> <p>Research is context bound</p> <p>Patterns and/or theories are developed for understanding</p> <p>Findings are accurate and reliable through verification</p>

Source: Adopted from Creswell (1994, 2003)

According to Creswell (1994), reality in the quantitative (positivistic) paradigm is objective, singular, and external to the researcher. In other words, the reality is out

there and the role of the researcher is to measure it. Thus, it is singular and value free. On the other hand, reality in the qualitative (phenomenological or interpretive) paradigm is subjective. It is constructed by the interaction between the researcher and participants. Thus, in the qualitative paradigm, there is multi-reality because each participant might have a different opinion about reality. In addition, the value of the research is obvious since he/she participated in the process of the construction of reality.

3.6.2 Justification for selecting an interpretative paradigm

In light of the above considerations, the interpretative paradigm was judged the appropriate framework to guide the research in this study, and for two main reasons. First, it was posited that there is a direct relation between a policymaker's intention to offer a new online service and citizens' acceptance of it. In other words, policymakers offer an online service in anticipation that citizens will use it; otherwise, there is no point offering the service. Hence, consideration of those aspects of the adoption and use of Web or other technology-based applications for achieving meaningful online dialogue with citizens must involve both 'sides': the policymaker (organization) side and the citizen side. In other words, government organizations and citizens inhabit an environment having multiple realities that form the whole (the policymaker's decision to offer a new service requires a judgment call that citizens will accept and use the new service). This assumption complements the multi-reality feature of the interpretative paradigm described in the last section.

Secondly, interpretive methods are accepted for the study of peoples' thoughts (Eisenhardt, 1989). In addition, Walsham (1993) suggests that an interpretive approach is useful when the researcher seeks to understand the influence of the context on the adoption of the information system and, conversely, the influence of the information system on the context. Being an exploratory study that seeks to understand aspects of adoption and use, interpretive methods were judged suitable to enable the researcher to capture views and experiences by directly interacting

with selected individuals and using the insights gained to develop the research model.

3.7 Research methods

This section describes and justifies the selection of case study and action research as appropriate methods for this study.

3.7.1 Overview

Researchers may use a variety of terms to refer to the interior processes of the research, including research method (Bryman and Bell, 2003; Myers, 1997), approach (Creswell, 2003), strategy (Yin, 2003), and methodology (Collis and Hussey, 2003). Thus, these terms are used interchangeably to describe the interior processes of the present research.

Social science research is conducted via three main approaches termed quantitative, qualitative, and mixed methods (Bryman and Bell, 2003; Collis and Hussey, 2003; Creswell, 2003; Myers, 1997). Quantitative research methods were originally developed in the natural sciences to study natural phenomena. They involve the use of quantitative (numerical) data to measure and predict (Myers, 1997). Survey and laboratory experiment are both examples of quantitative research methods. Qualitative research methods were developed in the social sciences to enable researchers to study social and cultural phenomena (Myers, 1997) and involve the use of qualitative data (words) to understand and explain social phenomena (Bryman and Bell, 2003; Creswell, 2003; Myers, 1997). Qualitative methods include case study, action research, and ethnography and the main sources of qualitative data are interviews, documents and participant observation. Such methods are unique in providing rich data. The main characteristics of qualitative research/data are:

- Qualitative research is conducted through intense contact within a field or real life setting

- The researcher's role is to gain an holistic or integrated overview of the study, including the perceptions of participants
- Themes that emerge from the data are often reviewed with informants for verification
- The main focus of research is to understand the ways in which people act and account for these actions
- Qualitative data are open to multiple interpretations (Miles and Huberman, 1994)

Mixed methods, or triangulating research methods, involve the combination of one or more research methods in one study (Collis and Hussey, 2003; Creswell, 2003; Myers, 1997). Triangulation is recommended as a tactic to overcome the potential bias that might arise from using any single method (Collis and Hussey, 2003; Jack and Raturi, 2006).

3.7.2 Justification for selecting qualitative research methods

The qualitative approach was judged appropriate for the study because it would be used to understand, rather than to explain and predict as per the quantitative approach (Creswell, 2003; Lee and Lings, 2008; Miles and Huberman, 1994). In addition, this study sought to develop and test new theory rather than test existing theory. A qualitative approach would provide rich descriptions and explanations that could lead into theory building (Collis and Hussey, 2003; Creswell, 2003; Lee and Lings, 2008). As theory builders recommend triangulation of research methods to minimize the weakness that arise from using only one method (e.g., Eisenhardt, 1989), a mixed method approach was also used to develop the final model framework.

3.8 Major Research Phases

Figure 3.2 shows the three major research phases used to develop the final model framework. The next sections present the details of each phase.

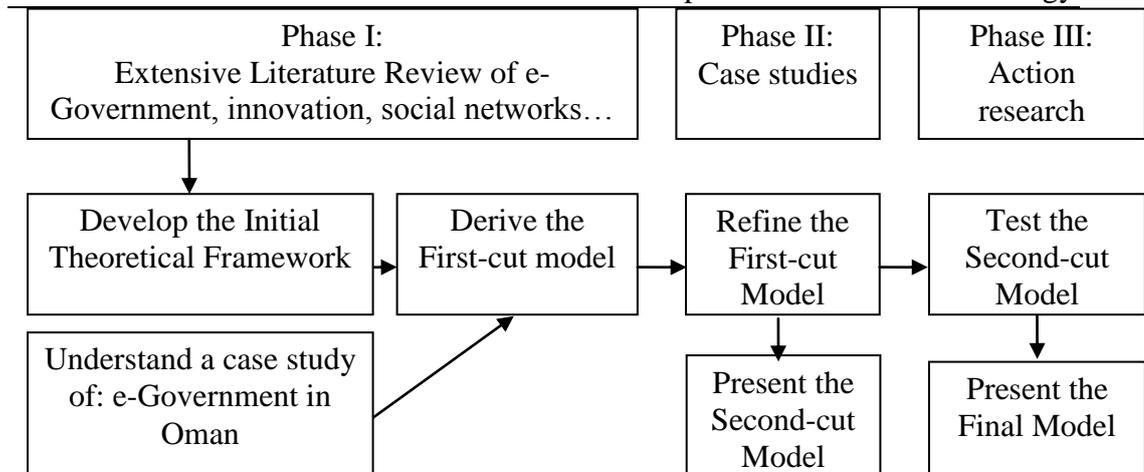


Figure 3.2: Framework development flowchart

3.9 Phase I (Literature review)

The aim of the first phase was set to develop a set of tentative (first-cut) theoretical frameworks, comprising National- level, Organization- level, and Management-level considerations. The plan was to make use of an initial theoretical framework, developed when preparing the research proposal. In short, the aim was to identify from the literature the key factors influencing the adoption and use of Web or other technology-based applications for achieving meaningful online dialogue between a government organization and its citizens. Furthermore, the plan was to begin preparing the ground for the collection of data in Phase II, which would be used to refine the initial model.

Being an exploratory study, the tentative research model was a synthesis of earlier work judged relevant to the adoption and use of information technology innovations in government organizations; the creation and operation of virtual communities; and, achieving online dialogue. The synthesizing action involved separate aspects of *Understanding*, *Identifying*, and *Deriving* as outlined in **Figure 3.3**. In essence, development proceeded as a sequence of forwards-backwards activities involving extensive literature reviews.

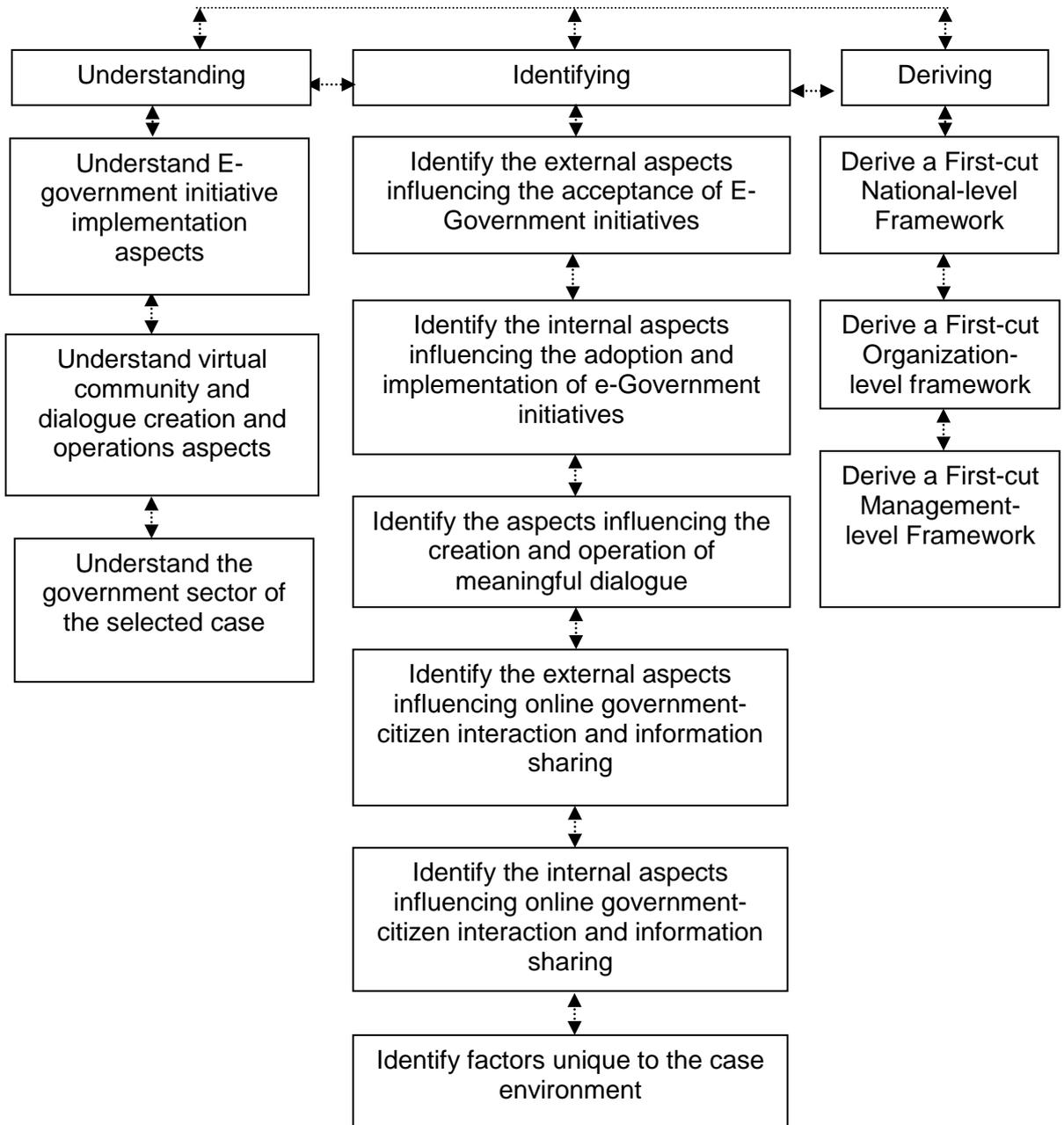


Figure 3.3: First-cut research framework development flowchart

3.9.1 Understanding the context and the phenomenon

Gaining an understanding of the adoption and use of Web or other technology-based applications for achieving meaningful online dialogue between a government organization and its citizens involved a review of government sector,

e-Government initiatives adoption and implementation processes, virtual communities and dialogue creation, and operating aspects. Also during this stage, citizens' expectations, and e-Government and technical trends of the Web were reviewed to develop an understanding of the potential key factors driving global e-Government initiatives.

The ICT innovation process was used to develop understanding of the key factors that influence the implementation and uptake of online services. Similarly, review of virtual community and dialogue creation and operation processes helped develop understanding of the key factors that influence government-citizen interactions and the sharing of information. The researcher's experience and knowledge of using social networking tools, and working in the government sector in Oman and living and studying in New Zealand, was also utilized. New Zealand experiences enabled the researcher to adopt a broader view of the government sector via consideration of different styles of government in the two nations.

The main source of data was the leading academic journals in such related fields as e-Government, public administration, and social networking. Textbooks, government publications, and government websites were also consulted. Such secondary data sources supported detailed discussions with policymakers in one government organization in Oman. The structure of the Omani government sector was documented to gain an understanding of the factors potentially unique to the case study.

3.9.2 Identifying the key aspects

The Primary Research Question Investigation Framework (PRQIF) described in earlier Section 2.7 was used to guide identification of key factors influencing the adoption and use of the Web or other technology-based applications for achieving meaningful online dialogue between a government organization and citizens.

After the literature was reviewed, the reported aspects expected to influence the adoption and use of Web or other technology-based applications for achieving meaningful online dialogue with citizens in the Omani government organizations were selected, and listed in tables. The most frequently cited aspects include:

- External aspects influencing the acceptance of e-Government initiatives include:
 - Drivers/inhibitors influencing the acceptance/adoption of e-Government initiatives from organization side
 - Drivers/inhibitors influencing the acceptance/use of e-Government services from citizen side
- Internal aspects influencing the adoption and implementation of e-Government project
- Aspects influencing creation and operation of virtual community
- Aspects influencing creation and operation of meaningful dialogue
- Aspects influencing government organization to interact and share of information with citizens
- Aspects influencing citizens to share information online with government organizations
- The key characteristics of the Omani government sector

3.9.3 Deriving the first-cut research model

At the end of Phase I, the tentative (first-cut model) was derived as follows. The data collected was aggregated and was determined to belong in one of three distinct levels: National-level, Organization-level, or Management-level. The National-level of the framework incorporates external aspects (drivers, inhibitors) that could influence the government organization and its citizens to *accept* Web or other technology-based applications that offer online social networking services designed to achieve meaningful dialogue. This includes the reported external factors influencing the adoption of e-Government initiatives and IT innovation, and citizens acceptance/adoption of the offered government online services (later **Table 4.1**). The Organization-level of the framework incorporates organizational

adoption aspects and issues relevant to organizational capability, structure and culture, plus strategic issues such as goals and vision that could influence the decision to *adopt* e-Government as an organizational initiative (later **Table 5.1**). Finally, the Management-level framework is concerned with the *implementation* (introduction, operation and use) aspects of social networking services for achieving online meaningful dialogue. Hence, it includes factors judged relevant to the implementation of e-Government projects, and creation/operation of virtual community and dialogue, sharing information and engaging citizens in decision-making and policymaking from both the organization and citizen sides (later **Table 6.1**).

From the beginning of 2008, no further literature was reviewed for the purpose of creating the first-cut research model. Chapters 4, 5, and 6 contain the derived (first-cut) frameworks for the National-level, Organization-level, and Management-level, respectively.

3.10 Phase II (Case Study)

The preliminary research model from Phase I was progressively refined over two further research phases. Thus, the aim of Phase II was to both refine the first-cut research model and begin preparing the ground for Phase III of the research. The model was refined in a sequence of forward-backward steps as outlined in **Figure 3.4**. Candidate research methods were selected and justified, before the detailed design of the selected method became fixed and ethical approvals were sought ahead of the data collection activity. Collected data was analyzed and interpreted, before the findings were used to refine the first-cut research model. Each of these stages is now presented in more detail.

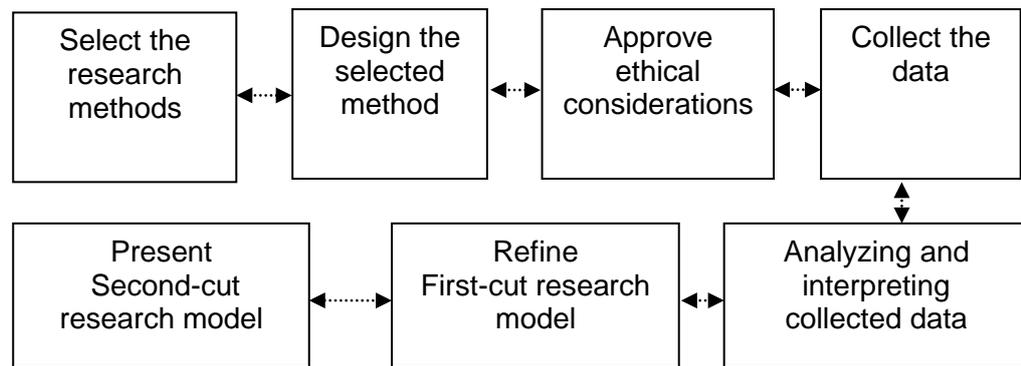


Figure 3.4: Second-cut research framework development flowchart

3.10.1 Overview of case study methods

Case study is one example of qualitative research (Collis and Hussey, 2003; Creswell, 2003; Lee and Lings, 2008; Stake, 1995) that has been widely used in information system research. The most commonly quoted authors are Eisenhardt (1989), Gill and Johnson (1997), and Yin (1981: 2003). Yin (2003) defined case study as, “An empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p.13). Some of the main reasons suggested for selecting a case study methodology over others include, to:

- study phenomena in natural settings, which enables investigators to learn about the state of the art and generate theories from practice
- answer 'how and 'why' questions, to understand the nature and complexity of the processes taking place
- research areas about which little is known (Benbasat *et al.*, 1987; Yin, 2003).

In addition, consideration of the unit of analysis is needed, which can be an individual, group, role, or organization (Collis and Hussey, 2003; Creswell, 2003; Yin, 2003). Final choice is guided by the research questions and occurs prior to the selection of the case study (Benbasat *et al.*, 1987; Yin, 2003). Selection of the case to study is also important, which can be single or multiple with regard to

country, organization, program; and community when it is used to study events, processes, and outcomes.

Case study can be holistic, i.e. has only a single unit of analysis, or embedded, i.e. has multiple units of analysis (Yin, 2003). Whether to select single or multiple cases depends on the objectives of the study, the research questions, and the availability of resources to conduct the study (Yin, 2003). A single case is appropriate when it represents the 'critical', 'unique' or 'typical', 'revelatory' and 'longitudinal' case (Yin, 2003). A *critical* case is selected for testing a well-formulated theory, whereas a unique case is appropriate when the case is rare and it is worth documenting and analyzing. The objective of the *typical* case is to capture the circumstances and conditions of an everyday or commonplace situation. It might represent a typical project or organization among many different projects or organizations. A *revelatory* case is selected when an investigator has an opportunity to observe and analyze phenomena previously inaccessible to scientific investigation. Finally, a *longitudinal* case is selected when it is necessary to focus on the same single case at two or more different points in time, where the aim is to identify any changes over a specific period.

In contrast to single case designs, multiple case designs are suitable for the purpose of literal or direct replications and each case has to have a specific purpose within the overall scope of inquiry (Yin, 2003). Although multiple case studies require more time and effort, the value gained is in more generalizable theory. In addition, evidence from multiple cases is considered to be more robust (Yin, 2003).

Data collection and analysis methods also need to be considered in the design of case study research. Yin (2003) suggested six data collection methods that can be used to provide empirical evidence: documents, interviews, archival records, participant observation, direct observation, and physical artifact. Multiple data collection methods minimize the weaknesses that might arise from one method

and offers opportunity for greater support for the conclusions (Benbasat *et al.*, 1987; Yin, 2003).

Another key consideration in designing case study research is quality assurance of the design. Being a form of qualitative research, Lincoln and Guba (1985) suggest using four tests to establish the quality of qualitative data; namely dependability, credibility, transferability and conformability. The meaning of these four tests and recommended tactics can be summarized as:

1. *Dependability*, which is concerned with the quality of the case design. Collis and Hussey (2003) state that the research processes should be systematic, rigorous, and well documented.
2. *Credibility*, which is primarily concerned with demonstrating that the research was conducted and data analyzed in a correct manner (Collis and Hussey, 2003). One example of the tactics for improving credibility includes the researchers immersing themselves in the research for a prolonged period of time (Collis and Hussey, 2003). This means persistently observing the case or cases to gain an in-depth understanding over a sufficient time period. Another example includes triangulation of data by way of using multiple data sources and collection methods (Collis and Hussey, 2003; Creswell, 2007; Stake, 1996).
3. *Transferability*, which is concerned with ensuring that the research findings can be applied to other situations that are deemed sufficiently similar (hence permitting generalizability). Transferability has a less significant role in research that employs a phenomenological approach when generalizability is not being sought (Collis and Hussey, 2003; Creswell, 2007; Stake, 1996). However, Yin (2003) suggests using logical building tactics to enhance the quality of developed theory.
4. *Conformability*, which is used to examine if the research process is fully described in order to make it possible to assess that the results stem from the data collected (Collis and Hussey, 2003). Another tactic of

demonstrating conformability is by providing a chain of evidence, linking results to the data collected (Yin, 2003).

3.10.2 Justification for selecting a case study method

As stated above, Phase II sought to incorporate the views and experiences of e-Government policymakers and the citizens whom they serve. The aim was to discover the critical success factors for organizational adoption and citizen use of Web or other technology-based applications such as social media applications for achieving meaningful online dialogue within the Omani government sector. Consequently, case study was judged an appropriate method to refine the initial research model, and for several reasons. Firstly, online social networking is an emerging phenomenon and many researchers argue that case studies are appropriate when little is known about a subject or phenomenon of interest, or where little reliance can be placed on the literature or previous empirical evidence, or both (see for example, Scholz and Tiejé, 2002; Yin 2003; Stake, 1995). Secondly, case study methods enable the researcher to study the phenomenon of interest within its real context, which enriches the empirical evidence gathered (Gill and Johnson, 1997; Merriam, 2001; Scholz and Tiejé, 2002; Yin, 2003). In this instance, conducting case study research would enable the researcher to identify the factors that influence the adoption and use of online social networks within the context of the Omani government sector. Thirdly, this study was exploratory in nature. The aim was to understand the real situation and challenges of adopting social networking services into public organizations and to incorporate the knowledge gained into the process of theory building.

It was judged that a case study would enable the researcher to reconstruct reality (Yin, 2003; Stake, 1995) through observing the interactions of participants from both the organization and citizen sides. Also, no obstacles existed that might inhibit the researcher from conducting case study research in Oman since the selected public sector organizations were willing to participate in the research.

Ethical aspects of conducting case study research were also considered and Waikato University ethical approvals obtained.

3.10.3 Designing the case study

Yin's (2003) suggestions for the design of the case study research were followed, including research question(s); propositions, if any; unit(s) of analysis; the logic linking the data to the propositions; and the criteria for interpreting the findings.

A single case study approach with embedded unit of analysis (multiple units of analysis (Yin, 2003)) was judged to be suitable for refining the three levels of the first-cut research model. Within this design, the term 'case' refers both to the single case and to the sub-cases, as Yin (2003) suggests. Because the model addresses aspects that influence the adoption and use of online social networking tools at the National-, Organization-, and Management levels in Oman, relevant sub-cases were selected to provide the required coverage, as indicated in **Figure 3.5**.

Omani central government ultimately delivers services to its citizens through a hierarchical arrangement that divides the country administratively into governorates. In turn, head offices within each governorate deliver local government services via separate organizational entities that each report to this head office. Thus, within the context of the Nation of Oman as the overarching case study, cases were selected from the Muscat Governorate. This was judged especially suitable for refining the National-level of the first-cut research model because it contains a municipality council and a well-developed ICT infrastructure, and it is the location for many technical specialists allied to government.

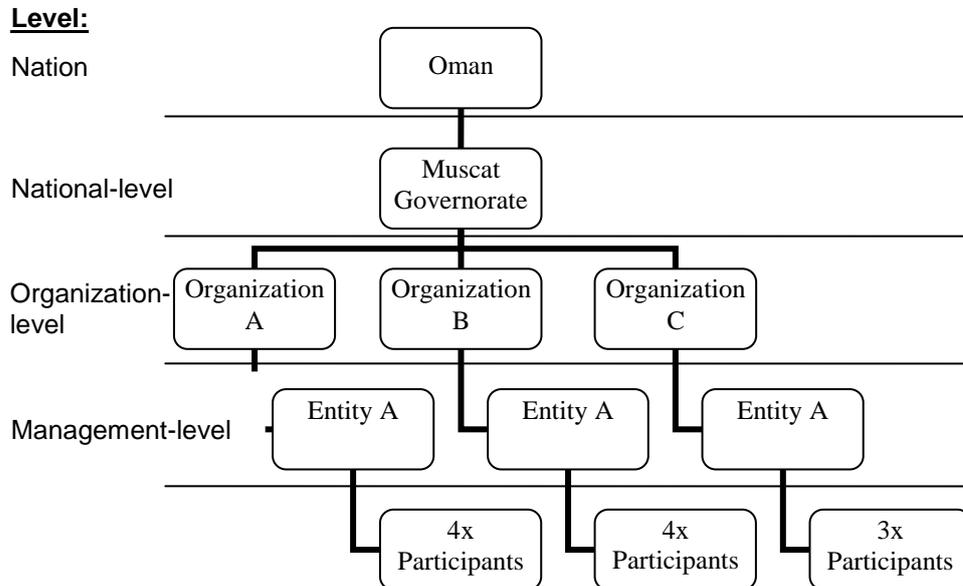


Figure 3.5: Case design

At the Organization level, three government organizations were selected from within the Muscat governorate, with the aim of identifying organizational aspects that influence the adoption and use of Web or other technology-based applications such as social media applications for achieving meaningful online dialogue with citizens by individual organizational entities. The final selection of organizations was based on considerations of data accessibility and existence of an online communication channel and of IT specialists.

Three organizational entities were also selected from among the individual civil service entities of the Muscat governorate, to address the Management aspects that influence the implementation and use of web-based social networking applications by government organizations and citizens. Individual participants were chosen based on the researcher's underlying aim of wishing to discover, understand, and gain insights (Merriam, 2001) via information-rich case studies (Patton, 1987). Thus, the selected individuals needed to be knowledgeable about the adoption of innovative Web or other technology-based applications such as social media applications for achieving meaningful online dialogue with citizens. Participants were primarily chosen from two main sources: consultation with IT

specialists working in government institutions, and government websites already having some online communication with citizens. A list of candidates from both the organization and citizen sides was prepared and their ages, nature of employment, qualifications, experiences, and genders considered as part of the final selection process.

Interview seed questions were created to address the research questions presented in Chapter 2. The aim was to capture experiences and viewpoints surrounding all of the stages of the adoption and use of online social networking tools, from both the organization and citizen sides. The e-Government Policymaker interview questions (**Appendix 1**) were grouped into five sections that covered:

1. Issues about the acceptance and adoption of online services
2. Issues about the implementation and use of social networking services
3. Issues about the management of social networks
4. Demographic information about the organization
5. Demographic information about the participant

Citizen interview questions (**Appendix 2**) were grouped into two sections covering:

1. Issues about the acceptance of social network services
2. Demographic information about the participant

3.10.4 Ethical considerations

Phase II was conducted under the auspices of Waikato University regulations and again ethical approvals were gained from the Waikato Management School Human Research Ethics Committee prior to collecting data from organizations and citizens. Participants were given an Information Sheet (**Appendix 3**) containing information about the study, the researcher, the participant's role, and information to be collected. Utmost confidentiality was assured and signed permission was sought concerning how the information they were giving could be

used for the purposes of the study. In short, participants had the right to refuse to allow the interview to be digitally recorded; to withdraw from the study at any time; and to ask questions about the study at any time. They were also told that only aggregated data would be reported in any publications arising from this study. They had the ability to add/amend/delete information after the interview was completed, and were invited to request a copy of the summary of findings by e-mailing their interest to the researcher.

3.10.5 Collecting the evidence

Preparation for conducting the case study included development of protocols, screening of case study candidates, and consideration of the skills of the investigator plus any associated training needs. A pilot was conducted to test and refine the interview questions before primary data was collected between November 2008 and January 2009 by various means, including: interviews, observation, and examination of documents. Before the interviews, the candidates were provided with an information sheet and a participation agreement was signed.

A total of eleven senior managers and platform operators (**Table 3.2**) were interviewed from the organization side and the sessions were recorded. Although it was planned that an interview would take around 45 minutes, the average time was closer to 90 minutes due to interruptions (A common occurrence in Arabic cultures). A case report was then prepared and an initial analysis helped prepare for subsequent interviews. For consistency, the same protocol was used for every interview and organization.

Table 3.2: List of organization side participants

#	Designated code	Organization	Gender	Position	Experience with Web 2.0 applications	Interview date
1	OM.A.Pr1	A	Female	IT manager	User and administrator	18/11/2008
2	OM.A.Pr2	A	Male	IT specialist	User	18/11/2008
3	OM.A.Pr3	A	Male	Platform operator	User and administrator	19/11/2008
4	OM.A.Pr4	A	Male	IT CEO	User and administrator	24/11/2008
5	OM.B.Pr5	B	Male	IT manager	User and administrator	2/12/2008
6	OM.B.Pr6	B	Male	IT specialist	User	6/12/2008
7	OM.B.Pr7	B	Male	CEO	User	6/12/2008
8	OM.B.Pr8	B	Female	Vice CEO	User	10/12/2008
9	OM.C.Pr9	C	Male	IT Manger	User and administrator	6/12/2008
10	OM.C.Pr10	C	Male	IT CEO	User	24/12/2008
11	OM.C.Pr11	C	Male	IT Manager	User	28/12/2008

After completing data collection for the organization side the researcher used the same protocols for the citizen side data collection. Fourteen citizens were interviewed and these sessions were also recorded, **Table 3.3**.

Another source of primary data was observation of three social networking tools (discussion forums) over some four months of operation, **Table 3.4**. Secondary data included government publications and website content relating to Oman's digital strategy and online services; mainly obtained from public organization websites.

Table 3.3: List of citizen side participants

#	Designated code	Gender	Qualification	Experience with Web 2.0 applications	Interview date
1	OM.Cz.Pr1	Male	Master	IT specialist, Social networking tool, administrator and user	23/12/2008
2	OM.Cz.Pr2	Male	Master	IT specialist, Social networking tool, administrator and user	24/12/2008
3	OM.Cz.Pr3	Male	Diploma	User	23/12/2009
4	OM.Cz.Pr4	Female	Bachelor	User	27/12/2008
5	OM.Cz.Pr5	Female	Bachelor	User	27/12/2009
6	OM.Cz.Pr6	Male	Master	User	28/12/2009
7	OM.Cz.Pr7	Female	Diploma	User	28/12/2009
8	OM.Cz.Pr8	Female	Bachelor	User	28/12/2008
9	OM.Cz.Pr9	Male	Master	User	7/1/2009
10	OM.Cz.Pr10	Male	Master	User	12/1/2009
11	OM.Cz.Pr11	Male	Master	User	13/1/2009
12	OM.Cz.Pr12	Male	Master	User	14/1/2009
13	OM.Cz.Pr13	Male	Master	User	15/1/2009
14	OM.Cz.Pr14	Male	Master	User	16/1/2009

Table 3.4: List of observed and used social networking tools

#	Given name	Link	Type	Observation period
1	OM.SNT1	www.s-omania.net	Public	November 2008 - February 2009
2	OM.SNT2	www.moe.gov.om	Government	
3	OM.SNT3	www.heac1.gov.om	Government	

3.10.6 Analysing the case study evidence

The collected case study data was analyzed in line with recommendations by Yin (2003), Miles and Huberman (1994), and Braun and Clarke (2006). Various tactics were used to aggregate and display data, and draw conclusions and verifications. The main thematic analysis procedure was as follows:

1. **Data reduction:** Initially, a detailed case study write-up for each sub-case was completed, and a database of all sub-cases was developed containing all of the interview transcripts, observation and documentation notes (referred to here as data corpus). Each transcript and accompanying notes was given a specific label or code, then was reviewed and translated from Arabic into English. Translations were made with the assistance of the commercial translation tool Translate.google.com (see **Table A4.1** in **Appendix 4** for an example). Transcripts were saved in separate MS Word files and all the transcripts for the same organization were saved into their own folder to facilitate later reviews.
2. **Familiarising with data:** In order to become familiar with the collected data, the researcher read and re-read the data corpus at which time some initial ideas were recorded in preparation for coding.
3. **Generating initial codes:** The initial codes were generated by coding any interesting features from across the entire collected data set that were judged to be relevant to the first-cut framework (refer to earlier Figure 2.5). Relevant data was then assigned to each code. During this stage, each identified feature (concept, sentence, phase, or paragraph) was given a code or label, and each code and its relevant extracted data was added to the organization code lists. The NVIVO software package (Version 7.0) was used in the coding process (**Table A4.2** and **Table A4.3** in **Appendix 4** show examples of such use).
4. **Generating potential themes:** The next step of the data analysis involved generating potential themes, by collating relevant initial codes into categories and subcategories (**Table A4.4** in **Appendix 4** shows one example).

5. **Reviewing the themes:** The researcher reviewed themes by examining the collated extracts for each theme, to judge whether they appear to form coherent patterns. In addition, this involved examining the entire data set. In other words, the examination covered within case comparisons (individual transcripts and notes and all transcripts and notes for each organization) and across case comparisons (between organizations). When designing the initial thematic maps themes were deleted when, for example, there was not enough data to support the theme or the data was too diverse. Other themes were decomposed into separate themes (subcategories or sub themes) since data within themes should cohere meaningfully and there should be clear and identifiable distinctions between them (**Tables A4.5-A4.7** and **Figure A4.1** in **Appendix 4** show examples).
6. **Defining and naming themes:** The generated themes were defined and named through iterative analysis to both refine the specifics of each theme and clarify the overall story that was being told.
7. **Producing the report:** Once clear definitions and names for each theme and sub-theme were generated, the final stage of thematic analysis production of the final analysis report. This involved selecting vivid, compelling extracts and examples, a final analysis of extracts, and relating the analysis back to the research questions and literature (**Table A4.7** in **Appendix 4** shows one example).

3.10.7 Assuring the quality of the case study findings

Several tactics used during this phase served to increase the quality of the case study research. These are summarized in **Table 3.5** and are based around the qualitative and case study design recommendations of such authors as Collis and Hussey (2003), Creswell (2003), Lincoln and Guba (1985), Stake (1996), and Yin (2003).

Table 3.5: Case study quality assurance tactics employed

Phase	Quality criterion	Tactic
Design	Dependability	<ul style="list-style-type: none"> ▪ Ensured research processes are systematic, rigorous and well documented
Data collection	Credibility	<ul style="list-style-type: none"> ▪ Collected data from multiple sources of evidence (Triangulating data collection) ▪ Prolonged engagement
	Dependability	<ul style="list-style-type: none"> ▪ Used case study protocol
	Conformability	<ul style="list-style-type: none"> ▪ Established chain of evidence and reviewed the draft of case report by key informants ▪ Developed case study database
Data analysis	Conformability	<ul style="list-style-type: none"> ▪ Documented the analysis process
Findings	Credibility	<ul style="list-style-type: none"> ▪ Used pattern matching and explanation building tactics ▪ Enabled peer debrief
	Transferability	<ul style="list-style-type: none"> ▪ Described research context ▪ Used replication logic

During the case study *Design* phase, the study dealt with dependability considerations by building systematic, rigorous and well documented research processes (Collis and Hussey, 2003). The case study design was based on the recommendations of Stake (1995) and Yin (2003), and the research supervisors critically reviewed the final design.

During the case study *Data collection* phase, the researcher used several tactics to enhance the credibility, dependability and conformability of the collected data using the recommendations of several authors (Collis and Hussey, 2003; Creswell, 2003; Lincoln and Guba, 1985; Stake, 1996; Yin, 2003). To enhance credibility, the data was collected from multiple sources: namely interviews, observations and documents. The data was also collected over several months to gain an in-depth understanding.

To address the issue of dependability while conducting interviews, a case study protocol was prepared and used to develop a chain of evidence (Yin, 2003). For example, a set of interview questions for policymakers and citizens was prepared and data collection and analysis tables developed. To enhance conformability,

research processes and procedures were documented and a case study database was developed (Yin, 2003). Digitally recorded case study notes from the interviews were directly transcribed and then stored as computer files and secure hard copy; all labeled with unique codes. A 'trace' was created to maintain a chain of evidence and a cross-reference between the methodological procedures and the resulting evidence (Yin, 2003); for example, interview dates and specific sources of evidence are included in the later Findings sections of this thesis.

During the case study *Data analysis* phase, the researcher used several tactics to enhance the conformability of the findings. For example, the data analysis process was documented for checking and rechecking of the data throughout the study (Collis and Hussey, 2003).

Finally, during the case study *Findings* phase the quality of findings was enhanced by considering credibility and transferability issues. Yin (2003) suggests using several tactics to deal with the overall problem of making inference, such as 'pattern-matching' and 'explanation building' that also can lead to cross-case analysis. For example, in this research, the themes generated during the analysis process were reviewed from within the findings of the individual organization and also across the organizations. Credibility of findings was enhanced by using peer debriefing tactics (Collis and Hussey, 2003) and the results were also reviewed by the research supervisors. Although generalizability is not the aim of this study, several tactics were used to enhance the transferability of the case study findings: Data was collected from three organizations (multiple sub-cases) and replication logic was used (Yin, 2003) whereby the interviews were organized for this purpose in the sequence: Organization A, Organization B, Organization C; followed then by citizens. During each interview, the previous interview findings were considered. **Appendix 4** contains an example of how the themes were generated and reviewed.

3.10.8 Phase summary

The aim of Phase II was to use case study methods to refine the tentative research framework that was derived from the extensive literature review during Phase I. The intention was to confirm/discover the key factors that influence the adoption and use of online social networking tools within the government sector in Oman.

The first-cut framework was refined into the second-cut framework in a series of steps, beginning with selection and design of the data collection method, through to collecting and analyzing supporting evidence. Yin's (2003) widely accepted protocols were closely adhered to, as were the recommendations of Miles and Huberman (1994), and Braun and Clarke (2006). The main sources of data were interviews, observations and documents. Interviews with participants from both the organization and citizen sides captured experiences and beliefs about successful adoption and use of online social networking tools in local government organizations. The collected data was analyzed with the aid of recommended tactics, including: pattern matching, cross-case synthesis, and thematic analysis.

Chapters 4, 5, and 6 contain the derived (second-cut) frameworks for the National-level, Organization-level, and Management-level, respectively.

3.11 Phase III (Action Research)

The aim of Phase III was to use participatory action research to further refine the second-cut research model into its final form. The model was refined in a sequence of forwards-backwards stages, as indicated in **Figure 3.6**. Similar to Phase II activities, candidate research methods were selected and justified before the method design was fixed and ethical approvals sought ahead of data collection. Collected data was analyzed and interpreted, before the findings were used to refine the second-cut research model into its final form.

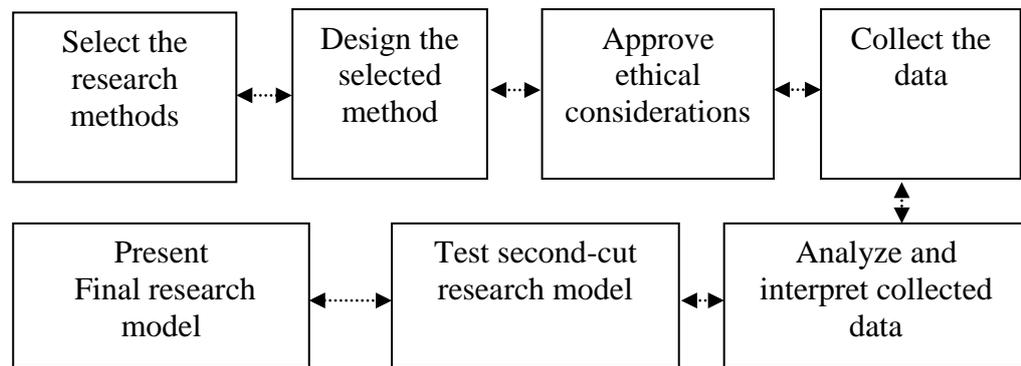


Figure 3.6: Final research framework test flowchart

3.11.1 Overview of action research methods

Action research is a qualitative research method (Collis and Hussey, 2003; Creswell, 2003; Myers, 1997). It aims to bring about change in some community or organization and to increase understanding on the part of the researcher, a client, or both in order to solve current practical problems and at the same time increase scientific knowledge (Baskerville and Myers, 2004; Collis and Hussey, 2003; Dick, 1997; Rapoport, 1970; Susman and Evered, 1978). Baskerville (1999) summarized the main characteristics of action research as follows:

- It aims to increase understanding of an immediate social situation, assist in practical problem solving, and expand scientific knowledge
- It is performed collaboratively and enhances the competencies of the respective actors
- It is primarily applicable for the understanding of change processes in social systems.

Although used in many disciplines and in education studies especially, action research is also employed in information systems research (Baskerville and Myers, 2004). For example, Baskerville and Wood-Harper (1996) used action research to study the effects of specific alterations in systems development methodologies on human organization. Susman and Evered (1978) view action research as a five-phase Action/Reflection cycle, which is presented in the context of this research in **Figure 3.7**.

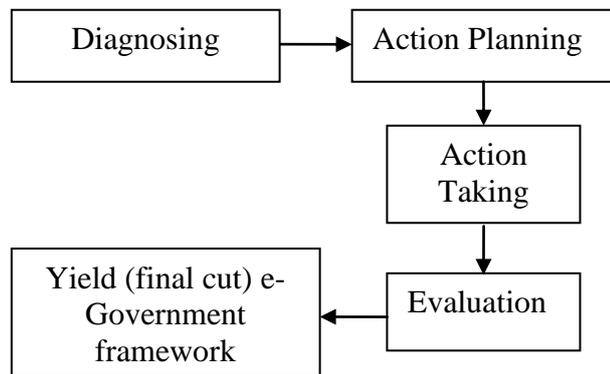


Figure 3.7: The action/reflection cycle

Source: adapted from Susman and Evered (1978)

The first phase in the cycle is the *Diagnosing* phase, which relates to the process of identifying the primary problem situation the client is interesting in changing. The second phase, *Action Planning*, refers to a collaboration process between researcher and client to plan the action needed to overcome the identified problem situation. *Action Taking* is the third stage and refers to the process of implementing the planned action. *Evaluation* is the fourth stage and it considers whether the action plan has had any effect on the problem situation. The last phase, *Reflection*, refers to the process of reflecting on the knowledge gained in the action research, and considering whether the action was successful.

There are different ways to classify action research. For example, Chien *et al.* (1948) classified it into the four types indicated in **Table 3.6**: *Diagnostic*, *Empirical*, *Participant*, and *Experimental*, according to the relative contributions of the researcher and practitioner in the action research process. In *Diagnostic* action research, the researcher is only involved in the process of formulating the research problem and the practitioner continues the action process. At the other extreme, *Experimental* action research involves practitioner and researcher collaborating throughout the whole action research process.

Table 3.6: Types of action research based on researcher contribution

Type	Action Research Phase				
	Diagnosing	Action planning	Action taking	Evaluating	Specifying learning
Diagnostic	x	-	-	-	-
Empirical	-	X	-	-	-
Participant	x	X	-	-	-
Experimental	x	X	x	x	X

Source adopted from Chien *et al.* (1948)

Action research designers recommend that several issues should be considered when using the method. For example, Stringer (2007) suggests that action researchers need to identify key people, establish contact, build strong relationships with the client, establish roles, and identify needed resources. They should also address ethical considerations and engage in systematic and rigorous processes that emphasize trustworthiness.

Regarding ethical considerations, (Stringer, 2007, p. 55) suggests that informed consent should involve provision of information about the study, including the purpose of the research and its objectives and processes. Similarly, the following statements should also be included with the informed consent procedures, that:

- People have the right to refuse to participate
- People may withdraw from the study at any time
- Data related to their participation will be returned to them
- Any information will be stored safely so that it cannot be viewed by others
- None of the information that identifies them will be made public or revealed to others without explicit and written consent.

In considering trustworthiness, Lincoln and Guba (1985) focus on the relationship between the researcher and the client and state that trust can be established by using procedures that assure *Credibility*, *Transferability*, *Dependability*, and

Ability. Here, *Credibility* refers to the plausibility and integrity of the study, and Stringer (2007) suggests several points to enhance credibility in action research:

- Engagement with the client should take sufficient time to provide all participants with extended opportunities to explore and express their experience of the acts, activities, events, and issues related to the problem investigated
- Research notes need to be based on direct observation, not from memory, and must use multiple data resources
- Different types of people are to be incorporated into the study and participants are to be given opportunities to review the raw data, analyses, and reports derived from the research procedure; which enables them to verify, clarify, or extend information related to their experience and perspective
- Concepts and ideas within the study should clearly be drawn from and reflect the experiences and perspectives of participants, rather than be interpreted from a theoretical or professional body of knowledge.

Transferability refers to the possibility of applying the outcomes of the study to other contexts and Stringer (2007) states that providing detailed descriptions of the context, activities, and events with the outcomes of the study all enhance transferability; since it gives readers an opportunity to judge the degree of usefulness of the outcomes and helps establish trust. *Dependability* refers to the extent to which the research procedures are clearly defined and open to inspection (Stringer, 2007). It focuses on the extent to which people can trust that all measures required of a systematic research process were followed. Stringer suggests that a detailed description of the processes will enable readers to judge the extent they are dependable. Finally, according to Stringer (2007), trustworthiness in action research increases when the researcher has the *Ability* to confirm that the procedures described actually took place, by providing evidence. He suggests establishing audit trails that enable observers to view the data

collected, instruments used, field notes, tapes, journals, and any other artifacts related to the study that help show the research is trustworthy.

3.11.2 Justification for selecting a participatory action research method

The aim of Phase III was to test and refine the (second-cut) research model in light of the researcher's experience helping local government organizations implement authentic Web 2.0 applications. Participatory action research was judged the appropriate method for several reasons. First, there was an opportunity to work closely alongside public sector organizations in Oman as they implemented Web 2.0 applications designed to involve citizens with online dialogue. Secondly, action research has the potential to increase the amount of learning (Baskerville and Myers, 2004; Dick, 1997). Thus, working with public sector organizations would enable the researcher to develop understanding about the working environment and identify the critical success factors involved in changing from offline interactions to online interactions, and to apply the insights gained to test the completeness of the research model. Thirdly, action research would enhance the researcher's experience with the implementation process since action research is collaborative research (Lincoln and Guba, 1985).

3.11.3 Designing the participatory action research

The design of Phase III began by identifying a research partner. Government agencies were sought that either were intending to adopt online social networking tools soon, or were already in the process of implementing such tools. Hence, the researcher organized meetings with different departments in local government organizations, both to identify managers interested in trialing online interactions with citizens and to gain their support for the project. Initially, two organizations agreed to participate. However, only the Muscat Municipality (MM) was able to complete the implementation process within the time available for the research. MM is a local authority within the Muscat Governorate of Oman that was selected for the study because of the congruence of the research goal with MM's intention to develop a new web portal that would contain online social networking (OSN)

services. It was judged that working closely with MM would allow the researcher to become deeply involved with the implementation and ongoing administration of the OSN tool, and thereby increase understanding of the phenomenon. Direct engagement with practitioners would also assist in testing the completeness of the second-cut research model. In short, the opportunity to involve practitioners in the development of theory, and to involve the researcher in the organization of MM, made participatory action research the appropriate research methodology (Eden and Huxham, 1996; Olesen and Myers, 1999).

The collaboration with MM involved engagement with all five phases of Susman and Evered's (1978) five-stage action research process; a research process that has been used successfully for IS research in the past (e.g., Baskerville, 1999; Street and Meister, 2004). After the opportunity to collaborate was identified, permissions were sought from senior management before formal cooperation could begin. Initial preparation covered the various aspects of preparing for the role, developing the evaluation tools and obtaining final agreement to participate in the study.

3.11.4 Ethical considerations

Similar to Phase II of the study, ethical approvals for Phase III were gained from the Waikato Management School Human Research Ethics Committee ahead of conducting the action research. Details of the research ethics processes that were followed are given in earlier Section 3.6.4.

3.11.5 Conducting action research

The action research implementation process began with several visits to MM to increase researcher understanding of the working environment, **Table 3.7**.

Table 3.7: Action research process

Process	Action taken	Start Date
Diagnosis	Understanding the working environment Identifying the need	January 2010
Action planning	Planning for the implementation of the social networking tools	May 2010
Action taken	Customizing the tools Installation and publishing the tools Creating the discussion Marketing	June 2010
Evaluation	Evaluating the implementation process Evaluating the use of the tool	Jan 2011
Specific learning	Refine the research model	March 2011

The researcher organized a meeting with senior officers and staff to gain the needed context and background information regarding the organization's plans, decision-making and feedback processes, and daily maintenance tasks. Organization status and needs were also identified, with the objective of understanding the challenges facing departments and whether a social networking application could be used to overcome them.

The researcher then held several meetings with work teams to outline the capability of Web-based applications, investigate additional Web-based opportunities, and discuss realistic expectations. Eventually it was agreed that adding a social networking service to the web portal and inviting a targeted group to participate with posted topics, would best help the organization achieve its goals. It was also agreed that the researcher would participate in the implementation process by providing advice when requested. An implementation plan was then formulated.

It was agreed that the main objective of the online social networking services was to enhance communication with citizens by providing extra communication channels that could:

- Enable people to discuss concerns about their municipality with their peers and the MM
- Attract people to use the MM website to discuss their concerns, instead of using other public social networking sites
- Increase understanding of citizens' needs and expectations
- Increase citizens' understanding about the capabilities of the MM
- Inform citizen of the main MM activities
- Enhance innovation by enabling citizens to post their suggestions and comments to improve municipality services.

Work on the social networking platform began in June 2010, which included customization of the (discussion) Forum and the Blog components of the MM web portal. Once the organization's requirements were defined, development of the social networking tool itself was outsourced to a third party as part of the development of the website project. In essence, the aim was to customize the existing content management system to fit the new requirements. The Forum component was customized to enable users to discuss concerns about their municipality with their peers and the MM. A tree-like directory structure was divided into five sub-forums for the relevant departments. Control, motivation, search and syndication feed features enable users from the organization and citizen sides to post discussion topics and place comments on the posted topics.

The Blog component was customized to collect feedback from citizens about specific topics. The main webpage listed the posted topics as well as the sub-webpage designed to present the comments. In addition to syndication feeds and a printing option, a control feature enables the management team to review comments before they are made public.

Once the Blog and discussion Forum social networking tools were ready to go live a tool activation process took place, which included sending invitations to the target group via email and SMS, and promoting the new online services on the most popular public online discussion forums in Oman. The researcher made several visits to MM to meet with the project team to learn about the latest implementation issues and the intended uses for the Forums and Blogs. When offering advice the researcher was careful to adhere to the implementation framework developed during the earlier research phases. **Appendix 5** contains the action research protocols and the implementation process is detailed in **Appendix 8**.

The derived second-cut model from Phase II enabled the researcher to keep on track by offering specific implementation aspects for consideration during the participatory action research. Data was collected from multiple, rich data sources during the implementation process along lines suggested by Baskerville and Pries-Heje (1999). This included interviews, e-mails between the researcher and project team members, official documents, website data, and working notes from project meetings. In addition to the formal organizational thoughts and intentions contained in such formal documents as the request for quotation (RFQ), the dataset also captured informal opinion via interview and email transcripts. Collected data was analyzed using a set of tactics that included coding, categorizing, and identifying themes. In essence, project data was continually collected, analyzed, and reflected upon in line with Susman and Evered's (1978) five-stage action research process, and revised as the various MM projects were rolled out.

3.11.6 The action research experience

Collaboration with the case organizations provided the researcher with a very good opportunity to track the challenges/inhibitors/drivers of the OSN pre-implementation and implementation steps. The main challenges that faced the researcher while working with the highly bureaucratic organizations were:

- Individual blocks. Some managers that had initially agreed to participate subsequently backed out when official permission was sought; citing either workload or a 'personal reason'. The researcher used different techniques to overcome such challenges and a variety of communication channels including phone calls, e-mails, and personal visits to the organization.
- Bureaucracy. The process of obtaining official permissions involved several levels of management. The researcher tried to overcome this challenge by closely following the task and being sensitive to internal cultural norms.
- Resistance to change. Given the very limited amount of online interactions that had taken place between public organizations, stakeholder fear of the unknown was a major issue. The researcher attempted to counter this by clearly explaining any implications and highlighting the new opportunities that would arise from offering online discussion forums.

Several critical factors facilitated successful completion of the project, including:

- Identifying key people in the organization and communicating with them from the earliest stages of the research process, facilitated organizational engagement with the research
- Having the support of top management also facilitated the project, as the IT manager was able to use his position to communicate with other departments and thereby facilitated the research process
- Congruence of the research goals with the goals of the Muscat Municipality (MM) caused the IT manager to be willing to support the research by personally driving the OSN project initiative.

3.11.7 Analysing the evidence

The collected data was analyzed using the recommendations by Yin (2003), Miles and Huberman (1994), and Braun and Clarke (2006). It is important to note that the analysis procedures used by the researcher were identical to those used for the Phase II case studies. These were described earlier in Section 3.6.6.

3.11.8 Validating the quality of the action research

Several tactics used during this phase served to increase the quality of the action research. These are summarized in **Table 3.8**, and are based on the case study and action research recommendations such as by Yin (2003) and Stringer (2007).

Table 3.8: Tactics used to enhance the quality of the action research

Phase	Quality criterion	Tactic
Design	Trustworthiness	Promoted formal approval to participate in the study Established contact Built strong relationships Obtained ethical approval before data collection
	Reliability	Planned to collect data from different sources Developed case protocol structure
Data collection	Reliability	Developed case database Used case study protocol
	Credibility	Prolonged engagement Persistent observation Collected data from multiple sources Enabled member checking Established intensive long term involvement
	Conformability	Enabled user to review raw data
Findings	Credibility	Diverse case analysis
	Transferability	Incorporated a detailed description of the context activities and events
	Dependability	Presented a detailed description of the processes

In the action research *Design* phase, the study dealt with the validity, reliability and trustworthiness considerations by adopting tactics suggested by Stringer (2007). The researcher sought to build trust by obtaining formal approvals to participate in the study from key people and organizing several meetings with IT managers. The researcher exchanged email addresses and phone numbers with key people to both establish contact and build strong relationships with them. The researcher also addressed reliability considerations in the Design phase by planning to collect data from different sources and developing a case protocol that included preparation for planning, conducting the action plan, and evaluating the outcomes. For example, the working roles for the researcher and organization and the evaluation assessments were developed before data collection.

In the action research *Data collection* phase, the researcher used several tactics to enhance the reliability and credibility of the collected data using Stringer's (2007) recommendations. The main objective of the site visits was to attend group meetings and discuss with team members their specific concerns regarding the implementation process, and in addition to observe the system development process and team interactions. For these visits, the researcher adopted the prolonged engagement, persistent observation, member checking, and conformability and triangulation tactics described earlier. To gain a good understanding about the implementation process the researcher registered with the different online platforms, read formal documents, and otherwise directly followed the implementation progress. Meetings were digitally recorded and participants were able to review the records.

Finally, in the action research *Findings* phase the quality of findings was enhanced by considering credibility, transferability and dependability issues as suggested by Stringer (2007). The concepts and ideas were drawn from, and reflect, the actual experiences and perspectives of participants.

3.11.9 Phase summary

The aim of Phase III was to use participatory action research methods to refine the second-cut research model obtained using case study methods in Phase II. The intention was to confirm/discover the key factors that influence the adoption and use of online social networking tools within the government sector in Oman.

The second-cut framework was refined into the final framework in a series of steps, beginning with selection and design of the data collection method, through to collecting and analyzing supporting evidence. Susman and Evered's (1978) five-phase action-reflection cycle was adopted for tracking the implementation of online social networking tools with one Omani government organization.

The main sources of data were interviews, observations, and documents and the collected data was analysed using recommended tactics that included coding and

searching for patterns and themes using thematic analysis methods. Chapters 4, 5, and 6 contain the derived (final) frameworks for the National-level, Organization-level, and Management-level, respectively.

3.12 Chapter summary

This chapter has presented and justified the selected methodologies that were used to develop a rigorous theoretical framework of successful adoption and use of online social networking tools within the government sector in Oman. After introducing the researcher, it described alternative research paradigms and underlying assumptions before then detailing the design of each of the three phases of this research.

In the first phase, an extensive review of the literature indicated the main factors for consideration. These were aggregated into the first-cut *National-, Organization- and Management-* levels framework. The derived model was then refined using multiple case studies to yield the second-cut framework. Finally, this second-cut framework was tested for veracity and completeness via participatory action research in which the researcher worked closely alongside a public sector organization as it sought to implement Web 2.0 applications designed to engage citizens in online dialogue.

Data was collected between 2008 and 2010 from Omani government organizations and citizens. The study followed the Waikato Management School procedures for ethical approval of research, which were obtained prior to the commencement of each of the data collection phases. The overall process was designed to output a rigorous and unbiased model that is appropriate for government agencies in Oman, and in countries with a similar culture and operating environment to Oman, as they undertake the task of incorporating social networking services into their online offerings.

The model contains three distinct frameworks that pertain to different levels of governance. The National-level Framework focuses on the acceptance of online social networks by civil service organizations in general. The Organization-level Framework spotlights the adoption of social networking services by individual civil service entities. Finally, the Management-level Framework focuses on the implementation (and use) of Web-based social networking applications.

The findings that appear in Chapters 4-6 tie together development of the National-, Organization-, and Management-level Frameworks, respectively.

Chapter 4: Developing the National-level Framework

4.1 Introduction

This chapter is the first one of three that presents the research findings for this study. The output from this chapter is the National-level Framework (NLF) containing the critical factors judged necessary at national level for the successful adoption and use of Web or other technology-based applications in Omani government organizations. It is judged that these factors require consideration if Web or other technology-based applications are to be successfully implemented that support effective government-citizen interactions.

The chapter is arranged as follows: First, the framework development process is reviewed. This is followed by description of the first-cut NLF derived from the literature, which is subsequently refined with the aid of case studies, and then further substantiated with insights gained from participatory action research. Finally, the National-level secondary research questions are addressed.

4.2 National-level Framework development process

It was intended that a National-level Framework would document the highest level critical factors required to ensure the introduction and acceptance of governmental online social networking services. The framework was developed over three distinct research phases, as fully described in Chapter 3. The key steps for developing the final National-level Framework are reproduced in **Figure 4.1** and comprise: (1) development of a theoretical model; (2) case study understanding; (3) derivation of the first-cut model; (4/5) refinement into a second-cut model; (6) testing for variation and completeness of the second-cut model; and, (7) final model presentation.

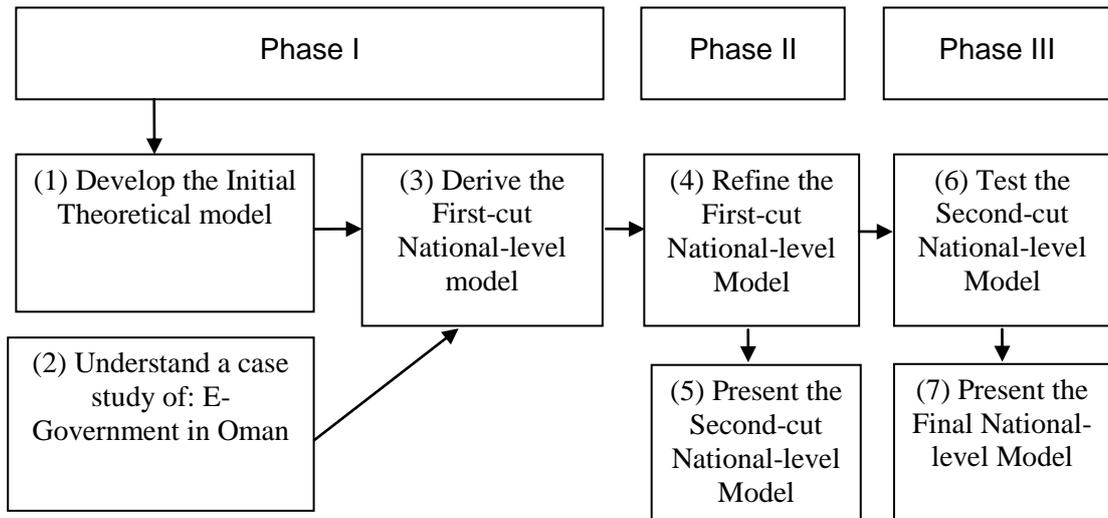


Figure 4.1: Flowchart for the development of the National-level Framework

4.3 National-level Framework considerations from the literature

For the purpose of initial (first-cut) model development, this section focuses on the (National-level) considerations identified from the literature to be relevant to government organization acceptance of Web or other technology-based applications. Both the organization side and citizen side perspectives are represented.

According to Rogers (1995), the first stage of the organizational innovation adoption process includes gathering information about the innovation and evaluating the adoption value. Because of the influence of the external environment on organizational behavior (e.g., Bryson, 1996), evaluation needs to consider the organization and its working environment. For instance, globalization has not only brought new economic opportunity to nations, but also new political, social, technological, and institutional complexities (Witschge, 2004). Few researchers have examined the phenomenon of implementing online social networking in this light.

Using Web or other technology-based applications to achieve meaningful government-citizen dialogue can be considered to be an innovation, hence

external factors influencing the adoption of e-Government initiatives may be aggregated into the four main groups shown in **Table 4.1**.

Table 4.1: Adoption and use of e-Government social networks: National-level issues

Author	Year	Concept							
		Infrastructure		Digital divide		National culture		Political issues	
Perspective:		C	O	C	O	C	O	C	O
Aladwani	2003	A		A					
Albusaidy and Weerakkody	2008					A			
Al-Khourri and Bal	2004	A							
Chiu <i>et al.</i>	2006					N			
Deakins <i>et al.</i>	2002				W				
Deakins <i>et al.</i>	2007c				W A				
Ebrahim and Irani	2005		N						
Hasan	2003	N							
Ho	2002		W		W				
Hofstede	1987					N			
Hofstede	2003					N			
Newman <i>et al.</i>	2001								W
Noce and McKeown	2008			W					
Norris <i>et al.</i>	2001								W
Noveck	2004					W			
Schein	1985						N		
Scott	2006								W
Srite and Karahanna	2006					W			
Witschge	2004					W			
Yasin and Yavas	2007		A	A		A			

C: Citizen side; O: Organization side; A: Arabic nations; W: Western nations; N = Not specified

It is clear that Infrastructure issues have the potential to frustrate the organization's efforts for Web or other technology-based applications that offer the ability to achieve meaningful government-citizen dialogue. For example, online social networking services need broadband access to be used effectively; and a podcasting service such as *YouTube* needs very high speed access or else high traffic volumes can severely degrade download speeds. Thus, infrastructure issues that influence the ability to provide online social networks are expected to be relevant in geographic locations with limited broadband services. Researchers have shown that infrastructure issues are one of the most common technical inhibitors for developing nations transforming into the e-Government paradigm

(Al-Khoury and Bal, 2004; Hasan, 2003). In Arabic nations high Internet access costs and low Internet access speeds have long been the main technical obstacles to accessing online services (Aladwani, 2003); thus, Ebrahim and Irani (2005) suggest implementation of easy and reliable IT infrastructure as a precursor to successful transformation into e-Government.

Literature describing the digital divide in e-Government has attributed the lack of access to online government information and services to factors such as income, education, race, and gender (Noce and McKeown, 2008). Digital divide effects have also long been reported as being among the major barriers to the adoption and use of e-Government services (e.g., Aladwani, 2003; Deakins *et al.*, 2002, 2007c; Ho, 2002; Noce and McKeown, 2008). For example, a comparison study of local government in China, New Zealand, and Oman found that the digital divide is one of the key critical issues to the success of e-Government initiatives (Deakins *et al.*, 2007c). For these reasons, *Digital divide* barriers are expected to influence the uptake of online social networking services. Similar to other types of online services, digital divide issues might also influence citizens' ability to take advantage of e-Government services through poor IT skills, lack of Internet access or not having a suitable access device-especially when considering low-income citizens.

In order to bridge the digital divide, governments over the years have implemented many actions. For example, in 2000 the NZ government stated its intention to provide low-cost public access to computers and the Internet at the community level, in places such as libraries and Māori meeting places (Foreman *et al.*, 2000, NZ E-Commerce Strategy, 2000). Similarly, in Oman the government's intention to propel the country towards becoming a digital society was aided by grants to low income families to enable them to access the Internet. With cooperation from the private sector, the grant includes a free laptop and free Internet access for one year to each beneficiary family. The cost of a personal computer for higher education students is also subsidized (ITA, 2009). In

addition, a 'National IT Training and Awareness' initiative is offering education and advice to citizens and employees in different wilayat cities, to help them leverage the skills needed to use computers and access the Internet. E-government services are also being promoted to all segments of Omani society (ITA, 2009).

National culture is reported to be a key barrier to the adoption of new technology and innovations when long-established social and cultural norms are impacted (Albusaidy and Weerakkody, 2008; Yasin and Yavas, 2007). Schein (1985) argues that organizational culture is influenced by the national culture (Hofstede, 1987, 2003), hence in Arabic countries, which favour face-to-face interactions for conducting business (Yasin and Yavas, 2007), reluctance to using online social networking services might be expected. Interactions between genders is also considered unacceptable in some countries (Hofstede, 1987, 2003), possibly encouraging users not to reveal their true identity online. In multicultural societies, usage of a specific language may also inhibit others from accessing a website, either because of the language barrier or because of personal feelings about the language in use.

Online social networking involves both technical capability (e.g., availability of broadband) and non-technical capability (e.g., information sharing regulations such as privacy). Thus, acceptance by government organizations to offer online social networking services for achieving meaningful online dialogue with citizens can be influenced by *Political issues* of central government; as happened for example in the UK when central government policy favored rollout of the broadband infrastructure needed for e-Government (Newman *et al.*, 2001). However, also worth noting is that political systems in many Arabic nations differ from Western nations.

Finally, decision-makers may have concerns about utilizing online social network services that freely share government information with citizens. This could be because citizens might raise undesirable issues, or they might use the service to

request information that could lead to conflict between legislature and executive (Scott, 2006). Thus, some countries have implemented a national digital strategy that establishes both digital infrastructure and digital legislation (Department of Internal Affairs, 2012e; ITA, 2007).

4.4 National-level characteristics unique to Omani local government

This section identifies national characteristics that could limit the general applicability of any National-level Framework developed using a case study focused on the Muscat Governorate; this being one example of Omani local government.

Oman has enjoyed political stability since 1970 and His Majesty the Sultan has been head of state, and its highest and final authority, throughout that period. Oman has a single body of government which consists of seven main councils and a group of higher committees, specialised councils, and public authorities. These institutions assist his Majesty in drawing up and implementing general state policy. Because Oman has a single body, based on the responsibility of the various government entities the Omani government will be treated in this research as an example of national government.

Administratively, the Sultanate of Oman divides into eleven governorates: Muscat, Dhofar, Musandam, Al Buraimi, Al Batinah North, Al Batinah Sough, Al Dhahira, Al Dakhliyah, Al Sharqiyah North, Al Sharqiyah South and Al Wusta. These governorates consist of a number of wilayats, and one is defined as the centre for the governorate.

The Muscat Governorate (MG) is located in the northeast of Oman and occupies some 3900 sq km, or around 1.26 % of Oman's land area. MG is the most populous area of Oman. It has a population of 776,000 people or some 28% of the total population, a growth rate of 2.6 percent and a density of 214 persons per

square kilometre - the highest population density in Oman. Of these, around 61% are male and 48% are expatriates (NCSI, 2011).

The Muscat Governorate consists of six wilayats: Muscat, Bowshar, A’Seeb, Al Amerat, Quriyat and Mutrah, **Figure 4.2**. MG also contains Muscat City, which as the capital of Oman houses the headquarters and administrative apparatus of the Sultanate. MG is headed by Muhafed (a governor) who is appointed by the government and who occupies a seat in the Council of Ministers. Each wilayat of MG is headed by Waly who are appointed by the government and report to the Muhafed.

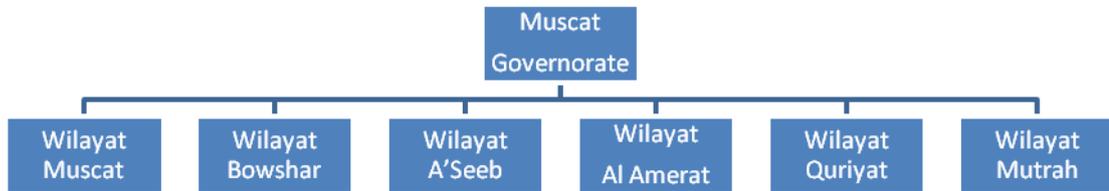


Figure 4.2: Structure of the Muscat Governorate

MG was established in 1793 and over the years has been subject to different reforms; the most recent being in 2008 to reorganize its functions and relationship with central government. Because it is the headquarters of government and many public and private organizations, the residents of MG are a multi-ethnic group. The main spoken languages are Arabic and English, although there are others such as Soahili, Baloshi, and Urdo.

In MG, feedback flows from citizens to government through several channels. The first is via the Consultation Council, which has members elected from the wilayats of the governorate to represent the citizens in the Consultation Council. People discuss their local concerns with their representative who can later raise them with government officers, either during the regular council meeting or during office visits. The second channel is via the many local councils and committees created by the government. For example, the Municipal Council represents the legislative apparatus that regulates Muscat Municipality works with regard to all challenges

to decisions, recommendations, and local ordinances. It has members from all the MG wilayats which are appointed by the government. The third channel is the direct interaction between citizens and government institutions, since citizens can visit the physical location of government institutions and submit their needs and discuss their issues directly with officers.

The government sector of MG is developed and managed by three groups of government institutions. The first group includes government institutions which have independent financial and administration systems and were established to oversee a specific sector. For example, the main function of Muscat Municipality is to develop and manage the municipality sector in MG. The second group includes dependant directorates or departments which affiliate to larger government institutions; being the ministries. For instance, the Directorate General of Education is part of the Ministry of Education, which was established to operate the education sector in MG. Such government agencies have a definite hierarchy structure, and are financially and administratively centralized or semi-centralized. The final group includes large government institutions; being the ministries which operate a specific sector in all the governorates of Oman. They are located in the Muscat Governorate, and again have a hierarchy structure. For instance, the Ministry of Higher Education operates the tertiary education sector in Oman.

Over the last two decades the Omani government has given great concern to the development of the ICT sector. Efforts include:

- Establishing regulatory bodies, namely; the Telecommunication Regulatory Authority (TRA) and Information Technology Authority (ITA)
- Liberalizing the sector and introducing a second mobile phone/Internet operator
- Launching the Digital Oman national strategy; eOman.
- Developing a government services gateway portal

- Providing programs focused on capacity building and enhancing ICT skills in society

These efforts have accelerated the transformation of Oman into a digital society. For example, the UN 2008 survey indicates that between 2005 and 2008 Oman has achieved a significant improvement in terms of its e-Government readiness, website features, information infrastructure and development of human capital. During this period, the number of Internet users also increased by 62 percent. (Ministry of National Economic, 2010)

In summary, the main characteristics of the local government sector in Oman, as identified from the Muscat governorate are:

- The government sector is operated by a single body of government
- Headquarters and the administrative apparatus of government is located in MG
- The sector is operated by different types of government institutions
- Government institutions are centralized/semi centralized and display a tall hierarchy structure
- Government officers are appointed
- A dominantly Arabic culture exists

4.5 Drivers of Omani public sector e-Government initiatives

The Omani government sector main characteristics (**Appendix 6**) indicate many forces which are expected to drive the adoption and use of e-Government initiatives. Politically-speaking, government support is expected to fuel the introduction of new online services. In a recent speech, his Majesty Sultan called upon all government institutions to speedily enhance performance and facilitate their services by using ICT (MOI, 2008). Also, free trade agreements, predominantly with the USA and other developed nations, are expected to motivate foreign investment in the ICT sector. Consequently, heightened

competition should further reduce Internet access costs and increase the usage of the Internet for peoples' daily activities.

Economically, diversification of the economy and growth is expected to create new sources of demand on the Internet, which is all expected to motivate more investment into the ICT sector. This opportunity is supported by the government's economic trend and vision for Oman's Economy 'Oman 2020', which is designed to steer the changeover from an oil-based economy to a diversification economy. Within this, the transformation into e-Government has been identified as a vital component for the creation of a knowledge-based economy, for which the government is providing financial support. For example, the latest Five-Year Development Plan (2006-2010) of the Sultanate lays out the upgrading of the ICT sector by implementing a national digital strategy called eOman, with more concentration on establishing the basis of e-Government.

Technically, the clear vision presented by the government of a transformed digital society is expected to increase the rate of e-Government transformation, and innovative e-Government initiatives are expected to appear within the next few years. The ITA vision is to *'transform the Sultanate of Oman into a sustainable Knowledge Society by leveraging Information and Communication Technology to enhance government services, enrich businesses and empower individuals'* (ITA, 2009).

Socially, Oman has a high growth rate and the majority of the population is aged 15-65 years. These demographic features are expected to further increase already high demand for new and innovative services. ICT capacity building programs such as training, educating and awareness are expected to leverage the ICT skills needed for society to use online services. Also, Omani Internet users appear to be very interested in using social networking tools.

In summary, these political, economic, social and technical forces are expected to encourage government institutions to seek out potential ICT opportunities that can facilitate Oman's transformation into a digital society. More e-Government initiatives are expected to appear in the Omani government sector, among them being the adoption of Web 2.0 applications driven mainly by the increased use of commercial social tools such as Wiki, Blogs and social networking sites.

4.6 A First-cut National-level Framework

The key factors influencing the acceptance of online social networking tools that were reported in the literature form the basis for the first-cut National-level Framework. On the citizen side, these factors are *Infrastructure*, *Digital divide*, *National culture* and *political issues* and, on the Organization side, *Infrastructure* and *Political issues*, **Figure 4.3**.

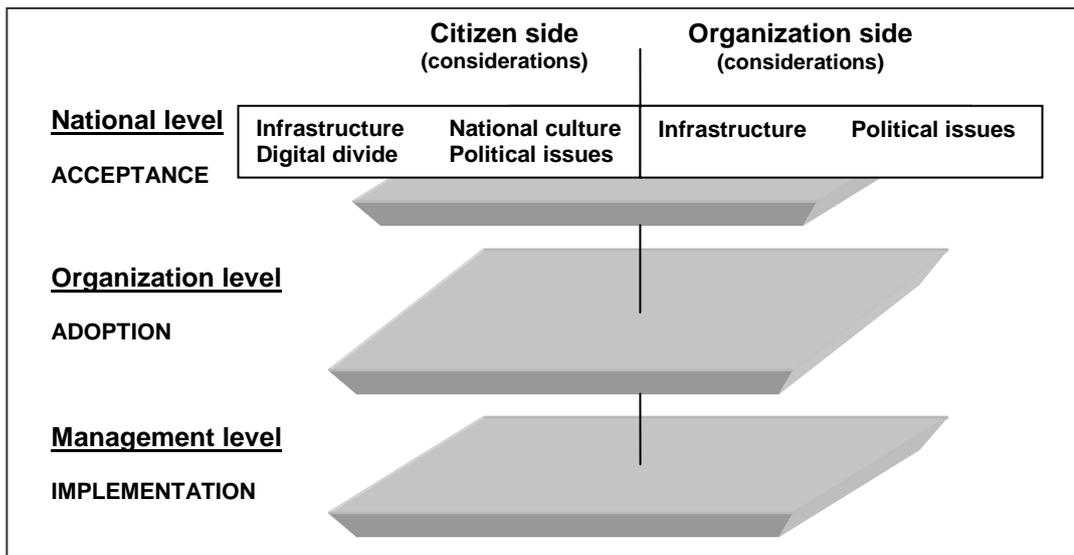


Figure 4.3: First-cut National-level Framework

4.6.1 Infrastructure

This factor is concerned with technical aspects influencing the ability of government organizations to provide online social networking services and the citizens' ability to access the Internet to use the offered online services; including availability of broadband services. The infrastructure factor was reported in the literature as a major inhibitor in the adoption of e-Government initiatives in developing nations generally (e.g., Al-Khouri and Bal, 2004; Hasan, 2003), and in

the Arabic context specifically (e.g., Aladwani, 2003). As noted earlier in Section 2.5, one of the weaknesses of the Omani government sector is the lack of a complete broadband infrastructure. This is due to both the geographical location and a dispersed population, which increases the investment cost.

In addition, there is relatively low competition in the ICT sector as there are only two major ISPs. Consequently, lack of proper infrastructure is expected to influence the adoption of online services in general, and social networking services that require fast access speed, specifically. Furthermore, broadband services, in contrast to dial-up services, facilitate online interaction by enabling large numbers of people to interact easily online at the same time.

4.6.2 Digital divide

This concerns the ability of citizens to participate in e-Government interactions. It defines the size of the gap between those who have the skills and the ability to access the Internet with those without such skills and access, and therefore who are unable to engage in online dialogue with government or otherwise access government online services and information.

The digital divide was highlighted as a critical issue for the success of e-Government initiatives in developing and developed nations (e.g., Aladwani, 2003; Deakins *et al.*, 2002, 2007c; Ho, 2002). The literature reported many actions that central or national governments can implement to bridge digital divide barriers, such as providing low-cost public access to computers and the Internet at the community level. In NZ, for example, the government long ago stated its intention to provide low-cost public access to computers and the Internet in places like libraries and Māori meeting places (Foreman *et al.*, 2000; NZ E-Commerce Strategy, 2000).

As noted earlier in Section 2.5, the main social characteristics of the sector are a high literacy rate, low levels of awareness of technology benefits, low Internet

penetration rates, and high Internet access prices. Some government initiatives to bridge the gap were also reported.

Based on the above findings, the digital divide factor is expected to influence the adoption and use of online social networking services; thereby inhibiting equal opportunities for every citizen to participate in online discussions. Consequently, more national effort will likely try to bridge digital divide gaps.

4.6.3 National culture

This factor is concerned with national culture characteristics that influence citizen acceptance of online social networking services designed to help them interact with, and share comments (opinion viewpoint, and suggestion) with, a government organization. National cultural characteristics are often described using Hofstede's (1987: 2003) power distance, uncertainty and masculinity, and individualism scores (Hofstede, 1987: 2003). For Arabic nations, national culture is an independent factor and a key influencer of citizens' intention to adopt new technology and innovations (e.g., Albusaidy and Weerakkody, 2008; Yasin and Yavas, 2007). From the dialogue literature, researchers tend to agree that discussion should be free from censorship and all members treated equally (Noveck, 2004; Witschge, 2004). Empirical study has also found that social issues such as a shared language (Chiu *et al.*, 2006; Jankowski and Os, 2004) influence knowledge sharing.

The national culture of Oman is expected to influence the adoption of online social networking services for achieving meaningful government-citizen dialogue; possibly by inhibiting citizens from engaging in government-citizen interactions and sharing information online. This is because, on the organization side, the Omani government sector has highly bureaucratic work processes, limited citizen participation in government activities, and a single government body (refer **Appendix 6**). On the citizen side, social features of the sector involve multiple languages, Islamic religion and an Arabic culture; which lead to high scores for

power distance, uncertainty and masculinity and a low score for individualism (Hofstede, 1987: 2003; Kabasakal and Bodur, 2002; Yasin, 1996).

4.6.4 Political issues

Political issues concern the central/national government policies supporting e-Government-citizen interaction. Similar to culture, political factors are expected to influence the adoption and use of online social networking services for achieving meaningful government-citizen dialogue because of the unique characteristics of the Omani government sector; Oman has a monarchy political system with no political parties, limited participation of citizens in government activities, and a single body of government. These features might inhibit participation in e-Government-citizen interactions and thereby may inhibit the adoption and use of online social networking services for achieving meaningful government-citizens dialogue. Researchers have also highlighted that legislative laws, regulations, and directives intended to facilitate the deployment of e-Government services can actually be barriers to the development, acceptance, and use of online services (Vassilakis *et al.*, 2005).

4.7 Refining the first-cut National-level Framework

The first-cut National-level Framework, with its four critical influencers of the acceptance of online social networking services that was derived from the literature, was refined in the light of case study findings. Case study data collection and analysis procedures were detailed in earlier Sections 3.10.5 and 3.10.6, respectively.

The plan for refining the framework was focused on finding evidence to support/refute the literature findings and identifying new factors not already included. In broad terms, policymakers and citizens were interviewed and asked to express their views on acceptance issues. Policymakers were asked the following questions:

1. Describe the main national level issues that you would take into account when the organization is considering whether to offer a new social networking service to its stakeholders.
2. Which ones are (or would be) the main drivers, and which ones the main inhibitors?

Citizens were asked the following questions:

1. What are the main challenges/barriers/obstacles to you participating with any new social networking service?
2. Overall, what main factors do you believe would need to be considered for a meaningful dialogue to be able to take place online between citizens and local authorities?

4.7.1 Demographic information (organization side)

On the organization side, a total of 11 senior IT and general managers and platform operators, nine males and two females, were interviewed as shown in **Table 4.2**. The majority of the participants have attained high educational levels and are aged 40 years or younger. IT experience ranged between 1-15 years and several of the participants have changed their job position at least once in the last 5 years. The small proportion of females in the sample in the senior IT workforce could partly be due to a culture barrier because there are limitations on Master and doctoral programs in higher education in Oman, and many students must complete these levels of qualifications overseas.

In terms of personal use of social networking tools, the participants have used discussion forums, Blogs, and Wiki and social networking sites such as *Facebook*. The majority of participants have also used discussion forums for personal online socialization. This reflects the low penetration of Web 2.0 tools in Omani society and may also be a consequence of subjective norms whereby participants routinely report that they use discussion forums. Overall, the IT sector can be

described as a young and very fast growing sector and the workforce is dominated by well-educated young males.

Table 4.2: Participant information (organization side)

		Gender		
		Male N=9	Female N=2	Total N=11
Personal use of online social networks	▪ Wikis	2	0	2
	▪ Blogs	2	0	2
	▪ Forums	9	1	10
	▪ Social networking sites	5	0	5
	▪ Other	1	0	1
	▪ None	0	0	0
Years in organization	▪ <1	1	0	1
	▪ 1-5	5	0	5
	▪ 6-10	1	0	1
	▪ 11-15	2	1	3
	▪ 16-20	0	0	0
	▪ >20	0	1	1
Years in current position	▪ <1	0	0	0
	▪ 1-5	7	2	9
	▪ 6-10	2	0	2
	▪ 11-15	0	0	0
	▪ 16-20	0	0	0
	▪ >20	0	0	0
Highest level of educational achievement	▪ PhD	2	0	2
	▪ Masters	3	1	4
	▪ Bachelors	3	1	4
	▪ Cert. or Dip	1	0	1
	▪ Other school	0	0	0
Age	▪ <20	0	0	0
	▪ 20-29	2	0	2
	▪ 30-39	4	2	6
	▪ 40-49	2	0	2
	▪ 50-59	0	0	0
	▪ >59	1	0	1

4.7.2 Demographic information (citizen side)

Fourteen citizens were interviewed to obtain in-depth information about their interactions with local government; access to the Internet; and personal use of social networking tools. Overall, the results in **Table 4.3** show citizens are using online social networking tools. All participants reported having access to the Internet and the majority have used broadband services. The high access rate can be explained by the interviewees being well educated, and by the ready

availability of broadband services in the Muscat Governorate (MG). However, dial-up services are still sometimes used due to the high access cost of broadband services and limited availability.

In terms of contacting government agencies, the results revealed that participants use different access channels. The majority preferred either to visit the physical location or to use the phone. The limited use of e-mail for such communication is a direct consequence of limited e-mail being used to transact government activities.

Despite the fact that the sample consists of males and females the majority of the participants reported that they have used online such tools. The main tool was the discussion forum. Only three participants have experience with other Web 2.0 tools such as Blogs and social networking sites. Although the sample is small, the results can be used to anticipate that there were no obvious major cultural barriers to females accessing the Internet in MG; at least for well-educated women over 20 years of age.

Overall, the results for this section reveal that the Omani IT sector is a young and very fast growing sector with a dominantly male workforce. The results also show that there is an acceptance to use online social networking tools by citizens and by government institutions. The dominant social networking tool is the discussion forum.

Table 4.3: Participant information (citizen side)

		Gender		
		Male N=10	Female N=4	Total N=14
Means of contacting local government authority	▪ Physical visit	11	2	13
	▪ Phone	8	2	10
	▪ E-mail	6	3	9
	▪ SMS	0	0	0
Means of accessing the Internet	▪ Dial-up	3	3	6
	▪ Broadband	9	3	12
	▪ Cell phone	3	0	3
Personal use of online social networks	▪ Wikis	0	0	0
	▪ Blogs	3	0	3
	▪ Forums	9	1	10
	▪ Social networking sites	1	2	3
	▪ Other	0	0	0
	▪ None	0	1	1
Highest level of educational achievement	▪ PhD	0	0	0
	▪ Masters	9	0	9
	▪ Bachelors	0	3	3
	▪ Cert. or Dip	1	1	2
	▪ Other school	0	0	0
Age	▪ <20	0	0	0
	▪ 20-29	2	1	3
	▪ 30-39	7	3	10
	▪ 40-49	1	0	1
	▪ 50-59	0	0	0
	▪ >59	0	0	0

4.7.3 The effects of a transformation into e-Government

From the interviews it was learned that online services were introduced to MG in the late-1990s and that different types of online services are delivered by various means. The main (static) services are in the form of documents, forms, reports, laws and regulations, and newsletters. In contrast, interactive services include electronic mail services and discussion services. Online services are delivered by two main channels: the Internet and mobile devices. The Senior IT manager at 'Organization A' stated that,

“The online services were introduced in 1997. At the beginning the website was used to deliver information about the ministry. Later, interactive features were added to the website which includes a discussion forum (a social networking platform) and SMS services.”

The intention to transform into e-Government within MG was mainly driven by the intention to increase efficiency, effectiveness, transparency, opportunity, and accountability; and to enhance the convenience for citizens. For example, the Senior IT manager at Organization A stated that,

“The influence of the Internet and increasing numbers of Internet users caused the IT Directorate to explore the potential opportunity for the education process... The main reason for offering online services was to benefit from the influence of the Internet in order to facilitate the education process... Today the Internet enables citizens to obtain the services anytime anywhere... also it enables the organization to identify citizens' needs.”

These intentions were also emphasized by the senior manager of the IT department in Organization B, who stated that,

“The main reasons for offering online services were to reduce the operation time and cost. Before using online services, students had to visit the physical place of the institutions to complete admission processes which took a long time. Consequently, online services were introduced to improve the effectiveness and efficiency of the admission process and to deliver convenient services....Today students can register for a scholarship from anywhere and anytime by using either the Internet or mobile channels.”

In terms of external factors preventing public organizations in MG from further developing online services, the interviews revealed that the main external issues were: *infrastructure, digital divide, cultural issues and lack of Arabic web content*. For instance, one senior manager declared that,

“Before 1997 the challenges were about the availability of the Internet whereas today it is about Internet speed which is limited in some areas... some people are still not accepting the idea of using the Internet due to a lack of knowledge about the usefulness of the Internet and how to use it.”

Many actions have been implemented in order to bridge digital divide barriers. For example, the government started a National IT Training and Awareness initiative that included providing training and awareness programs for citizens and government employees in different wilayats (cities) in order to develop ICT knowledge.

Regarding the impact of e-Government services on citizens, the interviews revealed that the use of ICT to deliver public services has reduced the cost of the service to citizens. For example, the senior manager of the IT department in Organization B declared that,

“The transformation of the admission process to online services has enabled students to register for scholarships from their home. This saved them money, especially those students who live in rural areas where previously they used to travel to the city centre to register their interest.”

Interviews also revealed that online services help change peoples' perception about the use of the Internet and online services. As the senior manager of the IT department in Organization B anticipated,

“The transformation into digital services is expected to encourage people to use other online services...because all students have to use the Internet to deal with the organization.”

In summary, governmental institutions in the Muscat Governorate began the transition to e-Government in the late 1990s. This movement was driven mainly by the intention to use different channels to disseminate information and deliver better services. Over the last ten years government institutions have developed their online services although development is still slow. The reported national factors preventing the organization from further developing their online services were: *Infrastructure, Digital divide, Cultural issues* and (lack of) *Arabic web content*.

4.7.4 Acceptance and adoption of online social networking services

There was a general acceptance of online social networking services both by government institutions in MG and by citizens. All the institutions that participated in this study already offer online social networking services, which are used to identify stakeholders' needs, help to solve their problems, and promote new projects and facilitate information exchanges. For example in Organization A, online social networking services provide a channel for multidirectional communication. One Senior IT manager said that,

“The online services were introduced in 1997. At the beginning, the organization used its website to deliver information about the ministry. Then, in 2002, a discussion forum (a social networking platform) was established with the purpose of listening to what people need, providing ideas for projects and receiving feedback.”

In Organization C, online social networking services were introduced to improve internal efficiency and knowledge management. One senior manager stated that,

“The discussion forum was introduced in 2006...The centre has received many enquiries either by phone or website or visits to the centre regarding the new online services and the new admission services...The aim was to reduce the load and avoid repetitions...and to offer services for students who used to post their inquiry in via other platforms.”

While social networking services were introduced to MG in 2002, the interviews revealed that government institutions use only one type of Web 2.0 application, the discussion forum (with two of the three organizations using different versions of the same tool). This can be explained by policymakers being most concerned about the citizen experience, thereby leading to slow diffusion of other Web 2.0 tools like Blogs and Wikis.

In terms of online social networking services being accepted by government employees, the senior managers of Organization C stated that,

“At the beginning there was great resistance by employees and officers for several reasons; including not being convinced about the benefits of using social networking or being sensitive to the need to avoid using words, or raising issues, that could be sensitive to some people or the organization itself.”

Regarding the main advantages and disadvantages of offering social networking services to stakeholders, the interviews revealed that social networking services add value for the organization and its citizens. The senior manager of the IT department of Organization A stated that,

“The social networking services opened new communication channels with stakeholders...[which] facilitated the flow of information between top management and employees, and enabled stakeholders to share their opinions and suggestions about posted topics...and enhanced innovation.”

The IT specialist in Organization B supported this. He declared that,

“...the opinion of citizens is important to us. This is because people have different opinions and while some people accept some ideas others might reject them. Also, employees can't always see what citizens' needs are and people are more aware about their needs than others. So when citizens are given the opportunity to express their feelings they reflect their needs which might not otherwise be seen by employees.”

Thus, the main advantages of the multidirectional network from the organizational side can be summarized as it:

- assisted the organization to identify the needs of employees and citizens
- helped the organization to solve some of the problems that face stakeholders
- increased awareness of societal needs because it could be used to listen to what citizens say they need
- enabled the organization to communicate with stakeholders in order to distribute ideas and projects for feedback

Some disadvantages were also reported:

- Some users might try to criticize the person rather than that person's role
- Bad words, criticisms, different opinions, quality of the input
- Accessibility issues
- Credibility issues

From the citizen side the interviews revealed that there was general acceptance to use social networking serves. The majority of the participants reported that they have used online social networking tools, and the main tool they used to socialize online was the discussion forum. Only three participants have experience with other Web 2.0 tools such as Blogs and social networking sites like *Facebook*.

Participants have used social networking services for the following reasons:

- Sharing of information, ideas and opinions
- Developing personal skills
- Seeking consultation from specialists
- Following the news
- For entertainment

Although participants reported that using online social networking tools could be time consuming and costly, and could involve defamation, such tools helped them to:

- Develop discussion skills
- Easily access a pool of information
- Obtain the information quickly
- Obtain different opinions

4.7.5 Consideration aspects for adoption and use of OSN

The organization side participants were asked to describe the main issues that would usually be taken into account when their organization is considering

whether to offer a new social networking service to its stakeholders. Similarly, citizens were also asked to list the main challenges/barriers/obstacles to their participation with offered social networking services, as shown in **Table 4.4**.

Table 4.4: National-level factors for consideration

	Organization side	Citizen side
Availability of broadband services	√	√
Digital divide barriers	√	√
Cultural barriers	√	√
Political issues	√	√

Participants from the organization side perceived that *availability of broadband services* was one of the limitations to offering online services. For example, one senior manager stated that,

“It is not easy to deliver services to everyone because of the limitations of Internet access in some areas. Before 1997 the challenges were about the availability of the Internet whereas today the challenge is about the Internet speed.”

This view is supported from the citizen side where the majority declared that slow Internet speed was one of the obstacles to their participation in online discussions. At a national or central level, the Omani government has recognized the need to build a good technical infrastructure to enhance the vertical and horizontal diffusion of e-Government. For example, ITA has established many projects aimed at linking government agencies. In addition, a second ISP has been licensed in a bid to increase the availability of Internet services and reduce the cost of Internet access.

Government institutions have also attempted to mitigate accessibility challenges, by offering different channels for citizens to access online services. For example, Organization B uses SMS to enable students to register online. However, the

organizations studied had not integrated the mobile devices into social networking services.

Another consideration is *digital divide* barriers. The interviews revealed that the main factors influencing the adoption of online services relevant to the digital divide were:

- Lack of awareness about the value of using online services
- Lack of knowledge to use the services
- Lack of Internet access devices, such as PCs
- Internet access cost

In addition, the interviews revealed that these factors were influenced by such moderating factors as

- Literacy
- Poverty

One female participant, when asked about factors that might inhibit females from participating in online social networking services said,

“A very small number of older women know how to use the Internet...There is a gap among women regarding the use of the Internet.”

National culture was also reported to be an importance aspect that needed to be considered for the adoption and use of social networking services. Participants highlighted the following possible culture inhibitors:

- Identity
- Language
- Fear of the Internet
- Criticism culture
- Dialogue culture

Regarding identity, the interviews revealed that the majority of participants of virtual communities participated with an anonymous name. They preferred to hide their identity because of perceived culture barriers. One citizen declared that, *“Using an anonymous name enables you to say your opinion freely”...some people don’t accept criticism. Consequently, criticism with your real name might cause social problems for you.”*

However, there was no real consensus on this viewpoint. One citizen said, *“In my opinion, members should use their real name. This is because if he/she presents a good argument others will accept it.”*

Online social networking services use the Arabic language. Consequently, some citizens may not be able to participate because of a language culture barrier, due to there being more than one spoken language in Oman.

Regarding evidence of a 'criticism culture' and a 'dialogue culture', many participants perceived that some government institutions do not accept criticism. They attribute this to the general lack of criticism skills practiced in society, and to political circumstances. One participant stated, *“There is a general impression in society that Oman has a monarchical political system where the decisions are made from the top down ...Therefore, the decisions are made internally and not by active participation.”*

The main political consideration is that of government assistance in the form of financial, technical, and political support. Interviewees indicated that such support has enhanced the diffusion of online services among public organizations. A Senior IT manager reflected on a recent speech by His Majesty, who had urged government institutions to accelerate their transformation into e-Government, *“This is a critical point for us. The recent speech of His Majesty will encourage us to offer more online services.”*

Another political consideration is digital legislation, since a factor that limits citizen participation with online social networks is the lack of legal protection.

One citizen stated that,

“The recent digital legislation still needs to be modified ...legislations need to be set in place that protect privacy.”

In summary, participants highlighted several different aspects at the national level that require attention: availability of broadband services; digital divide barriers; national culture barriers, and political issues.

4.8 Towards a second-cut National-level framework

As indicated in **Table A7.1** in **Appendix 7**, 13 themes (subcategories) emerged from case study data collected from the organization and citizen sides during Phase II of the research. These were grouped into four main factors: *Infrastructure*, *Digital divide*, *National culture*, and *Political issues* and compared with the literature review findings from Phase I. The level of support for each factor is described as being either Strong or Weak. Hence, a strong level of support is assigned to factors that the majority of participants highlight as being important. In comparing the findings from Phase I and Phase II, it is apparent from **Table 4.5** that the majority of the case study findings agree with the extant literature.

4.8.1 Infrastructure

In terms of the influence of infrastructure on the acceptance of adoption and use of Web and other technology-based applications, the case study findings offer strong support for the literature. From the organization side, the case study findings revealed that non-availability of broadband services was inhibiting government institutions from offering more online services.

Table 4.5: Support for the first-cut National-level Framework

Factor	Description	Findings	
		Phase I	Phase II
Infrastructure	1. Broadband services	L	S
Digital divide	2. Awareness and training programs	L	S
	3. Access channels	L	W
	4. Access cost	L	S
	5. Access skills	L	S
	6. Access device	L	W
	National culture	7. Identity	L
8. Language		L	W
9. Fear of the Internet		L	W
10. Criticism culture		-	S
11. Dialogue culture		-	S
Political issues	12. Government (financial, political and technical) support	L	S
	13. Legislation or lack of it	-	S
Key			
(Phase I):		(L) Factor detected in literature	(-) Factor not detected in literature
(Phase II):		(S) Strong case support	(W) Weak case support

Similarly, many citizens reported that slow Internet speed was the major inhibitor to them using social networking tools. Consequently, it is important to consider the availability of broadband services within the local area as this may narrow the options when government organizations are selecting appropriate social networking services for meeting specific, predefined goals; since some social networking services, such as a podcasting service, require very fast Internet speeds. Enabling large numbers of people to easily interact and share online at the same time also demands fast Internet speeds.

4.8.2 Digital divide

Regarding the influence of digital divide barriers on the acceptance of adopting and using of online social networking services for achieving meaningful government-citizen dialogue, the case study findings offer mixed support for the extant literature. Many participants declared that digital divide barriers were inhibiting people from accessing the Internet; specifically, concerning lack of awareness and lack of training programs, lack of Internet usage skills, and cost of access. On the other hand, there was only weak support for the influence of

Internet access channels and Internet access devices. Consequently, these factors were excluded from the final framework.

4.8.3 National culture

Regarding the influence of national culture on the acceptance of using online social networking services, the case study findings offer mixed support for the extant literature and highlights others that were not considered in the literature. It appears that factors related to identify and to government attitude to criticism strongly affect acceptance of the online social networking service. In addition, not mentioned by the literature is the requirement for an acceptable dialogue culture and for citizens to have online dialogue skills. Conversely, there was only weak support for the notion that language and fear of the Internet influence acceptance of online social networking services that can interact and share information with government organizations. Consequently, these factors were excluded from the final framework.

Government organizations in Oman have recognized this need and attempt to encourage people to participate by various means, such as allowing users to hide their identity. Management teams also moderate online discussions by deleting contributions that are incompatible with the discussion rules. These aspects were reported as critical factors for the success of online discussion since concealing identity enables members to openly discuss their opinions, while also avoiding any social problems that might arise due to conflicting opinions. Low quality discussions discourage people from participating. For all these reasons, it is important to understand the cultural features of the local area since this will help government institutions to set participation rules in line with national cultural aspects, thereby facilitating operation of online dialogue and motivating different genders/education levels/ages to join online communities for the purpose of 'rich' discussion.

4.8.4 Political issues

The case study findings strongly confirm that the main political consideration is government assistance in the form of financial, technical, and political support. Participants indicated that such support has enhanced the diffusion of online services among public organizations. A further strong consideration, although not made apparent in the literature, is that lack of legislation about information sharing discourages people from participating in online discussions. However, Omani government institutions do attempt to overcome the lack of legislation by setting participation rules and by controlling discussions. Hence, it is important that institutions understand the political factors within their local area to help them define suitable online discussion characteristics and appropriate social networking application.

4.9 Testing the integrity of the second-cut National-level Framework

In Phase III of this research, participatory action research with a government institution in the Muscat Governorate involved two separate Web 2.0 online social networking initiatives. These were successfully implemented by the organization and were used by citizens. Although close researcher collaboration with the Muscat Municipality (MM) was primarily intended to test the integrity of the Organization-level and Management-level frameworks, the findings also offer support for the second-cut National-level framework. The action research data collection and analysis procedures were detailed in earlier Sections 3.11.5 and 3.11.6, respectively and **Appendix 8** offers a narrative of the Phase III participatory action research activities.

4.9.1 Key action research findings and insights

As indicated in **Table A7.4** of **Appendix 7**, five themes (subcategories) emerged from data collected from the organization side during Phase III of the research. These were grouped into three main factors: *IT infrastructure*, *Digital divide*, and *National culture* and compared with the findings from Phase I and Phase II of this research, **Table 4.6**.

Table 4.6: Support for the second-cut National-level Framework

Factor	Description	Findings		
		Phase I*	Phase II*	Phase III**
Infrastructure	1. Broadband services	L	S	√
Digital divide	2. Awareness and training programs	L	S	√
	3. Access channels	L	W	X
	4. Access cost	L	S	X
	5. Access skills	L	S	X
	6. Access device	L	W	X
National culture	7. Identity	L	S	√
	8. Language	L	W	√
	9. Fear of the Internet	L	W	X
	10. Criticism culture	-	S	√
	11. Dialogue culture	-	S	X
Political issues	12. Government (financial and technical) support	L	S	X
	13. Legislation or lack of it	-	S	X
Key				
(Phase I): (L) Factor detected in literature (-) Factor not detected in literature				
(Phase II and III): (S) Strong case support (W) Weak case support				
(√) Factor detected in practice (X) Factor not detected in practice				
(*) Findings reported from the organization side and the citizen side				
(**) Findings only reported from the organization side				

With regard to basic *Infrastructure*, broadband availability was considered during the implementation of an online social networking service that was created to obtain feedback from citizens resident in the six MG wilayats. This revealed that the completed service would not encompass every area of MG. Consequently, 'access and navigate' features were utilized; for example, a link in the main page helped navigate users to the relevant social networking service. In addition, the same company hosted the MM website to ensure accommodation of high traffic volumes.

Consideration of all the *Digital divide* factors previously identified was observed during the action research. MM marketed its new services to a wide range of target groups via email and SMS. The new services were also promoted on the most popular public online discussion forums in Oman. In addition, the

organization created a training program to educate employees about the new online services.

Consideration of several of the *National culture* factors was also observed. For example, citizens were allowed to conceal their identity by choosing their own user name, and the participation rules were stated on the main page. Guidelines helped participants to achieve a meaningful dialogue and any comments were reviewed regularly. An English version was available for non-Arabic speakers to encourage participation. Politically speaking, the discussion topics were carefully selected to avoid raising undesirable organizational issues.

The action research did not explicitly consider the citizen side due to time limitations. Hence, no direct evidence was collected from citizens regarding the influence of National-level factors on citizens' participation in online discussion. However, some influences may be inferred. In spite of 400 invitations being sent to citizens via SMS, only 57 (14%) participated in the six listed topics in the first two months of operation. This might be explained by motivation issues around the posted topics or by Internet access issues such as cost, speed or skill needed. However, the majority of the inputs to the discussions were relevant to the listed topics, since only 10 out of 57 posts (17.5%) were recorded as being irrelevant; a feature that can be explained by the policies used to control the discussion. Finally, only a small proportion of females chose to participate (11 of 57 inputs, or 19.3%). Given how participants could select their own username to conceal their identity, this might be due to a range of motivation factors such as cultural issues, digital divide issues, or personal issues.

4.10 Final National-level Framework

This section presents the final National-level research framework resulting from Phases I-III of the research. The framework is presented in **Figure 4.4** and the factors shown are considered essential, since without initial acceptance any further progress towards adoption, implementation and citizen use will not be made.

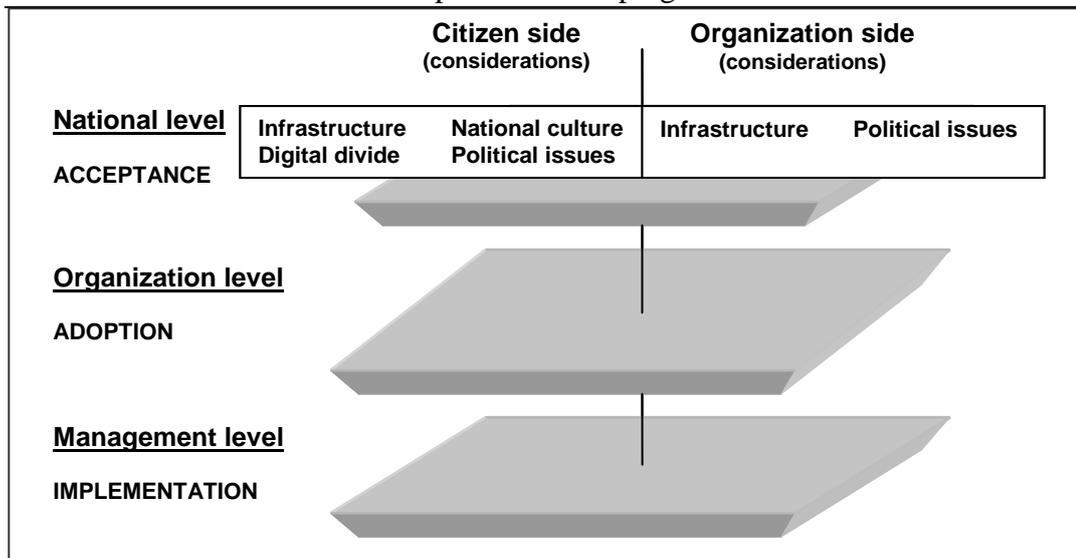


Figure 4.4: Final National-level Framework

4.10.1 Infrastructure

Infrastructure concerns the external technical aspects that influence the government organization to accept whether or not to offer online social networking services that interact and share information with citizens. Similarly, these aspects influence citizens' acceptance of the online social networking services offered by the government organization to interact and share comments, opinions viewpoints, and suggestions. In particular, infrastructure concerns the availability of broadband services in every area of the country.

The concern of broadband service providers is provision of quick and easy access to the Internet, and with reasonable access cost in all areas. At the central/national level of government a wide spread of broadband services can be achieved by governments establishing strategies and regulations to liberalize the ICT sector; for example, by motivating foreign investment with the aim of increasing competition between the ISPs. Although not under organizational control, several actions can be taken at the organizational level to minimize the influence of a lack of broadband services. Some services need high access speed; hence, it is advisable for government institutions to match appropriate online social networking tools and services. IT managers also need to consider the web design

standard 'W3C' in order to enable users to access the services easily with one click. Finally, it is advisable to host the social networking platform on a separate server to enable high interaction speeds.

4.10.2 Digital divide

This factor is concerned with digital divide aspects influencing the ability of citizens to access the offered online social networking services and effectively participate in the discussion (sharing comments such as viewpoints, opinions and suggestions). It involves concerns around lack of awareness and training programs, lack of Internet usage skills, and lack of availability of access at a reasonable cost.

Awareness and training programs concern providing educational programs to leverage the users' knowledge about online social networking services such as the value of online social networking services or how to use the services. Internet access skills concern availability of basic skills for using computer such as typing, navigating the Internet. Finally, Internet access cost concerns availability of reasonable access cost for high speed Internet connection in all areas of the nation. The general degree of its influence may be assessed from national statistical indicators, such as the number of PCs per person and the number of Internet users. More specifically, it can be assessed by determining accessibility to Internet services in the local area, availability of Internet access skills, people's perceptions regarding Internet access cost, and perceptions towards participating in online discussions.

At the central/national level of government, many actions can be implemented to bridge digital divide barriers; including low-cost public access to computers and the Internet at the community level, support for low-income citizens, and establishing training and awareness programs. As noted previously, the case organizations had implemented educational programs online. For example, (at the

organization level of the proposed model) Organization B used an online services awareness program. A senior manager stated that,

“A key aspect that needs to be considered before launching any online service is awareness.”

4.10.3 National culture

This factor is concerned with national culture characteristics influencing citizen’s intention to use online social networking services to interact and share comments (e.g., opinion viewpoint, and suggestion) with a government organization. This mainly includes concerns regarding identity, and a criticism and a dialogue culture.

- Identity influences citizen intention to access and actively use the offered social networking services to interact and share comments with other community members, particularly when they would be asked to declare his/her real personal information such as real name family name, gender and/or workplace.
- Criticism culture concerns a citizen’s commitment to following the participation criticism rules/regulations/policies, in order to be allowed to interact and share comments (opinions/viewpoints, suggestions) with other virtual community members.
- Dialogue culture concerns a citizen’s commitment to following the participation discussion rules/regulations/policies, in order to be allowed to interact and share comments (opinions/viewpoints, suggestions) with other virtual community members.

Several issues such as characteristics of online dialogue, educational level, and gender can moderate the influence of cultural factors. Consideration of national culture is expected to facilitate meaningful dialogue because it helps government institutions set participation rules that are in line with national culture norms. Consequently, it will facilitate the operation of online dialogue and motivate groups of people differentiated by gender/educational level/age to join the online community.

4.10.4 Political issues

Political issues concern central/national government policies that support the online government-citizen interaction and sharing of information. It includes the availability of central/national government financial and technical support for government organizations for offering government-citizen interaction and sharing information online services. It also includes availability of legislation governing the sharing of information with citizens online. From the citizen side, it includes the influence of legislation on citizens to share comments (opinions, suggestions) with a government organization. Indicators include top leadership support and presence of legislation that facilitates online information sharing. The influence of political factors can be moderated by several issues such as the form that government takes and the political system itself.

4.11 Potential limitations on the application of the framework

One of the limitations of this study is that the context of the research is quite specific, which may limit its general application to other settings. It has only been refined and tested in the Muscat Governorate, where public services are operated by three different types of government institutions. Another limitation is that the research scope was constrained by the available time to conduct the research so that the study did not consider the citizen side during Phase III.

4.12 National-level secondary research questions

This section (briefly) addresses the National-level secondary research question presented earlier in Section 2.9. Secondary research questions are discussed as a complete set in Chapter 7.

4.12.1 Secondary research question SQ1

What are the external factors that inhibit/drive the development of e-Government in Oman?

The National-level Framework identified four key external inhibitors/drivers of the development of new online services:

1. Infrastructure
2. Digital divide
3. National culture
4. Political issues

These factors were initially identified via literature review, before being further investigated in the Omani e-Government context using case studies. Due consideration is important because they help to determine the successful outcome of the e-Government initiative. As the final National-level Framework is generic in nature it can be applied to other Arabic nations having characteristics similar to those of Oman.

4.13 Chapter summary

To-date, there does not appear to have been any research conducted on the actual implementation of Web or other technology-based applications intended to achieve government-citizen meaningful online dialogue in government sectors in general, and in Arabic nations specifically. This chapter has described the development, over three separate research phases, of a National-level Framework (NLF) for the acceptance of using Web or other technology-based applications for achieving government-citizen meaningful online dialogue within the Omani government sector. The final National-level Framework comprises the identified critical issues external to the organization which should be considered if Web or other technology-based applications are to be successfully implemented that support effective government-citizen interactions. These were categorized as *Infrastructure*, *Digital divide*, *National culture*, and *Political* factors at least as pertains to the Omani government sector. Oman is an Arabic nation that is still developing and its government consists of a single body with a hierarchical structure. It is judged that the developed framework can be used in other Arabic nations that have similar characteristics to Oman.

Chapter 5: Developing the Organization-level Framework

5.1 Introduction

This chapter is the second one of three to present the research findings for this study. The output from this chapter is the Organization-level Framework (OLF), containing the critical factors judged necessary at the organization level for the successful adoption and use of online social networking tools within the Omani government sector. It is judged that these factors require consideration if Web-based applications are to be successfully implemented that support effective government-citizen interactions.

The chapter is arranged as follows. First, the framework development process is reviewed. This is followed by description of the developed first-cut OLF which is subsequently refined with the aid of case studies, and then further substantiated with insights gained from participatory action research. The final OLF is then presented and the Organization-level secondary research questions are addressed.

5.2 Organization-level Framework development process

It was intended that an Organization-level Framework would document the critical factors required for the implementation of governmental online social networking services from the organizational perspective. Similar to the National-level Framework (NLF), this framework was developed in three separate research phases as detailed in Chapter 3. In brief, these key steps for developing the OLF are shown in **Figure 5.1**. These comprise: (1) development of a theoretical model; (2) case study understanding; (3) derivation of the first-cut model; (4/5) refinement into a second-cut model; (6) testing for variation and completeness of the second-cut model; and, (7) final model presentation.

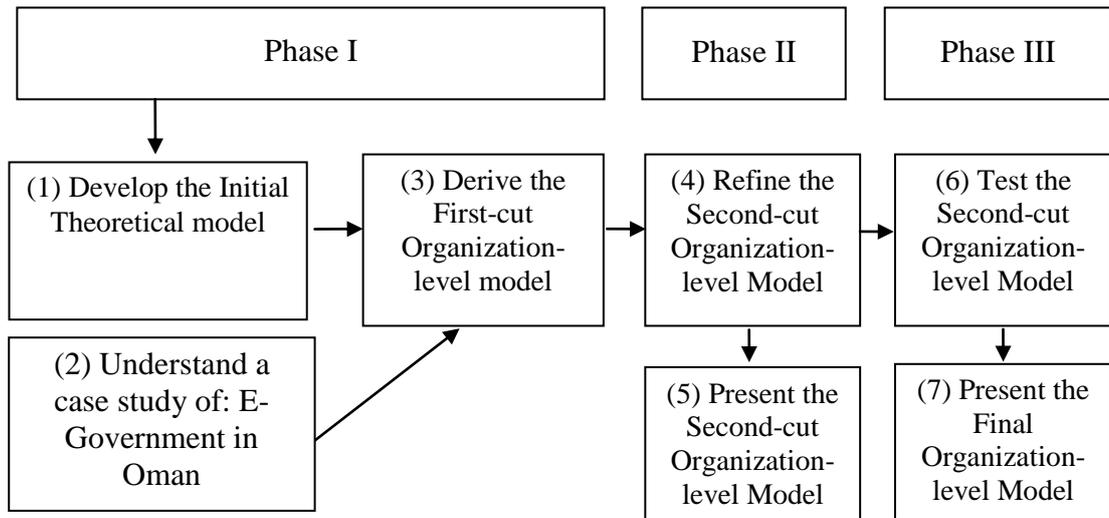


Figure 5.1: Flowchart for the development of the Organization-level Framework

5.3 Organization-level Framework considerations from the literature

For the purpose of initial (first-cut) model development, this section focuses on the (Organization-level) considerations identified from the literature to be relevant to government organizations when they are deciding whether to embark on a Web or other technology-based initiative. Since implementation of an online social network is an example of an e-Government initiative, it was considered reasonable to review the organizational factors that influence transformation towards e-Government.

The e-Government literature has reported a number of adoption challenges, which can be aggregated into the five main factors shown in **Table 5.1: Strategic issues, Organizational resources, Top management support, Organizational culture and Resistance to change.**

Table 5.1: Adoption of e-Government social networks: Organization-level issues

Author	Year	Concept									
		Strategic issues		Organizational resources		Top management support		Organizational culture		Resistance to change	
Perspective:		C	O	C	O	C	O	C	O	C	O
Al-Khouri and Bal	2004				N						
Al-Nahas	2006				N						W
Bohm	1996				N						
Bwoma and Huang	2003				N						
Deakins <i>et al.</i>	2007c				W A						
Ebrahim and Irani	2005				N		N				
Ferguson <i>et al.</i>	2007				W						
Heeks	1999				N						
Ho	2002				W		W				W
Kanter <i>et al.</i>	1992		N		N						
McClure	2000				W						
Moon	2002				W						N
Norris <i>et al.</i>	2001				N						N
Pavlichev	2004										N
Reddick and Frank	2007								W		
Tolbert and Zucker	1983						N				

C: Citizen side; O: Organization side; A: Arabic nations; W: Western nations; N = Not specified

Society's interest in social networking is growing dramatically (Vossen and Hagemann, 2007) and, since the adoption of online social networks by government agencies is generally driven by IT strategy, the mere presence of IT strategy can indicate a greater organizational willingness to progress towards e-Government. Even then, organizational adoption of online social networks automatic may fail to receive top management support due to problems in operationalizing the top-level *Strategic vision*, including security, privacy, accessibility, operational and data analysis issues. For example, a UK study concluded that the main barriers to e-Government adoption were trust, finances, security, and information quality (Gilbert *et al.*, 2004). Furthermore, Tolbert and Zucker (1983) report that IT innovation is more likely when there is support from the administrative authorities.

Web-based applications projects might also be rejected due to a lack of specialist staff and other critical technical and non-technical resources needed to implement

Web-based services. For example, because Web-based applications provide a powerful means to build virtual communities (e.g., Finin *et al.*, 2005; Vossen and Hagemann, 2007), human resources are needed to moderate online discussions and otherwise achieve meaningful dialogue to a professional standard of deliberation (Bohm, 1996).

Shortage of IT skills is frequently cited as a particular barrier for the adoption of e-Government initiatives in developed and developing nations (Al-Nahas, 2006; Bwoma and Huang, 2003, Heeks, 1999; Ho, 2002; Moon, 2002; Norris *et al.*, 2001), due in particular to the difficulty of attracting and retaining the right IT workforce in a high demand market (McClure, 2000). According to Ebrahim and Irani (2005) this situation is exacerbated by high IT staff turnover in public sectors that generally cannot compete with more generous private sector compensation packages.

Moon (2002) suggests enhancing the effectiveness of e-Government practice using high quality training programs. Ferguson, Griffiths and Miller (2007) similarly emphasize the importance of focusing on people in order to achieve successful online citizen engagement; seeing such engagement as being more about content, interactivity and skills than it is about technology. In order to plug the online engagement skills gap, they suggest that government not only needs to recruit, but should invest in training the staff currently in place; thereby taking advantage of transferable experience and skills.

With most of the financial resource for government agencies coming from central government, lack of financial resources might influence the leader's decision to adopt online social networks, For example, Norris *et al.*, (2001) found that lack of central government funding was a major barrier for the adoption of e-Government initiatives at the local level in the USA. Similarly, in developing nations, limited resources has been reported as one of the major challenges to the adoption of e-Government initiatives (Al-Nahas, 2006).

Implementation of Web or other technology-based applications for achieving meaningful government-citizen dialogue may also stall if the leadership perceives that ‘undesirable’ changes to the Organization *culture* may result. This is because, in addition to needing adequate resources, some change in organizational structure, processes, regulations, and roles might be required (e.g., Reddick and Frank, 2007).

In summary, the organization’s leadership needs to consider strategic issues, organizational resources, top management support, organizational culture and resistance to change when deciding whether to implement an online social network.

5.4 Organization-level characteristics unique to Omani local government

This section identifies characteristics potentially unique to the Muscat Governorate (MG) case study that could limit the general applicability of any Organization-level Framework developed.

As noted in section 4.5, the MG develops and administers public services to the public by from several government institutions that can be divided into two main groups: National Government Institutions (NGIs) and Local Government Institutions (LGIs). NGIs refer to the government institutions which were established to develop and manage specific sectors, and to deliver their services to all governorates. On the other hand, LGIs were established to develop and manage specific sectors, and deliver their services to specific geographical areas (governorates or wilayats). All government institutions were established by Royal Decrees that define their characteristics, such as their relationship with central government, physical location, function, organizational level, structure and administrative and financial situations (i.e. dependent or independent). **Table 5.2** shows the key characteristics of these two groups of government institutions.

Table 5.2: Key characteristics of government institutions in MG

Characteristics	National Government Institution (NGI)	Local Government Institution (LGI)	
		DLGI	ALGI
Operational areas	National level	Governorate level	wilayat level
Structure	Hierarchy	Hierarchy	Hierarchy
Authority	High level	Medium	Low
Administration	Independent	Independent	Dependent
Relation with central government	Direct	Direct	Indirect
Financial	Independent	Independent	Dependent
Recruitments	Centralized	Centralized	Centralized
Size	Large	Medium	Small
Example	MoHE*	MG**	MM***

*Ministry of Higher Education ** Muscat Governorate *** Muscat Municipality

In terms of the relationship with central government, all NGIs are directly related to central government, as is the case of the Ministry of Higher Education (MoHE). In contrast, LGIs are either directly related to central government (DLGIs), as is the case of the Muscat Governorate (MG), or are affiliated to other large government organizations (ALGIs), as is the case of the Muscat Municipality (MM). Direct linkages with central government means a high level of authority because they are then led by ministers appointed by Royal Decree to supervise the organization's affairs, to implement the general policies of the government, and to draw up guidelines for the organization, and follow up on their implementation. According to the Basic Law, ministers are individually responsible before the Sultan for the manner in which they perform their duties and exercise their authority in the organization (MOI, 2002). Ministers have the final authority in their unit. In contrast, the organizations that are affiliated to other organizations have a second level of authority. These organizations are led by officers who are either appointed by Royal Decree or by the leader of the affiliated organization.

All government institutions have a hierarchal structure consisting of different levels of sub units: directorates, departments, and divisions. The number of sub-units depends on the size of the organization. For example, large organizations can have structures with up to five levels as shown in **Figure 5.2**. Hence, decisions may need to pass through several higher levels to be approved, which all take time because of the highly bureaucratic process.

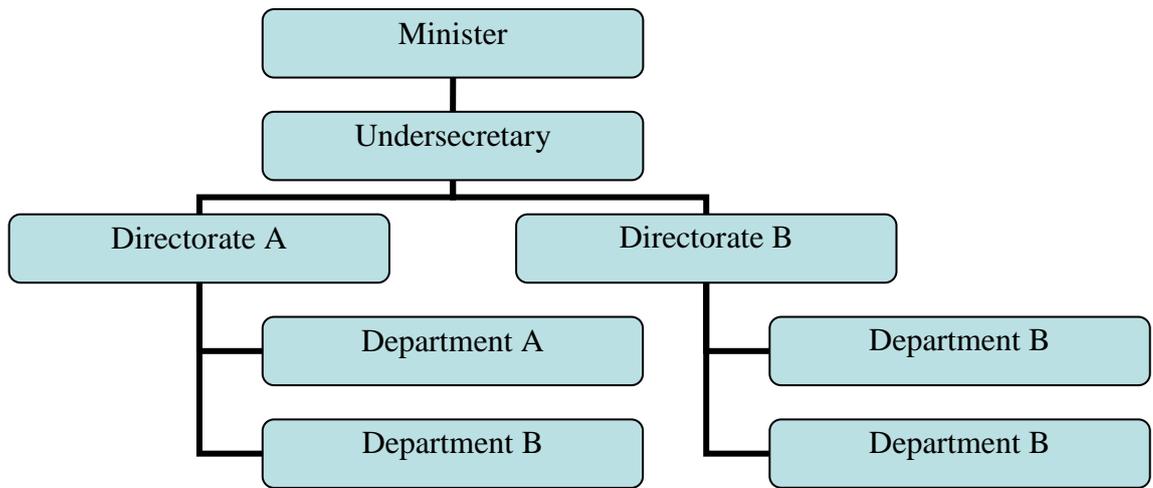


Figure 5.2: Structure of a large government institution

The majority of NGIs and DLGIs have a head office located in the Muscat Governorate. Also, each DLGI has small offices located in different geographical areas: *wilayats*. These offices are used to run the day-to-day activities. **Figure 5.3** shows the working scope of the government institutions. Normally, people have to visit the physical location.

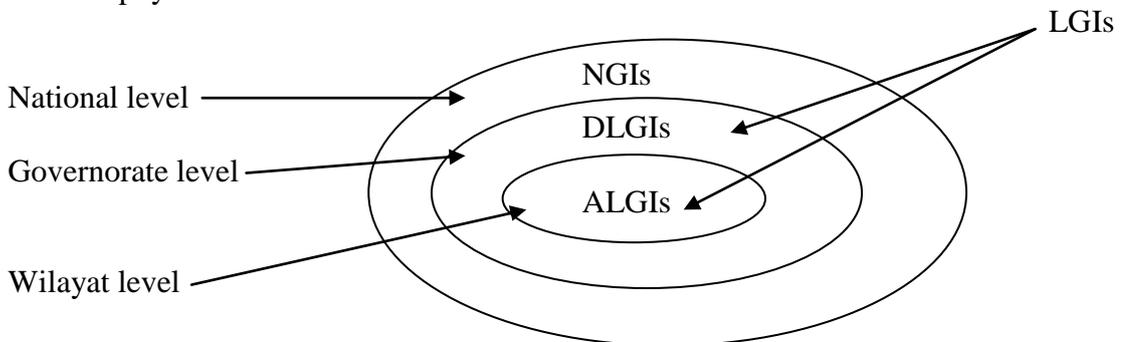


Figure 5.3: Working scope of Omani government organizations

On the subject of obtaining the budget for operation and development projects, Oman implements a centralized financial system. All DLGIs and NGIs obtain their financial support from central government. The annual government budget defines the annual expenditure for each DLGI, including the annual operational cost and the needed budget for development projects. In addition to the annual budget, DLGIs might request additional financial support for a new project. However, approval needs to be obtained from the authorized financial government institutions. For example, support for any new e-Government project not recorded in the annual approved plan has to be obtained from the authorized government institution.

In Oman, recruitment for all units of the administrative apparatus of the state is centralised. Consequently, recruitment decisions have to pass through the authorized government institution. Recently, the government has implemented the Omanisation policy in which recruitment priority is given to Omani citizens. Recent government statistics show that in 2010, the total number of DLGI employees was (4161) which represent 3.24 percent of all civil service employees (128,415) (MOCS, 2010). The same statistics illustrate that the majority of employees are male, who represent 96.7 percent of the total number, and only 3.4 percent of employees are from other nations (MOCS, 2010).

5.5 A first-cut Organization-level Framework

The key factors influencing the successful adoption of e-Government initiatives, creating government-citizen interaction programs and e-participation initiatives formed the basis of the first-cut Organization-level Framework. These factors are shown in Figure 5.4 to be *Strategic Issues, Resources, Organizational Culture, Top Management Support, Resistance to Change, and Lack of Commitment*.

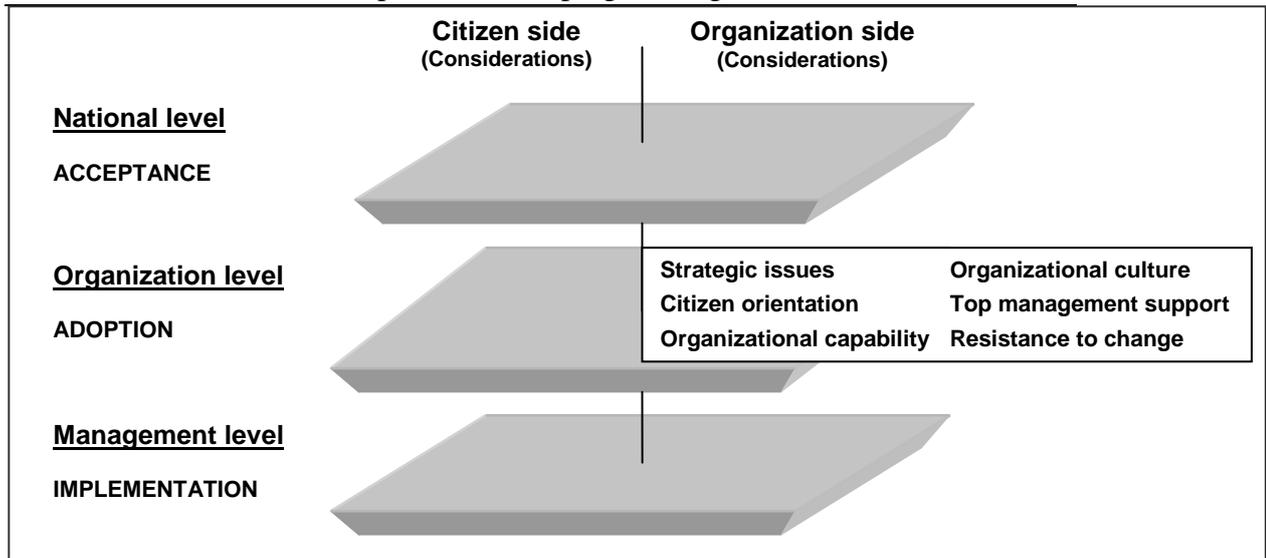


Figure 5.4: First-cut Organization-level Framework

5.5.1 Strategic issues

The strategic issues concern documented IT strategy in the government organization that states the organizational goals relating to the adoption of the technologies.

Many strategic issues were reported in the literature as critical factors for successful adoption of e-Government initiatives. According to Kanter *et al.* (1992), a strong organizational vision leads to the generation of clear organizational goals. From the government-citizen collaboration perspective, Miller and Williamson (2008) found that online engagement exercises with clear objectives have presented better outcomes than those with undefined goals. As noted earlier in Chapter 4, the government of Oman has a clear vision regarding transformation into the e-Government paradigm. This is expected to drive the adoption of e-Government initiatives via government institutions because transformation to a digital society is one of the government's priorities.

5.5.2 Citizen orientation

Citizen orientation is a strategic consideration issue concerned with the organization's attitude towards strengthening the relationship with community, by giving more attention to citizens' needs and expectations.

Citizen orientation was highlighted as a critical issue for improving the performance of government institutions (e.g., Irvin and Stansbury, 2004; Macintosh, 2003; Osborne and Gaebler, 1992; Schedler and Summermatter, 2007). As noted earlier, one of the main organizational features of the Omani government sector is limited citizen participation in government activities, which might inhibit the adoption and use of online social networking services. Thus, as a core principle for driving the adoption of online social networking services great emphasis needs to be placed on understanding citizen's needs.

5.5.3 Organizational capabilities

Organizational capabilities concern the availability of financial, technical and human resources relevant to the *adoption* of Web or other technology-based applications for achieving meaningful online dialogue with citizens.

Financial resources is an organizational capability issue that concerns the budget available for procuring and developing adequate levels of hardware and software, and training end-users on online social networking applications. Lack of central government funding is reported to be a major inhibitor in the adoption of e-Government (Heeks, 1999; Ho, 2002; Norris *et al.*, 2001). As noted earlier one of the main features of the Omani Local Government institutions (LGIs) is that their main financial resources come from central government, and can be influenced by political and economic factors. Consequently, financial government support is expected to drive adoption of e-Government initiatives in general.

Human resources is an organizational capability issue that concerns the total number of staff needed to develop and operate the online social networking

services; including the IT staff plus a management team for operating the online interactions. Human resources (moderators or facilitators) are also needed to moderate online discussions and otherwise achieve meaningful dialogue to a professional standard of deliberation (Andrews *et al.*, 2002; Bohm, 1996). A shortage of qualified IT staff is cited in the literature as one of the major challenges to the adoption of e-Government initiatives in developed and developing nations (Al-Nahas, 2006; Bwoma and Huang, 2003; Heeks, 1999; Ho, 2002; Moon, 2002; Norris *et al.*, 2001). McClure (2000) attributes the shortage of IT skills to the difficulty of attracting and retaining the right IT workforce because of high market demand in this field.

As noted earlier, one of the weaknesses of the Omani government sector is a shortage of qualified IT staff. This is expected to influence the adoption of online services in general and of social networking services specifically because such applications are a recent innovation. Also, management of the social networking services might consume a lot of time and human resource.

Technical resource is an organizational capability issue that concerns the availability of adequate organizational IT infrastructure (hardware and software) to integrate the online social networking services into the existing online services. Lack of adequate organizational IT infrastructure was reported in the literature as a key inhibitor for the adoption of e-Government initiatives. According to Tornatzky and Fleischer (1990), the fit of the available technology with the organization's existing technologies plays an important role in technology adoption.

The technical resource factor is thus expected to influence the adoption of online social networking services, either by inhibiting adoption because of a lack of adequate organizational IT infrastructure, or driving the adoption because the government institution has good IT infrastructure.

5.5.4 Organizational culture

The organizational characteristics concern structure, rules, policies and regulations that may need to be modified to cater for the adoption of online social networking services intended to interact and share of information with citizens. The organizational culture factor is generally expected to influence the adoption of online social networking tools by inhibiting organizational change.

5.5.5 Top management support

Top management support concerns the extent that top management provides needed resources, or wields authority, for the technical and non-technical features required to facilitate adoption of online social networking services to achieve meaningful dialogue with citizens. This is consistently reported in the literature to be a key driver and critical factor for the successful transformation into an e-Government paradigm (e.g., Ebrahim and Irani, 2005; Ho, 2002). The support of top management can enhance organizational awareness of new ways of conducting governmental activities, and can provide the necessary resources to facilitate the adoption of e-Government initiatives (Ho, 2002).

As noted earlier, one of the key economic strengths of the Omani government sector is the government providing financial support to facilitate the move of the Sultanate into a digital society; politically, good government support exists. In addition, because local government institutions are represented either directly or indirectly in the government body, and the decisions in the government institutions are taken from top to down, top management support is expected to drive the adoption of e-Government initiatives in general, including of online social networks.

5.5.6 Resistance to change

Resistance to change concerns the extent to which the decision to adopt online social networking services is obstructed or delayed or prevented; by officers or such employees as the adoption team, system designers, operators and resource

controllers. This factor is frequently reported as one of the major challenges to the adoption of IT innovation in government organizations (e.g., Heeks, 1999; Ho, 2002; Moon, 2002; Norris *et al.*, 2001).

A leader may lack commitment to act due to a perceived lack of organizational capability, such as a lack of specialist staff and other resources needed to implement Web-based services (Heeks, 1999; Ho, 2002; Moon, 2002; Norris *et al.*, 2001). The major reasons for this is the difficulty of attracting and retaining the right IT workforce because of market demand (McClure, 2000) and a high staff turnover from public sector organizations to a better paid private sector (Ebrahim and Irani, 2005). Thus, lack of commitment to act is expected to adversely influence the adoption and use of online social networking services.

As noted earlier, the main weaknesses of the Omani government sector are high technical illiteracy and low levels of awareness of technology benefits. Thus, resistance to change is expected to influence the adoption and use of online social networking services. For example, officers might resist due to a lack of ICT skills or they might perceive that the adoption of online social networking services will add extra workload and responsibility.

5.6 Refining the first-cut Organization-level framework (case findings)

The first-cut Organization-level Framework with its nine critical organizational influencers of the adoption and use of online social networking services derived from the literature, was refined in the light of case study findings. Case study data collection and analysis procedures were detailed in earlier Sections 3.6.5 and 3.6.6, respectively. The plan was to find any evidence to support/refute the literature findings and identify new factors not included. In broad terms, policymakers were interviewed and asked to express their views on adoption issues and to answer the following questions:

1. Describe the main organization-level issues that you would take into account when the organization is considering whether to offer a new social networking service to its stakeholders.
2. Which ones are (or would be) the main drivers, and which ones the main inhibitors?

As noted earlier, Oman has a single body of government to administer national and local state affairs. The government delivers its services to citizens via a range of government institutions, which vary in size, type and function. Three service organizations offering online social networking services were examined for this research. 'Organization A' operates in the general education sector, 'Organization B' in the higher education sector, and 'Organization C' operates in the municipality sector.

5.6.1 Case study findings (Organization A)

This section presents the key findings from the first case study. It presents demographic information about the organization and participants before presenting the key issues that arose concerning adoption and use of online services.

5.6.1.1 Case profile

Organization A operates in the general education sector and can be classified as a National Government Institution (NGI). It is one of the largest Omani government institutions (ministry level institutions). It consists of a head office located in the Muscat Governorate (MG) and small dependent units (directorates and departments) which are located in different local areas (governorates). Organization A administers one of the well-known social networking platforms in Oman, called the Educational Forum (EF) (<http://forum.moe.gov.om>). This was the country's first governmental communication and interaction platform.

As with other large Omani government institutions, Organization A has a hierarchal structure comprised of five levels: Minister, undersecretary, directorate, department and division. Authority distributed from top to bottom means that the

approval process of some projects must pass through every level. According to a recent government survey, Organization A employs the majority of Omani civil service workers; some 51 percent of civil service employees (55 % female, 45% male) of which some 27 percent work in MG (MOCS, 2010).

Organization A has a direct relationship with individuals and organizations. The main stakeholders include students, parents, other government institutions, suppliers, central government, schools, employees and teachers. It uses different methods to interact with its stakeholders; either in traditional ways such as formal and informal meetings, or by using ICT tools such as phones, mobiles, emails and social networking tools. Organization A uses a centralized approach to managing its e-Government systems. The Directorate-General of the Information Technology (DGIT) has the responsibility of overseeing the development, management and maintenance of all information systems and other technology in the organization.

5.6.1.2 Demographic information about the participants

Table 5.3 shows the key demographic information about the participants in Organization A. The sample comprised two senior managers, a social networking services operator and an IT specialist (one female, three male). They were mostly well-educated and relatively mature and experienced individuals of 5-20 years service. All participants reported that they have experience working with Web 2.0 applications. They also all use social networking services as either a user or an administrator. Two of them have used Blogs, Wikis and social networking site for their personal use. Hence, the use of social networking applications was not limited to a specific age group, educational level or gender.

Table 5.3: Demographic information

Characteristic	Respondent Code			
	OM.A.Pr1	OM.A.Pr2	OM.A.Pr3	OM.A.Pr4
Gender	Female	Male	Male	Male
Position	IT manager	IT specialist	Platform operator	IT CEO
Experience with Web 2.0 applications	User and administrator	User	User and administrator	User and administrator
Personal use of online social networking	Forums	Wikis, Blogs Social networking sites	Forums	Wikis, Blogs Forums, Social networking sites
Years worked in the organization	11-15	<1	1-5	11-15
Years in current position	1-5	1-5	1-5	6-10
Total years of experience	11-15	16-20	1-5	11-15
Highest level of educational achievement	Bachelor	Master	Diploma	Bachelor
Age	30-39	40-49	30-39	30-39

5.6.1.3 Main delivered online services

Organization A is one of the pioneers in the introduction and development of online services among Omani government institutions, which were first introduced in 1997 when the organization established a website to deliver information about the organization. Then, in 2002, a discussion forum was launched to communicate with stakeholders (students, parents and business partners). Later an e-portal provided a group of services to students, parents, employees and other business partners. Further development has included the introduction of SMS services to open a new channel to interact with stakeholders. Thus, today, Organization A delivers three different groups of online services: student services, parent services and employee services. These can be characterized into:

- Information services. This group of services includes one-way interaction. The organization pushes desired information to the stakeholders either through the portal or by SMS services. This type of service includes basic information about the organization such as its structure, responsibilities,

activities, news, rules, regulations, contact details, events and announcements. In addition, it includes general information about the education system. Some of this information is presented in document form.

- Interaction services. This group of services includes two-way interaction (via processing of forms). To obtain this type of service, users have to register. One example is registration of new students or transferring students from one school to another.
- Communication services. This group of services includes two-way interaction and communication. The organization uses different media to interact with stakeholders. The main interaction tools are email, discussion forum, and SMS, Students can send their inquiries via SMS or electronic mail, or can post them into the discussion forum and the organization will reply.

The organization web portal www.moe.gov.om contains the following main features:

- Search engine
- Uploading of documents
- Calendar
- Syndication feeds
- Links
- Poll
- FAQ
- Newsletter pane
- E-forms
- Discussion forum
- Podcasting (voice and video)

5.6.1.4 Primary reasons for offering online services

From the interviews, it was learned that the main reason that drove Organization A to offer online services was the rise of the Internet in Oman. The intention was to explore potential benefits for both the organization and its stakeholders. The IT senior manager supports this by saying,

“...the Internet services had appeared in Oman. Thus, the intention was to use the Internet in management and education...to benefit from the features of the Internet such as accessibility anywhere any time...we needed to implement this technology and benefit from it.”

5.6.1.5 Online services goals

In terms of the goals for offering an online service, Organization A has ambitious plans regarding transformation into the e-Government paradigm. These focus on automating a wide range of its activities in order to provide stakeholders with more convenient access to the organization’s information and services; improved service quality; increased transparency; and, greater opportunities for better understanding of stakeholder needs and expectations. The IT senior manager supports this by saying,

“...from the administrative perspective, we are looking to systemize the relationship between the organization and people...our next purpose which we are working to achieve in the short-term is transforming all our services into online. It is not only transforming the services from traditional ways to electronic, but reengineering all processes in the organization. We actually started this step two years ago”.

On the subject of strengthening the relationship with stakeholders, he stated that,

“...our organization is a services provision organization which provides all its services to the public. Thus, the public cannot be ignored. We would like the public to be our partner. This means, we need to make our goals clear and obvious to people. This step will help people to know our organization’s

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responsibilities and capabilities. Consequently, it will help them to expect our organization's response to their expectation and needs”.

5.6.1.6 Organizational factors preventing further online service development

The results reveal that there are many internal factors inhibiting Organization A from further developing its online services. The two main factors are resistance to change and lack of financial resources. The IT senior manager supports this by saying,

“...the main challenges were the infrastructure, awareness about the benefit of online services, availability of the Internet, feasibility of providing the Internet from the Internet services providers, availability of broadband services...the second point is resistance to change from the people in the organization... how to convince them about the importance of using the Internet.”

5.6.1.7 Impact of online services on citizens

The impact of online services on citizens was highlighted in the interviews. The results reveal that the online services had a positive impact; reducing both cost and time. According to the IT senior manager, the organization offers a package of services for parents, which they can obtain from anywhere. For example, instead of visiting the school, which involves expenditure of effort, money and time, parents can register their children and obtain their final scores online. Online services also impact interaction behaviors so that that in addition to face-to-face interactions, citizens use e-mail and a discussion forum to interact with the organization and with peers.

5.6.1.8 Types of online social networking services

Organization A administers one of the best-known social networking platforms in Oman, called the Educational Forum (EF) (<http://forum.moe.gov.om>). This was the country's first governmental communication and interaction platform. During the write-up of this thesis, the organization has also subscribed to some well-known social networking sites, including Facebook, YouTube, and Twitter.

Organization A created EF to enhance interactions between its stakeholders by enabling those with an interest in the educational sector to discuss a number of related issues, and to respond to public inquiries, and exchange ideas about best practice among peers. It consisted of two main forums: internal and external. The internal forum was only used by the management team to discuss management issues, whereas the external forum was opened to the public to enable them to share their interests among peers and with the organization. The EF also contained syndication feeds, a private message system, poll, Blogs and advertising.

Each forum consisted of a tree-like directory structure and was divided into sub-forums for the relevant directorates/departments or offline communities. For instance, the Muscat Governorate sub-forum was created to enhance the interaction between the Directorate General of Education-Muscat and its stakeholders and was operated by the Directorate General's Office. Sub-forums were divided for the relevant discussions. For instance, the Muscat Governorate sub-forum was divided into one that presented and discussed events and daily activities in local schools while another was specified for general discussion.

Analysis of EF use indicates that the main users of the platform are students and their parents, schoolteachers, administrators and other employees of the organization. Findings indicate that the main use of the platform can be summarized as follows:

- Sharing information/thoughts between forum members
- Solving problems
- Informing people
- Answering members' questions
- Awareness\education
- Learning
- Listening to concerns
- Training

- Marketing
- Deliberating
- Advertising

5.6.1.9 Main reasons for offering OSN services

In short, adoption of the online social networking application by Organization A was driven by reasons of effectiveness and efficiency. The organization had traditionally used conventional means to communicate with stakeholders such as by telephone, newspapers, television and face-to-face methods. It was apparent that the advent of the Internet with its unique features provided the possibility to interact with a wide range of people at low cost. The IT senior manager stated that,

“...we usually disseminate our information by the newspaper; however, how many people read the newspaper and if they read are they reading our topics? Our intention is to use the forum to communicate with people in order to convince them about our projects and ideas. Once we achieve this, it will help us to save a lot in the investment in the awareness and education programs. So we would like to reach a wide range of people by using different channels.”

Similarly, another participant stated that,

“...the organization is one of the biggest public organizations and has many offices in different regions and governorates. Because of geographical reasons, there is a limited communication between the head office and the other offices. Thus, the discussion forum enables the stakeholders to easily raise their concerns and needs which quickly reach to the top management.”

Another reason for offering online social networking services was the wide acceptance of the Internet and the interaction applications. Thus, the organization would like to utilize this opportunity to enhance communication with citizens to increase understanding. The Senior IT manager supports this by saying,

“...the importance of the Internet in Oman is increasing. People start to feel its value and importance. Thus access to the Internet is increasing...our concern is to market our ideas and projects... to understand people needs and expectations... to collect feedback which can be used to improve the performance.”

5.6.1.10 The degree of acceptance of OSN services by stakeholders

In Organization A, the level of acceptance of the new social networking services by stakeholders varied. From the organization’s perspective, some officers had initially resisted the change; some of them did not accept the idea of interactions with citizens online because of risk issues. Others thought the new services would add additional load to their work. The IT senior manager supports this by saying, *“...at the beginning there was high resistance from the employees and officers. This is because some of them were not convinced about the benefit from using the social networking. Others talk about the risk of raising issues which could be sensitive to them or the organization and other were not accepting of the new idea.”*

These challenges were addressed by providing training and awareness programs and obtaining support from the top management. The IT senior manager supports this by saying,

“...there was good support from top management which forced all departments to determine to follow what is published about their department. Also, the employees were trained to use the system.”

From the citizen side, the degree of acceptance of the online social networking services can be measured from the number of members registered in the forum, the rate at which topics are raised and number of comments posted on the raised topics. The results show that there was a high degree of acceptance of the forum. The results show that the statistics for this platform rapidly increased between 2009 and 2011, **Table 5.4**. It generated a large number of registrants and repeat visitors.

Table 5.4: Forum use March 2009-December 2011

	March 2009	December 2011	Increase
Registered members	58,240	142,609	154%
Posted topics	123,376	333,697	170%
Posted comments	1,201,463	3,699,815	208%

The Senior IT manager attributes the success of the platform to the large numbers of stakeholders (students and their parents). When asked about the degree of acceptance of the offered online services he replied,

“... It might be we are lucky because we have a large number of stakeholders and this type of application depends on the public. If you have, for example, a small number of stakeholders there will be success but limited. Our stakeholders are accepting this type of communicating application.”

5.6.1.11 Advantages and disadvantages of offering OSN services

The adoption of online social networking services created significant advantages to Organization A. In terms of administration, the services have enhanced communication between the organization and the stakeholders and it provides another communication and interaction channel with the public. This led to increased trust and satisfaction that facilitated sharing information between the organization and its stakeholders. The Senior IT manager supports this by saying,

“...I know we have a more effective communication channel. Some people prefer to use the discussion forum to submit their needs to the officers instead of using traditional methods. This is because it is faster... the peoples’ trust and satisfaction with the organization have increased...the organization has used the discussion forum to identify peoples’ opinions regarding some projects before it implemented them. The collected feedback has been used to modify the project”

Social networking services have also enhanced the educational process. The Senior IT manager supports this by saying,

“...we are able to link the discussion forum with other educational media. We have used the discussion forum to enable students to post their questions to online

class where the program presenter reads the questions and answers directly... the discussion forum is another educational tool.”

The discussion forum has also facilitated students to build relationships and organize social activities. For example, the Senior IT manager commented,

“...the discussion forums enable direct communication between the members of the platform. The members meet and organize different events. For example, they organized events about children, about women. Also women have organized summer activities.”

The positive outcomes of the adoption of online social networking services have encouraged the organization to focus on social media in order to support the educational process. The Senior IT manager supports this by saying,

“...I would like to direct the use of discussion forum more toward educational use.”

Although the adoption of online social networking services has resulted in significant advantages for Organization A, disadvantages were reported. One of the main disadvantages was unsocial behavior by some participants. One of the form operators supports this by saying,

“...some members’ behavior is unacceptable. They used the forum to criticize officers instead of criticizing officers’ work.”

Some participants also tend to go into several directions as people question each other or post comments which are irrelevant to the discussed topic. Hence a disadvantage of the platform was the inability to control participation because there was no way to deal with participants who behaved in ways which were not consistent with platform regulations. The platform operator supports this by saying,

“...you are trying to build something whereas other members work to destroy it. In some cases the management team reached the point of dismissing some members from the platform.”

In response, the organization increased the number of mediators to increase control of the platform. In addition, it increased the frequency of awareness and education announcements in order to remind participants about the need to follow the participation rules.

5.6.1.12 Consideration issues for successful adoption of OSN services

Many issues need to be considered for successful adoption of online social networking services as reported by Organization A. One officer emphasized the importance of dealing with human resistance and organizational capabilities. He stated that these issues were the main challenges to the adoption of e-Government initiatives as employees might resist change due to lack of skill, being IT-illiterate, or fearing a risk of being overloaded with work. He declared that these issues can be overcome by providing training program and seeking top management support.

In terms of organizational capability, the officer stated that officers might resist because of a lack of resources such as human or financial resources. He added that the lack of skillful IT staff is one of the major challenges for public organizations. He suggested that the adoption proposal must clearly state the adoption objectives, and advantages and disadvantages plus the major technical, financial and human requirements for successful adoption. If not, the project might be terminated or postponed.

Another consideration is whether to outsource the online social networking services. The Senior IT manager supporting this by saying,

“...we are trying to use sites that offer social networking services, such as YouTube, but with certain rules that suit our needs. This step will help us to overcome the management problems.”

Thus, another issue needing consideration is to have a team that has good knowledge of Web 2.0 applications and technologies. The Senior IT manager supports this by saying

“...we are working to have a team which has good knowledge about all Web 2.0 applications and the major sites that offer this type of service.”

The forum operators and IT officers attributed success of any social networking services to the control of the interaction and communication. For instance, one officer stated that the success of any discussion depends on the quality of the moderating team.

5.6.1.13 Case summary

This section has reported the experience of the first case of an Omani government institution that has adopted and used online social networking services. The interviews revealed that Organization A is one of the leading government institutions in the adoption of online services in general and social networking services specifically.

In summary the adoption of online services was mainly driven by Internet developments, and the organization intended to harness the unique features of the Internet to provide more convenient access to the organization's information and services,. The aim was to improve the quality of the services, to increase transparency and to provide greater opportunities for understanding stakeholder needs and expectations. The significant advantages obtained were enhanced communication, interaction and trust between the organization and its stakeholders. The major disadvantage reported was unsocial behavior by some participants. The interviews also revealed several issues that should be considered

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for successful adoption and use of online social networking services: chiefly, resistance to change, organizational capabilities, and management of the online service.

5.6.2 Case study findings (Organization B)

This section presents the key findings from the second case study. It presents demographic information about the organization and participants before presenting the key issues that arose concerning adoption and use of online services.

5.6.2.1 Case profile

Organization B is a National Government Institution (NGI) ministry-level organization. It consists of several directorates, departments and divisions located in the same region of MG. This research focuses on a single directorate referred to here as 'Unit A'. Again, Organization B has a hierarchal structure comprised of five levels. Unit A itself is comprised of up to three levels: directorate, department and division. Each level has a specific authority, which is defined by the higher authority.

Organization B is considered a medium sized civil service organization with some 461 employees (35% female, 65% male) working in the head office. This number represents less than one percent of total Omani civil service employees (MOCS, 2010). Unit A itself has around 37 employees (46% female, 54% male). The core business of Organization B includes providing higher educational services. Its main functions include supervising higher educational institutions, administering educational scholarships, and organizing admissions to higher educational institutions. Unit A has the main function of regulating the admission of general certificate students to higher education institutions according to their wishes, attained grades, and admission terms specified by the aforementioned institutions. Organization B interacts with a varied group of stakeholders, which in the main include students, parents, other government institutions, suppliers, Head Office,

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 universities and colleges and employers. Information flows from the outside to the organization through various channels that are mainly traditional, but also include phone, electronic mail and social networking tools.

6.6.3.1 Demographic information about the participants

Table 5.5 shows the key demographic information about the participants in Organization B.

Table 5.5: Demographic information

Characteristic	Respondent Code			
	OM.B.Pr5	OM.B.Pr6	OM.B.Pr7	OM.B.Pr8
Gender	Male	Male	Male	Female
Position	IT manager	IT specialist	CEO	Vice CEO
Experience with Web 2.0 applications	User and administrator	User	User and administrator	User and administrator
Personal use of online social networking	Forums	Forums, Social networking sites	Forums, Social networking sites	-
Years worked in the organization	1-5	11-15	1-5	>20
Years in current position	1-5	1-5	1-5	1-5
Total years of experience	1-5	>20	>20	>20
Highest level of educational achievement	Masters	PhD	PhD	Masters
Age	20-29	>59	40-49	30-39

The sample comprised a CEO, a vice-CEO, an IT manager and an IT specialist (one female, three male). They were well educated and three of the four were relatively mature and experienced individuals of 20+ years of service. All participants reported that they have experience working with Web 2.0 applications. The majority have used social networking services as either a user or an administrator. Hence, the use of social networking applications was not limited to a specific age group, educational level or gender.

5.6.2.2 Main delivered online services

Organization B uses a decentralized approach to information system (IS) management, hence, Unit A has its own IS department. The results reveal that Unit A introduced online services in 2006 and today the web portal www.heac.gov.om delivers various online services via Internet and mobile devices. These can be grouped into information services, interaction services, and communication services.

Information services offer basic information about admissions in higher educational institutions. Unit A's website contains information about, for example, the structure, contacts, events, activities and news. In addition, it provides information about local higher educational institutions and includes information about admissions processes, and news updates on available government scholarships.

The interaction service involves two-way interactions in order to process forms. For example, the e-registration service enables students to register at any local higher educational institution online. Students can choose to use the website or they can use the SMS system to register.

The communication services involve both one-way and two-way interactions. Electronic mail and SMS is used to inform students, for example to update students with news or events. Two-way interactions enable students to transact with the organization, either via SMS, electronic mail or forum.

The organization website contains the following main features:

- Student services centre
- Data exchange portal
- SMS and video system
- Statistics system

- Graduate survey system
- Important remarks
- Downloads
- Announcements
- News
- Events calendar
- Search engine
- Advertisement panel
- Map

5.6.2.3 Primary reasons for offering online services

From the interviews, it was learned that the main reasons Unit A offers online services (within Organization B) is to facilitate student applications to universities and colleges and to overcome the challenges of traditional admission processes. These include lack of accurate statistical data about the number of accepted students in all institutions; lack of information about the available majors in different subjects; and lack of transparency about the admission process. For example, the IT manager supports this by saying,

“... before the online services students had to visit the physical place of the institutions to complete the admission processes...the old admission processes take a long time so the main goal was to facilitate the admission processes by using different channels...Today students can register with the services from anywhere and anytime by using either the Internet or mobile channels...also the online services increase the transparency and opportunity and accountability.”

5.6.2.4 Online services goals

In terms of the goals for offering online services, Unit A of Organization B has plans to harness technology to facilitate admissions into university and colleges, and to increase transparency and equality. For instance, the senior manager stated that,

“...the higher education admission centre was created to facilitate the application for higher educational institutions by using the technology. The technology is available in the country... so why is it not used to facilitate the application? Also another main goal for creating the centre is that the ministry is seeking to achieve transparency and equality in the distribution of scholarships for students.”

He added,

“When the Asia crisis happened, the access speed to the Internet went down. That problem has driven the centre to activate a short message service (SMS) so that students can use different electronic channels to apply to the colleges and universities from anywhere.”

5.6.2.5 Organizational factors preventing further online service development

Although Unit A of Organization B has been able to overcome the majority of the problems it faced during the development of its online services, more work is needed in terms of providing support to IT staff. This problem is critical and needs to be resolved. For instance, one participant stated,

“...there is only one problem. The working environment of the IT workforce in private sector is better than public sector. ... Here there is limited support for IT employees. ...The salary is higher in the private sector... Here there are limited training opportunities.”

He expected this problem would increase unless the government finds suitable solutions to attract IT workers to work in government institutions.

5.6.2.6 Impact of online services on citizens

The impact of online services was highlighted in the interviews. All Unit A participants agreed that offering online services has helped students to easily apply for college and university places. In addition, quality and transparency has improved and there have been savings in personnel costs. Finally, the online

services have motivated the acceptance of other online services. The following statements are representative of comments made by the IT manager and the IT specialist,

“[Previously] some students had to travel thousands of kilometers to apply for the offered scholarships. Now they can apply online from their homes by using the Internet or SMS services. Also, some students had to visit several institutions in order to get accepted but now there is centralization in the admission process that has saved time and money.”

“...the system offer features that enable students to learn about the competition grades and the minimum competition grades for each program that they competed in. Also, today all scholarships are offered via the admission centre.”

5.6.2.7 Types of online social networking services

Unit A maintains a communication and interaction platform (<http://heac1.gov.om>). This (forum) platform was introduced in 2006 and was divided into three discussion forums. The first discussion forum was created for internal communication. Rather than using paper, the forum is used to share information amongst different departments. The second forum was developed to enhance the communication and interaction between the unit and higher educational institutions. It has sub-forums for the relevant higher educational institutions. The third forum was an open-ended discussion forum created to enable students to interact and post their concerns either to the unit or to the higher educational institutions. It has sub-forums for the relevant departments and higher educational institutions.

Overall, the Unit A platform in Organization B has been used for:

- Sharing information/thoughts between forum members
- Disseminating announcements/news/ informing people
- Answering questions
- Offering guidance
- Increasing awareness\education

- Learning
- Listening to concerns

5.6.2.8 Main reasons for offering OSN services

The adoption of online social networking applications via Unit A was driven by the need to enhance communications and interactions between this unit and its stakeholders. It was mainly created to deal with the huge numbers of inquiries. As the IT manager stated,

“...during the admission period we would open a hotline to answer people’s inquiries. However, we weren’t able to deal with all in-coming calls and we found that there were repetitions of inquiries. So we came up with the idea of adopting a discussion forum to help to overcome this problem.”

5.6.2.9 The degree of acceptance of OSN services by stakeholders

The level of acceptance of the new social networking services by stakeholders varied. Some employees appeared resistant to using them because they saw the discussion forum would add extra work. On the other hand, others advocated adoption because they thought it would help to increase understanding about students’ needs and expectations. The IT manager described the degree of acceptance by saying,

“...the degree of discussion forum acceptance was based on the employee’s view about the advantages and disadvantages to them of the discussion forum. Some employees saw it was difficult to deal with different communication channels at the same time. However, others thought it would add value to the organization.”

From the citizen side, the degree of acceptance of the online social networking services can be measured from the number of members registered in the forum, the rate at which topics are raised, and number of comments posted on the raised topics. The results show that there was a high degree of acceptance of the forum; particularly in the use of a new platform rapidly that has rapidly increased between 2010 and 2011, **Table 5.6**.

Table 5.6: Forum use January 2010-December 2011

	January 2010	December 2011
Registered members	0	3,429
Posted topics	0	2,783
Posted comments	0	37,004

5.6.2.10 Advantages and disadvantages of offering OSN services

The adoption of online social networking services created significant advantages for Unit A within Organization B. The main advantages include increased understanding, increased satisfaction, improved delivery of services, and increased efficiency and effectiveness. For instance, the IT senior manager stated that,

“I think the use of the discussion forum has added many benefits to the centre. It enables the centre to know the students’ viewpoints about the centre and the higher educational institutions. These things we did not know before. ...The discussion forum has provided the student the opportunity to clarify their thoughts and obtain quick answers to their inquiries. Also, the student’s suggestions and comments have been used to improve the performance of the centre. For example, the number of students’ complaints about the delivered services has gone down from more than 3000 in 2006 to only 48 this year.”

Furthermore, the IT manager stated,

“...the discussion forum enables the centre to post the most important questions. This action has helped the centre to quickly answer student questions and reduce the repetition of questions.”

Some disadvantages were also reported. One of the main disadvantages was unsocial behavior of some participants. The IT manager supports this by stating that,

“...some members use the discussion forum to send mail and picture to others, which are not relevant to the discussed topics... some members used it to critique in rude ways such as defaming people.”

Similarly, the IT specialist of the organization when he was asked about the main disadvantages commented that,

“...some students use it to make offensive comments about what others had said.”

5.6.2.11 Consideration issues for successful adoption of OSN services

Participants in Organization B reported several issues needing to be considered for successful adoption of online social networking services. One of the critical issues was the need to clearly define and justify the objectives. The CEO of the organization supports this by saying that,

“...the need is to clearly define the objectives needing to be achieved, and present and justify these goals to the officers who have the authority to make the adoption decision. Also, there is a need to define the target group.”

Top management support is also essential. The IT senior manager supports this by saying that,

“...project success requires getting support from all actors. For example, it needs to get financial and technical support.”

Availability of qualified human resource is another critical issue because the presence of enthusiastic staff drives the adoption. In addition, obtaining meaningful dialogue requires having qualified moderators or facilitators. The Senior IT manager supports this by saying that,

“...the successful adoption of any innovation needs to have enthusiastic and qualified staff...the success of the discussions depend on the moderators who should have good communication skills.”

A further issue is resistance to change. This resistance could be result of lack of knowledge. The IT specialist of the organization supports this by saying that,

“...at the beginning there will be resistance to change which can be overcome by explaining and justifying the main advantages and benefits of the new idea and the limitations of the old system.”

Acceptance from the citizen side is essential and people usually accept a new idea when they perceive it is important for them. The Senior IT manager supports this by saying that,

“...the first issue to consider is there should be an acceptance of the use of social networking services. If there is no acceptance, what will be the benefits?... people normally accept a new idea when they feel they need it...you need to motivate them to accept the new idea.”

The final issue reported is managing the platform. Meaningful dialogue can be achieved by having a clear system of how to deal with participant inputs. In addition, it needs to have a sufficient and qualified number of moderators or facilitators to operate the communication and interaction. For example, the IT senior manager supports this by saying that,

“...I think there should be a mechanism to deal with peoples’ suggestions and comments... there should be active dialogue between the participants and the organization... the management team has to be qualified.”

5.6.2.12 Case summary

This section has reported the experience of the second case of an Omani government institution that had adopted and used of online social networking services. The interview revealed that Organization B is another leading government institution in the adoption of online services in general and social networking services specifically.

In summary, the adoption of online services was mainly driven by Internet developments and the need to harness it to overcome the challenges in registering students for higher educational institutions in Oman. The adoption of online social networking services created significant advantages for Organization B such as enhancing communication between the organization and its stakeholders. It has provided another communication and interaction channel with students. However, a major disadvantage was unsocial behavior by some participants. The interviews also revealed several issues that need to be considered for successful adoption and use of online social networking services; chiefly the need to define the target objectives and target group, resistance to change, provision of sufficient qualified human resources for managing the communication and the interaction, and motivating people to accept social networking services.

5.6.3 Case study findings (Organization C)

This section presents the key findings from the third case study. It presents demographic information about the organization and participants before presenting the key issues that arose concerning adoption and use of online services.

5.6.3.1 Case profile

Unlike the first two cases, Organization C is an example of a Local Government Institution (LGI); a second level government entity. It consists of a legislative body and an executive. The executive body consists of several directorates, departments and divisions. Some of the directorates are located in the head office in the Muscat Governorate (MG) as well as in different local areas.

Organization C is also a large civil services organization. The organization employs around six thousand staff (2.5% female, 97.5% male) (MM, 2009). The main stakeholders are central government, government institutions, citizens, suppliers, private organizations and employees. These stakeholders predominantly interact with Organization C via traditional means, or by using the ICT tools such

as phones, mobiles, emails and social networking tools. The main channels include traditional direct interactions between the organization and its stakeholders or via local representatives of the Municipality Council.

Similar to Organization A, this organization uses a centralized approach to manage its e-Government systems. The Department of Information Systems has the responsibility of overseeing the development, management and maintenance of all information systems and other technology in the organization.

5.6.3.2 Demographic information about the participants

Table 5.7 shows the key demographic information about the participants in Organization C. The sample comprised two senior managers: an IT Division Head and an IT Chief Executive, plus an IT specialist. All were male and well educated. The senior managers are also relatively mature and experienced individuals (30-39 years of age), with 10-15 years of service.

Table 5.7: Demographic information

Characteristic	Respondent Code		
	OM.C.Pr9	OM.C.Pr10	OM.C.Pr11
Gender	Male	Male	Male
Position	IT head division Platform operator	IT CEO	IT specialist
Experience with Web 2.0 applications	User and administrator	User administrator	User
Personal use of online social networking	Forums	Forums	Forums, social networking sites
Years worked in the organization	6-10	1-5	1-5
Years in current position	6-10	1-5	1-5
Total years of experience	6-10	11-15	1-5
Highest level of educational achievement	Bachelors	Master	Bachelor
Age	30-39	30-39	20-29

The IT specialist is younger and has less experience and service. All participants reported that they have experience working with Web 2.0 applications. They also all use social networking services as either a user or an administrator. Hence, the use of social networking applications was not limited to a specific age group or educational level.

5.6.3.3 Main delivered online services

Similar to Organization A, this government organization is one of the pioneers in the development of online services. Organization C originally introduced its online services in the 1990s when the Internet first entered the country, and these were renewed in 2008. Thus, today Organization C delivers three different groups of online services that can be characterized as:

- Information services. This group of services includes one-way interaction. The organization pushes basic information about the organization, including its responsibilities, activities, events, structure, contact details and regulations and laws. Also provided is historical information about the development of the municipality services in Muscat Governorate and basic information about the main sightseeing areas
- Interaction services. This group of services includes two-way interaction (processing of forms) and online transactions. To obtain this type of service, users have to register. Examples include provision of e-parking and e-building permits to its stakeholders via a Web portal and SMS channel.
- Communication services. This group of services covers all two-way interaction and communication services with stakeholder via e-mail, SMS and forums.

The organization web portal www.mm.gov.om contains the followings main features:

- Search engine
- Uploading documents feature

- E-forms
- News channel
- Poll
- Links
- Announcements
- FAQ
- Maps link
- Bilingual link

5.6.3.4 Primary reasons for offering the online services

Online services were primarily offered by Organization C to increase accessibility, since in Oman the traditional offline municipality services are only available to citizens during normal work hours (7:30am.-2:30pm). In addition, almost every service is delivered from a single physical location in each city, meaning that some people are unable to attend due to having limited time and/or a large travel distance.

5.6.3.5 Goals of the online service

In terms of the goals for offering an online service, Organization C has ambitious plan to improve its performance by using the information and communication technologies. The organization intends to enable people to obtain any service from anywhere and at any time. Its plan focuses on automating a wide range of activities to provide people with: more convenient access to information and services, improved quality of services, increased transparency, and greater opportunities to understand stakeholder needs and expectations. A senior manager supports this by saying,

“...one of our target goals is to enable people to obtain our services at any time and from anywhere and by any available tool.”

5.6.3.6 Organizational factors preventing further online service development

The results reveal that there are many inhibitors influencing further development of online services. A major challenge is the lack of qualified staff. For instance, when asked about the main factor preventing the organization from further developing its online services, one Senior IT manager succinctly stated,

“...the lack of qualified staff who are able to operate and use the systems.”

Another Senior IT manager stated that,

“...I can tell you that the majority of government institutions would like to develop their online services. However, most of these organizations are suffering from the challenges of a lack of staff to manage and develop the online services. By lack of staff I mean lack of number of staff and lack of skills as well, because sometimes you have the staff but they don't have the skills to deal with the systems.”

5.6.3.7 Impact of online services on citizens

The effect of online services on citizens was highlighted in the interviews. Every participant agreed that offering 24/7 online services has improved the accessibility and convenience of organizational information and services to citizens and has brought savings to customers. The following statement is representative of comments made by the IT Divisional Head,

“...the online services bring savings to the customer, especially in personnel costs and raise the quality of municipality services. For example, people can renew their house contract online instead of visiting the local municipal office. Also they can send an SMS to reserve a car parking space.”

5.6.3.8 Type of online social networking services

The social networking platform (forum) in Organization C was first launched in 2002 and created and managed by the IT department. No user registration is required. The forum consists of many sub forums that are open to the public. Findings indicate that the main use of the platform can be summarized as follows:

- Sharing information, thoughts and opinions

- Solving problems
- Answering questions

During the write-up of this thesis the organization has also recently subscribed to some well-known social networking sites, including Facebook, YouTube, and Twitter.

5.6.3.9 Main reasons for offering online social networking services

Organization C was very interested in securing people's satisfaction with delivered services. Thus, adoption of online social networking services was driven by the desire to provide different communication channels for people to deliver their comments and suggestions to the organization. The IT Divisional Head stated,

"...there is a trend to open communication channels in order to enable people to deliver their voices, comments and suggestions. This is because our institution is a government service institution. Thus, it is importance to know our customers' opinions regarding the delivered service... their opinions can be used as an indicator to evaluate our delivered services."

5.6.3.10 The degree of acceptance of OSN services by stakeholders

In Organization C, the level of acceptance of the new social networking services by stakeholders varied. Some employees liked it because they thought it would enhance communication, would increase understanding about real needs and would make it possible to evaluate satisfaction with the delivered services. Others saw that the discussion forum would add extra workload and they appeared resistant. The IT Divisional Head described the acceptance issue by saying,

"...the degree of acceptance of the discussion forum was based on employee views about the advantages and disadvantages of the discussion forum. Some employees saw it was difficult to deal with different communication channels at the same time. However, other thought it would add value to the organization."

From the citizen side, because the forum can be accessed without registration, the degree of acceptance of the online social networking services can only be measured from the number of visitors and the number of raised topics and rate of posted comments on the raised topics. Observations revealed that there was to some extent an acceptance of use of the forum.

5.6.3.11 Advantages and disadvantages of offering OSN services

The adoption of online social networking services created some significant advantages for Organization C, the main one being increased understanding about citizen needs. For instance, the IT Divisional Head stated that,

“Although there is a limited participation, some inputs are useful.... we have sent some inputs to top management.”

The main disadvantage was misuse of the discussion forum. The IT Divisional Head reported,

“...the main problem is some users see the things from their viewpoints only, which are not necessarily the best.”

5.6.3.12 Consideration issues for successful adoption of OSN services

Participants in Organization C reported several issues that need to be considered for successful adoption of online social networking services. One was the need to clearly define and justify OSN objectives and scope. The IT senior manager of the organization stated, *“...the success of adopting new ideas depends on many issues such as there being an initial acceptance of the new idea, the clarity of the idea, and defining the target group.”*

Also, raised was the possible need to redesign feedback process. The IT Divisional Head stated that,

“...one of the important issues is the acceptance of the idea by the decision-makers. Are they ready to listen to others’ opinions? Another issue is the organizational need to change its feedback process.”

Another organizational consideration is the required technical and non-technical resources. Online social networking applications, such as Blogs, forums and Wikis allow participants to contribute with immediate feedback. Thus, the organization must have adequate infrastructure. The IT Divisional Head stated, *“...one of the key issues is support of the technical requirement which includes the hardware and the software.”*

Hence, the organization needs qualified staff to implement the project and operate the dialogue. The IT senior manager stated that,

“...you need to have qualified staff to implement the idea. Also, you need to have sufficient numbers to control the interactions.”

The organization also needs to have the finances to implement the application and operate interactions. The IT Divisional Head stressed,

“...you need to have financial support.”

Top management support is also essential because the adoption of online social networking might require changing the organizational structure or developing new rules or policies. Thus, availability of top management support will help to drive the implementation of the system. The IT Divisional Head concurred by saying,

“...top management support has created a positive influence on deriving the adoption. When they accept the idea, they drive it.”

A further issue is resistance to change as officers might resist the adoption because of lack of financial or human resources. On the other hand, users might resist because of a lack of technical skills, or to avoid extra work. The IT specialist supports this by saying that,

“...one of the key issues is resistance to change. The nature of the human being is to resist change.”

5.6.3.13 Case summary

This section has reported the experience of the third case of an Omani government that has adopted and used online social networking services. The interviews revealed that Organization C is a leading government institution in the adoption of online services in general and social networking services specifically.

In summary issues of stakeholder accessibility mainly drove the adoption of online services. The organization set out to harness features of the Internet to provide stakeholders with convenient access to information and services that provide greater opportunities to participate in the democratic process. Adopting online social networking services has created significant advantages to Organization C, including enhanced communication with its stakeholders, and has provided additional interaction channels. The major disadvantage was unsocial behavior of some participants. The interviews also revealed several issues that should be considered for successful adoption and use of online social networking services: chiefly, strategy (clearly defined objectives and scope of proposed OSN services), organizational capabilities (sufficient qualified human resources for managing communication), and top management support to provide finance and help overcome resistance to change.

5.6.4 Cross case analysis

This section presents the similarities and differences between the three cases. These are based on the findings from interviews and document reviews that provided understanding of the main key issues for the successful adoption and use of social networking services.

5.6.4.1 Demographic comparison

As shown in **Table 5.8**, the sample of participants chosen from the three case organizations comprised different genders, ages, and attained educational levels. Only Organization C had exclusively male interviewees. The use of social networking applications was not limited to a specific group, educational level or

gender and the most commonly used social networking application was the discussion forum.

Table 5.8: Participant comparison

Case	Code	Demographics			Personal use of social networking applications			
		Gender	Age	Education	Wiki	Blogs	Forums	OSN
A	Pr1	Female	30-39	Bachelor			√	
	Pr2	Male	40-49	Masters	√	√		√
	Pr3	Male	30-39	Diploma			√	
	Pr4	Male	30-39	Bachelor	√	√	√	√
B	Pr5	Male	20-29	Masters			√	
	Pr6	Male	>59	PhD			√	√
	Pr7	Male	40-49	PhD			√	√
	Pr8	Female	30-39	Masters				
C	Pr9	Male	30-39	Bachelor			√	
	Pr10	Male	30-39	Masters			√	
	Pr11	Male	20-29	Bachelor			√	√

5.6.4.2 Case profiles

As shown in **Table 5.9**, Organization A and Organization B are both examples of a National Government Institution (NGI) linked directly to central government. In contrast, Organization C is a Local Government Institution (LGI) affiliated to NGIs.

All the case organizations have a hierarchal structure and their leaders are appointed and have final authority in their organization. All provide a range of services and use different methods to interact with their stakeholders. In short, adoption of online social networking services was not influenced by organization size or type but by the decision-maker having final authority.

Table 5.9: Key characteristics of the three case organizations

Characteristic	Organization		
	A	B	C
Type	NGI	NGI	LGI
Operational area	National level	National level	Governorate level
Structure	Hierarchy	Hierarchy	Hierarchy
Authority	High level	High level	Medium
Administration	Independent	Independent	Independent
Relation to central government	Direct	Direct	Indirect
Financial	Independent	Independent	Independent
Recruitment	Centralized	Centralized	Decentralized
Size	Large	Large	Medium
Offer social networking services	Yes	Yes	Yes

5.6.4.3 Adoption and use of online services

The organizations offer similar online services, which provide information, interaction, and communication services. The main information services include, for example, basic details about the organization and the sector. In terms of interaction services, each organization is unique as befits their own particular functions and stakeholders. Organization A provides a list of interaction services for students, parents and employees. Likewise, Organization B provides e-admission services for students and institutions. Organization C provides a list of interaction services for individuals and organizations. In terms of communication, all organizations interact with their stakeholders via email, SMS and forums and they offer stakeholders a Web portal and mobile device channels.

5.6.4.4 Adoption and use of online social networking services

Organizations A and C are among the first Omani government institutions to adopt online social networking services, some four years ahead of Organization B. Organization A and Organization B made use of a ready-made application (discussion forum) to communicate and interact with people, whereas Organization C built its own application. Analysis of OSN services adoption

across the three case organizations reveals that they provide the same types of service, **Table 5.10**.

Table 5.10: Key adoption and use OSN characteristics

Characteristic	Organization		
	A	B	C
Introduced	2002	2006	2002
Application type	Commercial	Commercial	In house
Purpose	Share information Hear stakeholder concerns Extra income source	Share information Hear stakeholder concerns	Share information Hear stakeholder concerns
Popularity	Extremely popular	Seasonally popular	Less popular
Adoption advantages	Efficiently reaches more of people	Enables quick response to student inquiries Reduces work overload	Increases understanding of peoples' needs
Adoption disadvantage	Platform used in offensive ways	Improper use of the forum	Improper use of the forum

They have mainly used their social networking services for sharing information and listening to concerns. Organization A, by having advertising material on the main page, has also used the platform as an extra income source. Its platform is a very active platform, whereas Organization C has few members and offers limited discussion topics. Organization B's platform displays seasonal variation in activity that peaks during the registration period for higher education institutions.

Adoption of online social networking services has created significant, though differing, advantages for the organizations: increased innovation activity, enhanced communication, heightened awareness, new sources of income, and a new education and training channel. In Organization A, for example, open-ended forums have enabled the organization to reach a broader range of people. Similarly, Organization B's forums provide a space for students to conveniently post their admission inquiries from anywhere at any time, which has helped

reduce staff workloads by reducing inquiries from other channels such as the telephone and physical visit. The platform hosted by Organization C helps that organization to better-understand its stakeholder needs. The main reported disadvantage was unsocial use of the platform, since in every case some participants have used the forum in offensive ways. Management teams in Organization B and Organization C have thus been forced to place stringent controls on participant input.

5.6.4.5 Consideration issues for the successful adoption of OSN services

The three case organizations agreed that the success factors, **Table 5.11**, for adopting online social networking services are:

- clarity of defined objectives
- sufficient numbers of knowledgeable IT staff
- creation of a management team,
- top management support
- good control of the interactions

Table 5.11: Reported adoption consideration issues

Adoption consideration issues	Organization		
	A	B	C
The interaction objectives should be clearly defined	√	√	√
There should be adequate knowledgeable and qualified IT staff	√	√	√
There should be a management team	√	√	√
There should be top management support	√	√	√
The interactions should be controlled well	√	√	√
There should be a marketing plan	√	√	√
There should be a plan to deal with human resistance	√	√	√
Outsourcing	√	-	-
The adoption should be driven by need	-	√	-
The platform should be easy to access	-	-	√
The platform should be accessed via different channels	-	-	√

In addition, every organization stressed the need for citizens to accept the service and emphasized the importance of a marketing plan. Organization B emphasized that the organization's decision to adopt social networking applications should be driven by actual need, and not simply by desire. In addition, every organization emphasized the need to consider any reasons that might discourage potential end-users from using the system and obstacles that might cause government officers to resist the OSN initiative. For example, Organization A suggested outsourcing the service operation if the organization lacks needed IT staff. Organization C stressed that the platform should be easy to access via different channels, such as the Internet and mobile devices.

5.6.5 Summary

This section has reported viewpoints from the three Omani case organizations regarding successful adoption and use of online social networking services in government agencies. The data was collected from different types of government agencies within the Muscat Governorate. Off the back of a sharp rise in Internet usage in Oman, all three organizations chose to explore the potential for enhanced communication and interaction, and better understanding of stakeholder needs and expectations. In short, they aimed to adopt online social networking applications to gain efficiency and effectiveness improvements. Internet developments in Oman have enabled the three case organizations to provide citizens with convenient access to information, and improved services offering transparency and opportunities for understanding stakeholder expectations.

Several internal issues needing to be considered for successful adoption were identified; in particular, organizational capability, resistance to change, and top management support are all critical issues for the successful adoption and use of online social networking services.

5.7 Towards a second-cut Organization-level Framework

As indicated in **Table A7.2** in **Appendix 7**, 17 themes (subcategories) emerged from case study data collected from the organization and citizen sides during Phase II of the research. These were grouped into six main factors: *Strategic issues*, *Citizen orientation*, *Organizational capabilities*, *Organizational culture*, *Top management support*, and *Resistance to change* and compared with the literature review findings from Phase I. It is apparent from **Table 5.12** that the majority of the case study findings agree with the extant literature.

Table 5.12: Support for the first-cut Organization-level Framework

Factor	Includes	Findings	
		Phase I	Phase II
Strategic issues	1) Vision	L	S
	2) Objectives	L	S
	3) Target group	L	S
Citizen orientation	4) Focusing on citizens needs and expectations	L	S
Organizational capabilities	5) Financial resources	L	S
	6) Human resources	L	S
	7) Technical resources	L	S
Organizational culture	8) Structure	L	W
	9) Rules and regulations	L	S
Top management support	10) Providing resources	L	S
	11) Speeding up adoption process	L	S
	12) Overcoming challenges	-	S
	13) Changing organizational structure	-	W
	14) Rewarding the operations team	-	W
Resistance to change	15) Risk of shifts in power	L	X
	16) Lack of resources	L	S
	17) Risk of undesirable inputs	-	S
	18) Risk of adding extra work load	-	S
Key			
(Phase I):	(L) Factor detected in literature	(-) Factor not detected in literature	
(Phase II):	(S) Strong case support	(W) Weak case support	
	(X) Factor not detected in practice		

5.7.1 Strategic issues

In terms of the influence of strategic issues on the successful adoption of online social networking services, the case study findings strongly support the literature findings about the need define a clear vision, objectives and target group.

Defining clear objectives can help the government institution to focus on the important issues during the planning and evaluation stages. This step will also help the organization to define the technical and non-technical requirements; such as selecting the appropriate Web-based application and defining the intended audience, and will set the appropriate approach for managing dialogue. Observations noted during the case studies revealed that every Senior IT manager had a clear vision regarding the adoption of online social networking services. From instance, in Organization C the development plan for the organization's Web portal included creation of social networking services.

The Omani experience also shows that every case organization developed a platform to achieve a specific target or goal of enhanced communication and interaction with stakeholders. Thus, the chosen interaction tool was the discussion forum, which is the dominant interaction tool in use in Omani society (interviews revealed that the majority of the participants reported regularly using discussion forums). In addition, Organization A's platform targeted the educational community and the dialogue rules were set to avoid discussions not relevant to educational issues. Similarly, Organization B's platform targeted admissions into higher educational institutions, thus most of the higher educational actors were represented in the platform.

5.7.2 Citizen orientation

The principle of having a citizen orientation, thereby focusing on citizens' needs and expectations, was supported by case study findings. The Omani government has lent strong political support to enhancing citizen interactions and, although Oman has a monarchy political system and a single body of government with no political parties, the Sultan pays great intention to listening to peoples' needs and expectations. Thus, social networking applications have been adopted by the better equipped in (in IT terms) governmental institutions, such as case Organizations A and B.

5.7.3 Organizational capabilities

Case study findings strongly support the literature regarding the need to consider available technical, financial and human resources when planning for adoption of online social networking services. Successful adoption requires provision of adequate hardware and software, forum moderators and other specialist staff to obtain meaningful online interaction with citizens. In particular, the shortage of IT staff was raised as a major inhibitor.

5.7.4 Organizational culture

Regarding the influence of organizational culture, the case results confirmed that successful adoption of online social networking services may require changes to organizational structures, established rules, and employee responsibilities. For example, one of the key success factors of the Organization A platform was creating a new staff position to operate the forum. In contrast, Organization C met the same management challenge by having its IT department operate the forum. Because changing the organizational structure (creating a new department/division) was only observed in a single case organization, this factor was excluded from the final framework.

5.7.5 Top management support

Case study findings also support the literature, since top management support played a major role in the successful adoption of online social networking services in every case organization. For instance in Organization A, top management used its authority to overcome adoption challenges, speed up the adoption process, provide adoption resources, change the organizational structure, and reward the operation team. Results also indicate that top management support can be secured by clearly presenting adoption ideas, showing the expected benefits and suggesting solutions to anticipated adoption challenges. Because using authority to change the organizational structure and reward the operation team was only observed in a single organization, these factors were excluded from the final framework.

5.7.6 Resistance to change

Case study findings support the literature regarding the need to consider resistance to change when planning adoption of online social networking services. The findings confirm that resistance was an inhibitor and that the main reasons were lack of resources, perceived risk of undesirable inputs, and concerns about extra work. The study further suggests that training and educational programs can reduce the incidences of resistance. Possibly, because the government appoints all staff, no evidence was detected that officers perceived changes to their personal power or influence as a result of the new OSN being introduced.

5.8 Testing the integrity of the second-cut Organization-level framework

The Phase II (case study) results of this research provided support for eight factors that were identified in Phase I, which authors had judged were necessary to ensure successful implementation and use of online social networking applications. To examine further the refined, second-cut Organization-level Framework (OLF) for completeness and variation, Phase III of this research involved participatory action research with a government institution in the Muscat Governorate. The project concerned two separate Web-based online social networking initiatives that were successfully implemented by the organization and were used by citizens.

Figure 5.5 shows the website front page.

The action research data collection and analysis procedures were detailed in earlier Sections 3.11.5 and 3.11.6, respectively and **Appendix 8** offers a narrative of the Phase III participatory action research activities. Similar to the Phase II activities, the main source of data was interviews and observation.



Figure 5.5: Muscat Municipality e-Participation page

5.8.1 Key action research findings and insights

As indicated in **Table A7.5** of **Appendix 7**, 13 themes (subcategories) emerged from the data collected from the organization side during Phase III of the research. These were grouped into six main factors: *Strategic issues*, *Citizen orientation*, *Organizational capabilities*, *Organizational culture*, *Top management support*, and *Resistance to change* and compared with the findings from Phase I and Phase II of this research, **Table 5.13**.

5.8.1.1 Strategic issues

Regarding the influence of certain strategic issues on the adoption of online social networking application, the action research revealed that creation of a clear vision helps drive the adoption of online social networking services. From the perspective of collaboration with MM, the vision of the IT department as stated by one officer is to utilize different applications to convert the organization's traditional activities to digital ones,

“to enable people to obtain municipality services at any time and from anywhere and by any available tool”.

Since the provision of the online social networking services was in line with this vision, this made easier the decision to adopt OSNs. Similarly, the target group was defined to be every MG resident, and the interaction objectives were stated to be:

- Reaching and engaging with a wider audience
- Collecting comments and suggestions relevant to the delivered services
- Providing online channels to discuss peoples’ concern
- Increasing the organization’s consistency

Table 5.13: Support for the second-cut Organization-level Framework

Factor	Includes	Findings		
		Phase I	Phase II	Phase III
Strategic issues	1) Vision	L	S	√
	2) Objectives	L	S	√
	3) Target group	L	S	√
Citizen orientation	4) Focusing on citizens needs and expectations	L	S	√
Organizational capabilities	5) Financial resources	L	S	√
	6) Human resources	L	S	√
	7) Technical resources	L	S	√
Organizational culture	8) Structure	L	W	X
	9) Rules and regulations	L	S	√
Top management support	10) Providing resources	L	S	√
	11) Speeding up adoption process	L	S	√
	12) Overcoming challenges	-	S	√
	13) Changing organizational structure	-	W	X
Resistance to change	14) Rewarding the operations team	-	W	X
	15) Risk of shifts in power	L	X	X
	16) Lack of resources	L	S	X
	17) Risk of undesirable inputs	-	S	√
	18) Risk of adding extra work load	-	S	√
Key				
(Phase I): (L) Factor detected in literature (-) Factor not detected in literature				
(Phase II and III): (S) Strong case support (W) Weak case support				
(√) Factor detected in practice (X) Factor not detected in practice				

Again these objectives could be achieved using the interaction features of a Web portal (Forum and Blogs), which made OSN adoption easier to approve. In short, the *strategy issues* of having a clearly defined vision, target objectives and target group is a critical factor for successful adoption of online social networking services precisely because it facilitates the adoption decision. In addition, matching of clearly defined objectives and target group with organizational capabilities enables the organization to assess the value of the adoption and identify new service requirements.

5.8.1.2 Citizen orientation

Another supporting finding is that the organization's focus on understanding citizen's needs and concerns drives the adoption of online social networking applications. Focusing on actual citizen needs helps the organization to understand and respond to genuine concerns. In the MM situation, great effort was made to elicit comments and suggestions regarding the municipality issues relevant to MG. For this reason, the adoption purpose was designed to enhance the communication and interaction between the organization and its citizens, and the adoption decision was approved on this basis.

5.8.1.3 Organizational capabilities

In terms of the influence of organizational capabilities on the decision to adopt OSN applications, the action research findings reveal that availability of financial and technical resources were key drivers. For example in the MM situation, the organization's Web portal already contained some social networking features. This facilitated the adoption and implementation process since, instead of needing to purchase new applications, the organization only needed to customize its Web portal. For that reason, the adoption process approved without any obstacles. Similarly, outsourcing the project to a third party overcame a shortage of IT specialists to implement the online social networking services.

5.8.1.4 Organizational culture

The action research findings provide additional support for organizational culture being a critical consideration factor for the successful adoption of online social networking services. It was observed how the developed platform needed good controls in place to avoid undesirable discussion contributions being published online. Thus, a management team needed to be created and participation rules and regulations defined and accepted by the participants. The participation rules and regulations for MM were presented on the site's main page and the IT department operated the monitoring tools and gave operational responsibility to clearly defined staff. However, no evidence was found relating to changes needing to be made to organizational structure, probably due to management of the social networking services being by IT department staff.

5.8.1.5 Top management support

The importance of top management support on the adoption of online social networking application became clear during the action research, when one officer declared that top management supported the adoption of online social networking services. Development of the Web portal to include additional social tools was similarly directly approved.

5.8.1.6 Resistance to change

Support exists for the finding that resistance to change is one of the adoption obstacles that can be overcome by providing awareness and training programs. From the perspective of MM, the records show that one of the operations policies of the social networking site was to read citizens' inputs before publishing them online, to avoid undesirable inputs and encourage officers to drive the project. In addition, results indicate that MM organized training programs for end users before launching the tool to try to reduce end user resistance. In addition, top management support was obtained before the project commenced to help drive the adoption.

5.8.2 Summary

This section has reported the Phase III (participatory action research) findings that either support or refute aspects of the second-cut Organization-level framework. The Phase III results provide support for all of the factors which were identified in Phase I and, confirmed during Phase II, as being necessary for successful adoption of online social networking services in the Omani government sector. The final version of the Organization-level Framework is presented in the next section.

5.9 Final Organization-level Framework

This section presents the final Organization-level research framework. This consists of a number of key factors that need to be considered at an organizational level in order to successfully implement and use an online social networking tool within the government sector in Oman. The framework is presented in **Figure 5.6** with each factor then briefly defined.

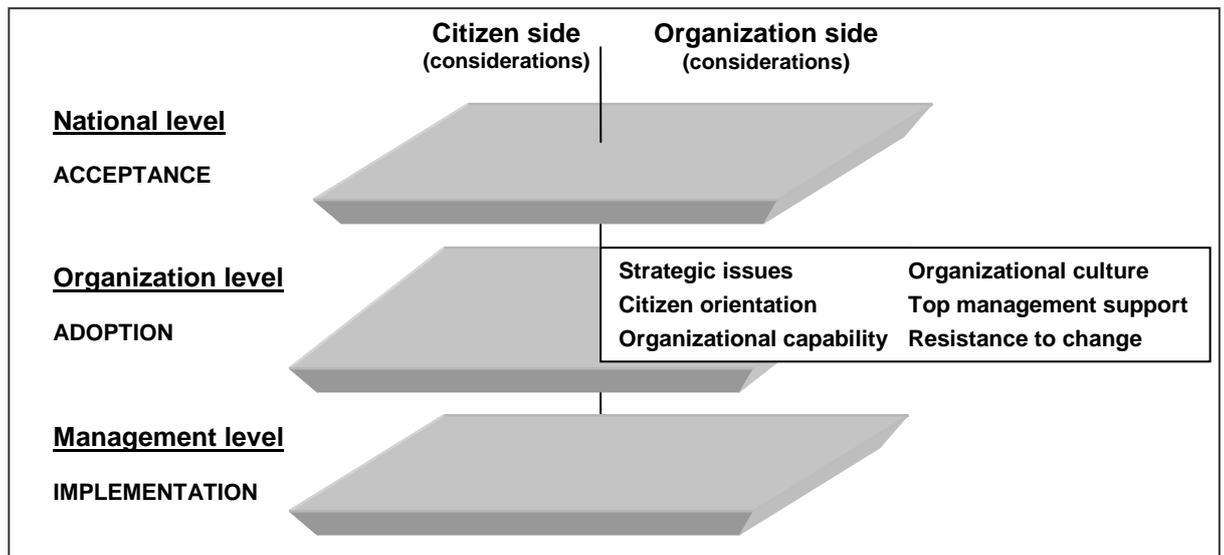


Figure 5.6: Final Organization-level Framework

5.9.1 Strategic issues

This factor refers to the availability of a documented IT strategy in the government organization that should include a clearly formulated vision, goals and objectives for the adoption and use of ICT. It should focus on current needs

and future expectations and be revisited regularly in light of innovations in the IT sector.

Clear vision and goals will help to facilitate the adoption of online social networking services. In addition, defining clear objectives and target group enables the organization to assess the value of adoption, and to define the adoption requirements and evaluate them against organizational capabilities. Thus, in general it is advisable for government institutions to make great efforts to develop their IT strategy if they wish to pursue the e-Government paradigm. Finally, it is advisable to use social networking tools for sharing experiences between government institutions.

5.9.2 Citizen orientation

This factor describes the organization's attitude towards giving more attention to citizens' needs and expectations. Adopting a citizen orientation is expected to drive the adoption of online social networking services. This is because online social networking services enable the organization to enhance communication with citizens and to give consideration to citizen's comments and suggestions about government activities. Exercising great concern for citizen's needs and expectations is expected to strengthen the relationship between government institutions and the public and thereby bring benefits to both sides. From the organization's side it is expected to provide better understanding about the community needs and expectations of its customers. From the citizen's side it is expected to raise public knowledge about the organization's responsibilities and capabilities.

The influence of this factor on the adoption and use of online social networking applications can be moderated by several issues such as policies/regulations and top management support. Lack of regulations about sharing information between government institutions and the public; and lack of policies that support citizen's involvement of government activities might inhibit decision-makers in

government institutions from adopting online social networking due to political reasons. It is thus advisable for government institutions intending to adopt online social networking services to formulate their interaction policies and regulations before defining the involvement goals, levels and target group.

5.9.3 Organizational Capability

Organizational capability is concerned with the availability of resources needed to *adopt* a Web or other technology-based application that is suited to achieving meaningful online dialogue with citizens.

Financial resources is an organizational capability concerned with the budget required to procure and develop adequate levels of hardware, software and Web hosting, and to train end-users as needed to adopt Web or other technology-based applications. It includes budgets for technical support and managing the platform, such as ensuring an adequate number of moderators. Such financial support can be affected by other economic factors. As a result, it is advisable for government institutions intending to adopt online social networking services to consider their outsourcing options during the feasibility study. In addition, an organization might be in a position to offer advertising services on its platforms that generates income. To reduce adoption and operation cost it is also advised that a combined platform be created, on which all government institutions maintain a presence.

Human resource is an organizational capability concerned with the total number and availability of staff needed to develop the application and operate the social networking services. This also involves consideration of the availability of the skilled moderators and facilitators needed to operate the online interactions. Several issues such as experience, skills, educational level and number of staff, can all moderate the influence of the human resources factor on the successful adoption of online social networking applications.

Organizations might outsource the social networking services in order to overcome the problem of lack of human resources needed to implement and operate the platform. In addition, providing training and educational programs will leverage the knowledge of the support and management teams. Finally, it is advisable to reward the management team because social networking operations require vigilance and observation at all times.

Technical resources is an organizational capability issue that refers to the availability of adequate organizational IT infrastructure (i.e. the hardware and software) needed to integrate the online social networking service into existing services. Several issues such as top management support and availability of financial resources can moderate the direct influence of available technical resource on the adoption of online social networking. However, as noted above, outsourcing of the social networking service can offer a solution.

5.9.4 Organizational culture

Organizational culture includes characteristics such as structure, rules, policies and regulations that might need to be modified. Organizational culture can be moderated by several factors such as education level, gender, experience and top management support. Thus, there should be educational and training programs for employees concerned with the cultural implications of offering adoption of Web or other technology-based applications.

5.9.5 Top management support

Top management support concerns the degree of commitment provided by senior management either to provide the necessary technical and non-technical resources, or to wield senior authority in order to facilitate the adoption of online social networking services suited to achieving meaningful dialogue with citizens. Many participants report this factor to be a critical driver for the successful adoption and use of online social networking services. It has played a critical role in leading organizational change and has enhanced the adoption and diffusion of

online services among organizational units. The degree of top management commitment to provide the necessary resources or to use their authority to facilitate the adoption of online social networking services indicates the actual level of top management support for the initiative. Top management support is also a moderator for the resource and organizational culture factors. Lack of top management support can occur due to issues related to organizational capabilities, culture and policies.

5.9.6 Resistance to change

Resistance to change refers to the extent to which the decision to adopt online social networks is obstructed, delayed or prevented either by head officers or by other decision-making actors including team members, system designers and operators and resource controllers. Officers might resist due to a lack of needed organizational capability such as human, technical and financial resources or because changes are need to the organizational structure or because a risk of undesirable inputs. Other staff might resist because of a lack of ICT skills, a risk of undesirable inputs or a perception that the adoption of online social networking services will add extra load to their responsibilities. Thus, it is advisable to provide training, and educational awareness programs for the relevant staffs.

5.9.7 Summary

This section has briefly defined the final Organizational level Framework and the eight factors judged critical for successful organization adoption of Web or other technology-based applications suitable for achieving meaningful government-citizen online dialogues.

5.10 Organization-level secondary research questions

This section (briefly) addresses the Organization-level secondary research questions presented earlier in Section 2.9. Secondary research questions are discussed as a set in Chapter 7.

5.10.1 Secondary research question SQ2

What are the organizational factors that inhibit/drive the development of e-Government in Oman?

The Organizational-level Framework identified eight key inhibitors/drivers of the development of new online services.

- Strategic issues
- Organizational Capability issues:
 - Citizen orientation; Financial resources; Human resources; and Technical resources
- Organizational Culture
- Technical Resources
- Resistance to Change

These were initially identified via a literature review, before being further investigated using case studies and action research with the Muscat Governorate in Oman. Due consideration of them is critical because they help to determine the successful outcome of the e-Government initiative. The final Organization-level Framework is generic in nature and can be applied to other governorates in Oman and to other Arabic nations having characteristics similar to those of Oman.

5.10.2 Secondary research question SQ3

How do Omani government organizations use Web 2.0 applications?

Section 5.6.1.8 outlines one typical example of the use of Web 2.0 application hosted by an Omani government institution that involves use of a discussion forum. This type of Web 2.0 application was used:

- To share information and thoughts between forum members
- To listen to people concerns
- To answer questions/solve problems
- As a source of income by providing advertising space

5.10.3 Secondary research question SQ4

What are the advantages and disadvantages for Omani government organizations of using social networking services?

This question investigates the business value to Oman government initiations of using online social networking services, from the organization and citizen sides. Section 5.6 describes many examples of the advantages and disadvantages offered to organizations from operating a Web 2.0 application (a discussion forum). The main advantages are:

- Enhanced communication between the organization and its stakeholders
- New awareness, and an education and training channel
- A new source of income.

Although the adoption of online social networking services resulted in significant advantages for the organization, some disadvantages were reported; in particular, negative comments by some participants.

5.11 Chapter summary

This chapter has described the development, over three separate research phases, of an Organization-level Framework (OLF) for the successful adoption and use of online social networking tools within the Omani government sector. The final Organization-level Framework comprises the identified critical issues which should be considered if Web or other technology-based applications are to be successfully implemented that support effective government-citizen interactions. These were categorized as *strategic issues*, *organizational resources*, *organizational culture*, *top management support*, and *resistance to change*, at least as pertains to the Omani government sector. It is judged that the developed framework can be used in other Arabic nations that have similar characteristics to Oman. The next chapter will focus on the Management-level consideration issues.

Chapter 6: Developing the Management-level Framework

6.1 Introduction

This chapter is the final one of three to present the research findings for this study. The output from this chapter is the Management-level Framework (MLF), containing the critical factors judged necessary at management level for the successful adoption and use of Web or other technology-based applications within the Omani government sector. It is judged that these factors require consideration if Web or other technology-based applications are to be successfully implemented that support effective government-citizen interactions and sharing of information.

The chapter is arranged as follows. First, the framework development process is reviewed. This is followed by description of the developed first-cut MLF which is subsequently refined with the aid of case studies, and then further substantiated with insights gained from participatory action research. The final MLF is then presented and the Management-level secondary research questions are addressed.

6.2 Management-level Framework development processes

It was intended that a Management-level Framework would document the critical factors required for the implementation of governmental online social networking services designed, from the perspective of the organization and of the citizen. Similar to the NLF and OLF frameworks, MLF was developed in three separate research phases as detailed in Chapter 3. In brief, these key steps for developing the MLF are as shown in **Figure 6.1**. These comprise: (1) development of a theoretical model; (2) case study understanding; (3) derivation of the first-cut model; (4/5) refinement into a second-cut model; (6) testing for variation and completeness of the second-cut model; and, (7) final model presentation.

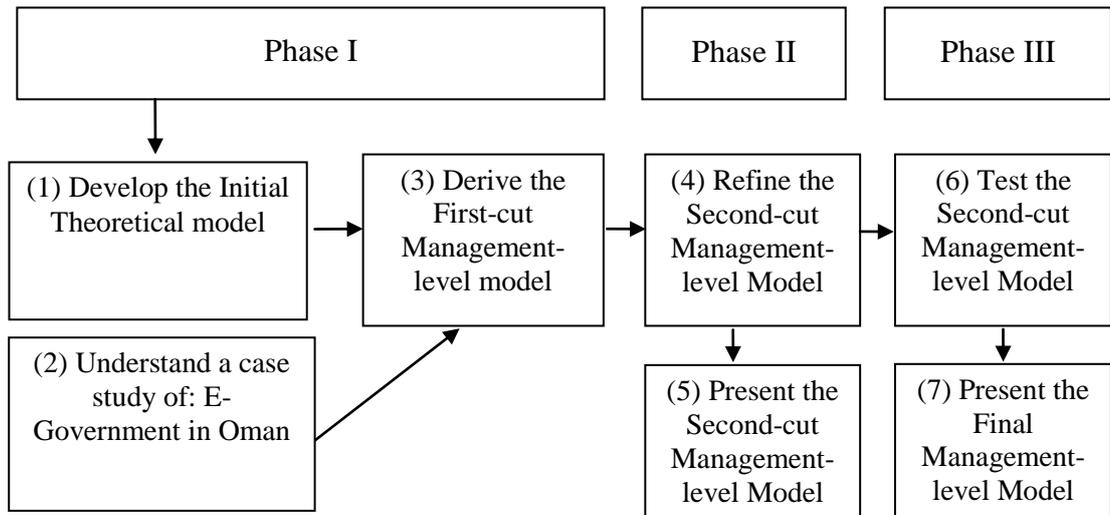


Figure 6.1: Flowchart for the development of the Management-level Framework

6.3 Management-level Framework considerations from the literature

For the purpose of initial (first-cut) model development, this section focuses on the (Management-level) considerations identified from the literature to be relevant to government organizations when they embark on a Web or other technology-based initiative. Both the organization side and citizen side perspectives are represented. The organization side perspective focuses on the critical issues for successfully developing social networking tools, creating a virtual community, and operating online discussions. In concert with this, the citizen side perspective focuses on issues for consideration when seeking to motivate citizens to use the online services.

Factors deemed critical for managers implementing e-Government projects (Rose and Grant, 2010); or for creating virtual communities/obtaining meaningful dialogue (Bohm, 1996; Graham and Hazel, 2004; Jaeger and Thompson, 2003; Jankowski and Os, 2004; Noveck, 2004; Warkentin *et al.*, 2005; Witschge, 2004); or for creating government-citizen interaction programs (Miller and Williamson, 2008) have been identified. Similarly on the citizen side, the literature reports several critical factors influencing the uptake of e-Government services (Aladwani, 2003; Carter, 2008; Deakins *et al.*, 2002:2007; Ho, 2002; Noce and McKeown, 2008); or individual sharing of information online (e.g., Chiu *et al.*,

2006). These factors are all potentially adoptable for the initial Management-level Framework since implementation of an online social network can be considered an example of an e-Government initiative. The various factors were aggregated into the five main groups shown in **Table 6.1: Preparation, Development issues, Activation issues, Operational issues and Motivation issues.**

Table 6.1: Adoption of e-Government social networks: Management-level issues

Author	Year	Concept									
		Preparation		Development issues		Activation issues		Operational issues		Motivation issues	
Perspective:		C	O	C	O	C	O	C	O	C	O
Agarwal and Prasad	1998				W						
Al-Khouri and Bal	2004				A						
AlShihi	2006				A						
Bohm	1996								N		
Carter	2008			W			W				
Carter and Belanger	2005			W							
Chan <i>et al.</i>	2003						R				
Chiu <i>et al.</i>	2006									N	
Davis	1989				W					N	
Gilbert <i>et al.</i>	2004				W		W				
Graham and Hazel	2004								N		
Heeks	2006		N								
Horst <i>et al.</i>	2007				W						
Jankowski and Os	2004									N	
Kim <i>et al.</i>	2006				W						
Mintz	2008						W				
Noveck	2004						W				
OECD	2003		W								
Rogers	1995				W						
Stanley <i>et al.</i>	2004				N						
Venkatesh and Davis	2000				W						
Warkentin <i>et al.</i>	2005				W						
Witschge	2004						W				

C: Citizen side; O: Organization side; A: Arabic nations; W: Western nations; N = Not specified

Research shows that poorly designed implementation processes and unskilled project management adversely affect project outcome (e.g., Heeks, 2006). Conversely, top management support, management readiness, and adequate training significantly increase the success rate of e-Government implementations (Pavlichev, 2004; Schelin, 2004; Tung and Rieck, 2005). Thus thorough

preparation, involving early stage planning and forming the implementation team, facilitates the implementation process. In fact, several step-wise methods are available to help local government organizations implement their project (e.g., OECD, 2003). For example, the Community Engagement Handbook of Local Government Association of South Australia suggests five stages to achieving successful engagement with the community: planning; developing a strategy; implementing the strategy; providing feedback; and evaluating the project (LGA, 2008).

Virtual community features and the operations philosophy may influence user acceptance and use of online social networking services. For example, Chan *et al.*, (2003) found that information accessibility and communication are important determinants of virtual community sustainability. To obtain meaningful dialogue, Bohm (1996) suggests assigning a facilitator and clearly defining the interaction purpose and subject matter. He also recommends that discussions should have a limited number of participants and a fixed time duration. Graham and Hazel (2004) highlighted the role of membership as a critical factor in determining the level of knowledge capital generated by a virtual community or other online group. Other studies suggest that social network participants must be treated as active; must be allowed to participate equally; and must be 'visible' to each other. In addition, the conversation task must be available to all members; must be free from censorship; and the discussion environment must be one that is open and structured and permit enough time for members to discuss properly the issues (Noveck, 2004; Witschge, 2004). Conversations that consume significant time or cost erode citizens' *Motivation* to engage and may impact the organization's decision to offer online interactions.

From the citizen perspective, the online application tool chosen for the OSN service may also influence user acceptance. Thus, such IT characteristics as security, accessibility and perceived confidentiality can significantly influence user acceptance of e-Government services (e.g., Warkentin *et al.*, 2005).

Similarly, perceived ease of use, compatibility, trustworthiness, time and cost are all significant predictors of citizens' intention to use e-Government services (Carter and Belanger, 2005; Gilbert *et al.*, 2004). In addition, empirical studies have shown that willingness to knowledge share is influenced by social issues such as ties, trust, norms of reciprocity, identification, shared vision, and shared language (Chiu *et al.*, 2006; Jaeger *et al.*, 2007; Jankowski and Os, 2004). In summary, several issues germane to the implementation and operation of government-citizen online social networking services require consideration.

6.4 Management-level characteristics unique to Omani local government

In Oman, recruitment for all units of the administrative apparatus of the state is centralised and recruitment decisions must pass through the authorized government institution. Hence, this study does not identify any Management-level characteristics potentially unique to the Muscat Governorate (MG) case study that could limit the general applicability of the Management-level Framework that is developed.

6.5 A first-cut Management-level Framework

The key factors influencing the successful implementation of e-Government initiatives, and the successful creation and operation of a virtual online community created, formed the basis of the first-cut Management-level Framework shown in **Figure 6.2**.

Both organization side and citizen side perspectives are represented in *Preparation issues, Development issues, Activation issues, Operational issues and Motivation issues*.

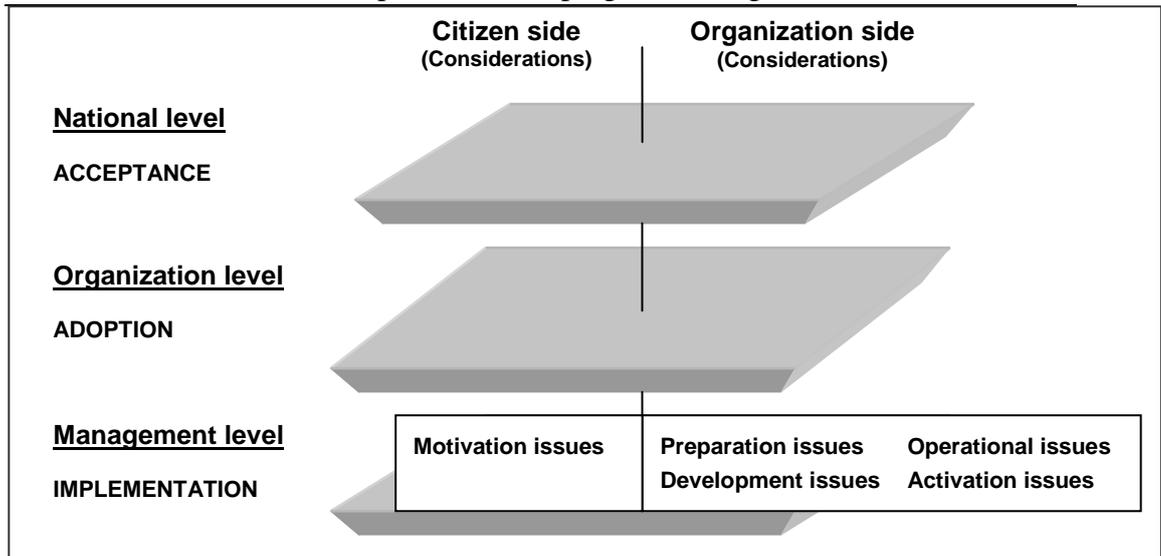


Figure 6.2: First-cut Management-level Framework

6.5.1 Preparation issues

Preparation issues are organization side considerations concerning the initial groundwork that is necessary by managers when embarking on an e-Government-citizen interaction project. It includes formation of the implementation team and the management team, defining the responsibilities and requirements, and formulating the implementation plan. These issues were all reported to be critical for e-Government projects (e.g., Hazlett and Hill, 2003; Heeks, 2006), and for projects aiming to involve citizens (e.g., Miller and Williamson, 2008).

This factor can be moderated by organizational capabilities; in particular lack of proficient IT skills, which has been reported as a major inhibitor to the implementation of e-Government projects (e.g., Al-Nahas, 2006; Bwoma and Huang, 2003; Heeks, 1999; Moon, 2002; Norris *et al.*, 2001).

6.5.2 Development issues

Development issues are organization side considerations that refer to the appropriate development of a social networking application that leads users to want to use the new online service. This factor involves technical and non-technical issues. For example, ease of use, functionality and engaging end-users in

the development of the system, are reported to be significant factors for the adoption of information technology (e.g., Agarwal and Prasad, 1998; Davis, 1989; Horst *et al.*, 2007; Kim *et al.*, 2006; Macintosh, 2003; Rogers 1995; Venkatesh and Davis, 2000). Such issues are expected to both influence the implementation of online social networking services by government and citizen motivation to use them.

6.5.3 Activation issues

Activation issues are organization side considerations that concern the establishment of the virtual community that might influence citizen use of the online service; including accessibility issues, appropriate testing and marketing, training and awareness programs, and whether there is a service charge. Such activation issues are reported to be critical issues for successful implementation of e-Government initiatives (e.g., Ebrahim and Irani, 2005; Graham and Hazel, 2004; Ho, 2002).

6.5.4 Operational issues

Operational issues are organization side considerations that concern those aspects of operating the virtual community that might influence the use of online social networking services; such as top management support, moderating the discussions, technical support, security, privacy and consideration of dialogue characteristics. Such issues are reported to be critical issues for implementing a government-citizen engagement project and obtaining meaningful dialogue (e.g., Bohm, 1996; Chiu *et al.*, 2006; Graham and Hazel, 2004; Jaeger and Thompson, 2003; Jankowski and Os, 2004; Noveck, 2004; Warkentin *et al.*, 2005; Witschge, 2004). Thus, the operational issues factor is expected to influence the implementation and use of online social networking services because social media applications have been described as a powerful means to build virtual communities within which meaningful dialogue can be created (e.g., Finin *et al.*, 2005; Vossen and Hagemann, 2007).

6.5.5 Motivation issues

Motivation issues are citizen side considerations that concern the managers of implementation teams for the online community dialogue. Motivation issues are reported to be critical issues for attracting people to join the virtual community and to continue taking part in the online discussions (e.g., Chiu *et al.*, 2006; Jankowski and Os, 2004; Stanley *et al.*, 2004). Relevant factors include ease of use, privacy, response to inputs, rewards, discussion quality, discussion topic, participant equality, and, whether there is a service charge. The influence of the motivation issues on the use of online social networking services can be moderated by such factors as subjective norms (e.g., Chiu *et al.*, 2006; Horst *et al.*, 2007; Kim *et al.*, 2006; Venkatesh and Davis, 2000).

6.6 Refining the first-cut Management-level Framework (case findings)

The first-cut Management-level Framework, with its five critical management influencers of the adoption and use of online social networking services was derived from the literature. This was subsequently refined in light of case study findings. Case study data collection and analysis procedures were detailed in earlier Sections 3.6.5 and 3.6.6, respectively. The plan was to find any evidence to support/refute the literature findings and identify new factors not included. In broad terms, policymakers were interviewed and asked to express their views on implementation issues and to answer the following questions:

1. Describe the main management-level issues that you would take into account when considering whether to offer a new social networking service to citizens.
2. Which ones are the main drivers, and which ones the main inhibitors?

To address the management aspects that influence the implementation and use of web-based social networking applications, case organizations were selected from among the individual civil service entities of the Muscat governorate. Three service organizations offering online social networking services were examined for this research. 'Organization A' operates in the general education sector,

'Organization B' in the higher education sector, and 'Organization C' operates in the municipality sector.

6.6.1 Case study findings (Organization A)

This section presents the key findings from the first case study regarding the implementation and operation of online social networking services. A description of the key implementation issues and social networking issues follows a brief review of the organization and the research participants (further demographic details appear in Section 5.6.1.1 and Section 5.6.1.2, respectively).

6.6.1.1 Case profile

Organization A is one of the largest Omani government institutions (ministry level institutions) in the general education sector and is classified as a National Government Institution (NGI). The purpose of the planned OSN was to facilitate interaction and communication between stakeholders within the education sector.

6.6.1.2 Demographic information about the participants

The sample comprised two senior managers, a social networking services operator and an IT specialist (one female, three male). These are mostly well-educated and relatively mature and experienced individuals of 5-20 years of service.

6.6.1.3 The implementation process

Interviews revealed that the IT manager had led the implementation process. The main implementation stages as described by the implementation team leader can be categorized as follows:

- Creating the implementation team and defining its responsibilities
 - Following top management's decision to proceed, the implementation team was created mainly to formulate and action the implementation plan. The implementation team comprised a team leader and business and IT staff representatives.
- Defining the interaction characteristics

- This stage included defining the main objectives of the interaction, the target group, and the forum rules and policies.
- Selecting and customizing the application
 - The social networking application was selected based on desired interaction characteristics, and customized to fit the organization's needs.
- Activating the virtual communities
 - This stage included testing and launching the tool. Also, developing the operation team, conducting training programs and promoting the new services
- Monitoring and evaluating the interaction
 - This stage involved a management team controlling discussions/interactions and evaluating the interaction outcomes.
- Evaluating the effectiveness of the social networking service

6.6.1.4 The main implementation challenges

Organization A faced significant challenges during the implementation of its online social networking services- in particular staff resistance to change. In the view of some participants, resistance to change was likely due to a lack of knowledge about the benefits of online services, lack of skills in using the social networking applications, and fear of problems such as unsocial use by forum participants. In the event, employees were motivated via training and awareness programs, and rewards were offered. The IT senior manager supports this by saying that,

"...in this type of technology we are talking about communication between two actors. Thus, some staff appeared to have high resistance to using it because of perceived risk issues such as unsocial use of the tool...how to convince employees about the importance of using social networking services and its benefits; how to convince them if you use this tool you will get feedback which can be used to improve you work. Therefore, we needed special training programs and material and non-material rewards."

In addition, top management support played a major role in compelling the department to use the new services. The IT senior manager stated that,

“...the Minister has imposed onto the department the requirement to respond to people’s comments, as part of their responsibilities”.

Another challenge that faced Organization A was the need to recruit a management team to moderate the online discussions, According to the IT senior manager,

“...one of the [key implementation] challenges was finding moderators to operate the forum.” This need was addressed by motivating people to join the management team, by hiring (unemployed) forum member citizens onto the management team, and by modifying the organizational structure by adapting certain employees’ responsibilities.

According to the IT senior manager, still another challenge was,

“...technical ability; the organization has encountered difficulty programming the application because of a lack of IT staff.”

6.6.1.5 The main implementation success factors

From the interviews, it is clear that Organization A successfully implemented its online social networking service by paying close attention to some key implementation factors. In addition to good preparation, these included consideration of issues related to: the application itself, to end user needs and activation, to accessibility, and to community management.

Critical to successful implementation was good preparation, which involved creating the implementation team and defining its responsibilities and formulating the plan. The implementation team also paid great attention to selecting the appropriate tool. The implementation team leader supports this by stating that several tools were tested before the selection decision. In addition, it appears that

the implementation team's knowledge about Web 2.0 tools facilitated tool selection. The IT senior manager supports this by saying,

"...one of our goals was to build a team that has good knowledge about Web 2.0 applications. This would help us to increase our understanding about such applications and their uses."

It appears that the quality of the OSN and its support infrastructure helped drive the implementation of the social networking application. The IT senior manager supports this by stating,

"...the tool should be easy to use. Also, there should be a basic infrastructure."

The social networking site was translated into Arabic script and contained control features that help reduce undesirable interactions. Such efforts to make the site easy to use increased user satisfaction.

It was reported how consideration of citizen needs was a critical success factor to motivate users to use the application. The IT senior manager supports this by stating that,

"We don't forget the other party. We offer this application for them so they should have a voice in the development of the application. I think this will help to success the project."

The interviews notes reveal that stakeholders were involved in the implementation process and participated in the management of the OSN. Furthermore, the organization conducted training and education program to stress the benefits and use of the OSN to citizens.

A further key implementation success factor was consideration of the activation issues. The results revealed that top management support had driven the implementation process. The IT senior manager supports this by saying,

“...there was strong support from the top management. Our leader had driven the adoption of the forum. His support came from his interest... he uses this type of tool and he knows how to administrate these types of applications...sometimes he guides you... he surprises you with his knowledge.”

It seems that promoting the benefits of the new social networking services was a major consideration issue for activating the new social networking service. The IT senior manager from Organization A supports this by saying,

“...introducing new services needs huge publicity. It needs to be well promoted. This is because the first impression is the final impression. You need to present it in attractive and rich ways in order to convince people by presenting its value. This greatly motivates them to use it...our marketing plan included developing many publications, our website link had been written in most of the organization’s documents and we linked the website with other media programs. I think we developed a good marketing plan.”

Interview notes reveal that consideration of accessibility issues was another critical factor for Organization A. Having no registration cost motivated citizens to use it and they had only to provide basic information during the registration process to help ensure they were made aware of the participation rules. The forum can be accessed directly from the main page of the organization’s website.

Management of the virtual community, beginning with determining the management team and its responsibilities, then defining participation rules and policies, was a critical factor for successful implementation of the online social networking application into Organization A. The IT senior manager supports this by saying that,

“...you need to define the rules and the management team and its responsibilities. The responsibilities should be clear.”

6.6.1.6 Management of the online social networking service

Four authority bodies managed the social networking site at Organization A. The first authority body was a Higher Committee, which consisted of members from different departments and had the responsibility of drawing up the interaction policies. The second authority was the Management Council, which had the main function of managing the day-to-day activities. These people were selected from the platform's active membership. The third management body was the IT department, which had the responsibility of developing the tool and providing technical support. The final authority was the Electronic Design and Publishing department, which was responsible for following up posted issues and questions with the relevant department(s).

6.6.1.7 The main management challenges

Organization A faced two significant challenges during the operation of its online social networking service. The first was maintaining control of the interactions, particularly when the network grew in popularity. At this point, unsocial behavior by some members caused the organization to change the operating mechanisms. Obtaining a timely response to participants' inquiries from other departments was another challenge because lack of cooperation caused delays. The IT senior manager stated that,

"...We are now thinking we should make access to the platform through our portal in order to identify the users. This will facilitate control of the interactions.

6.6.1.8 Obtaining a meaningful online dialogue with citizens

The interview results revealed that a meaningful online dialogue with citizens can be obtained by considering issues relevant to the interaction characteristics and the management of the community.

The main issues needing to be considered to obtain meaningful dialogue are: defining the objectives and the target group, defining the scope of the discussion topics, defining the participation policies and rules, having qualified moderators,

and controlling the discussion. These issues were reported as key issues to improving the quality of the dialogue. For instance, the IT senior manager supports this by saying that,

“...any organization that would like to obtain meaningful dialogue should define the objective-which should be clear... Are we going to talk about political issues, economic issues or talks about cars... Define the discussion topics and the target audience. Whenever, the interaction characteristics are clear, more success can be expected. The organization should not focus on the number of participants, but on the quality of the discussion... [Also] I think the presence of qualified moderators is a critical issue. If the moderator is not understanding the interaction topic or does not have communication skills, the discussion will not achieve its objectives. In contrast, a qualified moderator can drive the discussion or delete or modify the input.”

Observation notes show that all discussed topics were related to the education sector and moderators have the main responsibilities for editing the input and responding to participant inquiries relevant to their department.

6.6.1.9 Dealing with participant input

The results reveal that Organization A used participant input to improve the organization’s other delivered services and customize them to fit people’s needs and expectations. As the IT senior manager commented,

“...another use of the forum is to use the collected feedback to modify proposed projects during the development stage. For example, for some recent projects, top management has required us collect feedback about the new projects before they are implemented into the community. One of these feedback channels is the discussion forum. The plan was to identify peoples’ concern regarding the project and use that feedback to modify it ... The forum is watched by different departments where each has members who are required to collect discussion feedback relevant to the department and use that feedback to improve the delivered services.”

6.6.1.10 Case summary

This section has reported the experiences of the first case of an Omani government institution as it implemented and operated its online social networking service; including providing departmental responses to citizens' concerns. The application was implemented in a series of stages, which include creating an implementation team, setting the implementation plan, defining the interaction characteristics, selecting, customizing, testing, and launching the application, activating the community, providing training and awareness programs and monitoring and evaluating the online discussions; and responding to concerns and issues that arose.

The implementation of online social networking services faced significant challenges such as resistance to change, recruiting the management team and lack of IT skills. For successful implementation, the participants suggested considering obtaining top management support, building knowledge capacity about Web 2.0 among the implementation team, developing a marketing strategy and considering technical issues such as infrastructure and ease of use.

Organization A managed the social networking site by creating management authority bodies. Their responsibilities focus on planning and managing day-to-day activities. The main reported management challenges were controlling the interactions and obtaining responses from the department regarding the people's concerns. Thus, participants suggested several critical issues for consideration. Similarly, to obtain meaningful dialogue, the issues include the need to create a good management team manage the interactions well.

6.6.2 Case study findings (Organization B)

This section presents the key findings from the second case study regarding the implementation and operation of online social networking services. A description of the key implementation issues and social networking issues follows a brief

review of the organization and the research participants (further demographic details appear in Section 5.6.2.1 and Section 5.6.2.2, respectively).

6.6.2.1 Case profile

Organization B is classed as a National Government Institution (NGI) and has the core business of supervising higher educational institutions, administering educational scholarships, and organizing admissions to higher educational institutions. Unit A fulfills the main function of regulating the admission of general certificate students to higher education institutions according to their wishes, attained grades, and terms of admission.

This research is focused on the open-ended discussion forum that enables students to interact and post their concerns, either to the Unit or to higher educational institutions.

6.6.2.2 Demographic information about the participants

The sample comprised a CEO, a vice-CEO, an IT manager and an IT specialist (one female, three male). They are well educated and three of the four are relatively mature and experienced individuals of 20+ years of service.

6.6.2.3 The implementation process

The IT department formulated and conducted the implementation process for the social networking service. The interviews show that the idea to adopt social networking services for Unit A was originally suggested by the IT department then CEO approved.

The IT manager led the project and the main implementation stages can be categorized as follows:

- Preparation
 - This involved creating the implementation team and defining its responsibilities, developing a plan for the implementation and defining the challenges and critical factors.

- Defining the interaction characteristics
 - This stage involved defining interaction objectives, scope and participants.
- Selecting and customizing the application
 - This stage involved selecting the discussion tool based on the characteristics of the interaction.
- Developing the management team
 - This included selecting the moderator, observers and management staff. It also included defining management entities and their responsibilities.
- Testing and launching the application
 - This involved testing the application for technical faults and publishing the services.
- Evaluating the services
 - This stage included regularly evaluating the service outcomes. In addition, it included evaluating the effectiveness of the application.

6.6.2.4 The main implementation challenges

Organization B faced significant challenges during the implementation of its online social networking services. One of the major challenges for Unit A was resistance to change, which according to the interview notes was very likely due to lack of persuasion about the value of adopting the tool. Perceived usage risk issues such as unsocial use of the social networking services (i.e. choosing the wrong way to comment on peoples' contributions, sending undesirable e-mails and photos and offending members) also caused resistance. As the IT manager commented,

"...the acceptance level varies depending on employees' viewpoints regarding the advantages and disadvantages of using the forum."

Another challenge to implementation was recruiting the management team. It appears that Unit A had difficulty in recruiting moderators for the virtual community. For example, the IT manager stated,

“...some employees said I don’t want this because it will add extra work to my responsibilities.”

Thus, probably through lack of experience in the adoption and use of Web 2.0 applications, selection of the tool took longer than expected. Resistance to change was reduced by using the social networking service for internal use, before it was introduced to the public. The organization also involved its stakeholders in the operation of the discussions.

6.6.2.5 The main implementation success factors

From the interviews, it is clear that Organization B successfully implemented its online social networking service by paying close attention to some key implementation factors. In addition to good preparation, these included consideration of issues related to: the application itself, to end-user needs, activation issues, accessibility issues and community management issues.

Good preparation was critical for the implementation of online social networking services. The results revealed that the implementation of the social networking application began by creating the implementation team, defining its responsibilities, and formulating the implementation plan. Using information they collected, the team defined the purpose of the online social networking service: to facilitate and speed up responses to student inquiries and to increase understanding about their needs and expectations.

In addition, the results indicated that the implementation team gave great thought to the selection of the social networking application. The team leader stated that, *“...we were concerned to select best practice. We don’t want to select a tool and then have it not work.”*

Researcher observation showed a good standard of IT infrastructure in Unit A, which facilitated the implementation of the social networking application. In addition, the implementation team had been very aware of the need to adopt a social networking application that would be easy to use, and would have the needed control features and the ability to be translated into Arabic script. In fact, ease of use was reported by the CEO of Organization B to be his main critical consideration for successful implementation of the online social networking application.

Another critical factor was consideration of the need to motivate the end-users. Involving end-users in the implementation process was reported as a prime motivator for adopting and using of online social networking services from the citizen side.

A further key implementation success factor was consideration of the activation issues. It was reported that promotion of the new social networking services was one of the issues that need to be considered to attract people to use the offered social networking service.

The main accessibility issue was reported to be registration cost. The observation notes show that Unit A's social networking site was very active and registration was free of charge. This acted as a motivator for citizens and increased accessibility.

Finally, the results show that consideration of a range of community management issues was critical to success. This included creating a management team, considering risk management issues such as unsocial use, securing top management support, and providing education and training programs. Considering how these activation issues could likely improve the quality of the discussion, the IT specialist reported,

“[The implementation key success factors needing consideration are ... management of the discussion forum... there should be a communication skill... you need to consider the risk management issues”

Having top management support and a training and awareness program were both highlighted by the IT senior manager,

“...there should be awareness for the organization and for society... if there is no awareness and there is no adoption of the idea from the end users, the project will not succeed... also there should be support from all actors.”

6.6.2.6 Management of the social networking service

The social networking site for Unit A was operated by a team, which consisted of administrators, moderators, and supervisors. The administrators were IT staff who had the responsibility to manage the technical details required for running the virtual community, such as modifying the structure, providing technical support and developing the tool. The moderators, in contrast, were nontechnical staff, who were responsible for specific sections and had the authority to access all posts and threads in their area of responsibility. In addition, they had authority to answer user concerns relevant to their institution or department.

6.6.2.7 The main management challenges

Unit A faced significant challenges during the operation of the online social networking services. These included controlling the interactions and untimely response by the institutions to student inquiries. The fast growth of the virtual community, unsocial behavior by some members, and lack of management staff led the organization to change the operating process. The IT manager, when asked about the main management challenges, stated that,

“...it is difficult to control the discussion forum. This is because the number of members is increasing and we have a limited number of staff. We hope to minimize the undesirable inputs and the connection between the user name and

student identification card will enable us to know the real identity of each member.”

“...there was limited response from the institutions to students’ inquiries.”

6.6.2.8 Obtaining a meaningful online dialogue with citizens

The interview results revealed that a meaningful online dialogue with students can be obtained by defining such interaction characteristics as objectives, target group, and participation rules and regulations. The CEO supports this by saying that, *“...the critical issues for obtaining meaningful dialogue include defining the interaction objectives and target group”*.

Another critical issue for obtaining meaningful dialogue was creating the management team and defining its responsibilities, such as activating and controlling the interaction and providing technical support.

A further critical issue was that of organizational responsiveness since the results reveal that people can be further motivated to participate by responding to their inquiries. All participants agreed that the success of the interaction depended mainly on the organization’s action to participants’ inputs. As reported by the CEO and IT specialist,

...if the students ask questions and he/she doesn’t get a response, he/she will not ask again.

...if there is no response, they will not come again.

The management team includes moderators, administrators and supervisors. It is the main responsibility of the moderators to be alert to undesirable input and remain in control of the interactions, especially when the organization operates an open-ended discussion forum. This is because undesirable participant input can soon lead to a reduction in the quality of the discussion; which might inhibit other people from participating. The IT senior manager supports this by saying,

“...one of the critical issues for obtaining meaningful dialogue is selecting the management team. The team members have to have communication skills...they should have wide knowledge about the discussion topics...they should be available all the time especially if the discussion is open ended for the public.”

6.6.2.9 Dealing with participant input

The results reveal that Unit A of Organization B also used participant input to improve its services. According to the IT senior manager,

“...we use the input to improve performance. For example, one student suggested an idea and we are planning to implement it.”

6.6.2.10 Case summary

This section has reported the experiences of the second case of an Omani government as it implemented and operated its online social networking service. The application was implemented in sequential stages including: creating an implementation team, setting the implementation plan, defining the interaction characteristics, selecting, customizing, testing, and launching the application, activating the community, providing training and awareness programs and monitoring and evaluating the interactions.

Although the interviews revealed that Unit A has one of the most successful social networking services in Oman, implementation faced significant challenges, such as resistance to change, management team recruitment, and lack of IT skills. Thus, for successful implementation the participants suggest obtaining top management support, building up knowledge about Web 2.0 within the implementation team, and consideration of technical issues such as infrastructure and ease of use.

The main reported management challenges were how to maintain control of citizen interactions and how to obtain a response from the relevant department regarding peoples' concerns. Participants offered several solutions to obtaining

meaningful dialogue, such as creating a strong management team and controlling the discussions.

6.6.3 Case study findings (Organization C)

This section presents the key findings from the third and final case study regarding the implementation and operation of online social networking services. A description of the key implementation issues and social networking issues follows a brief review of the organization and the research participants (further demographic details appear in Section 5.6.3.1 and Section 5.6.3.2, respectively).

6.6.3.1 Case profile

In contrast to the first two cases, Organization C is an example of a Local Government Institution (LGI); a second level government entity. It consists of a legislative body and an executive. The purpose of the social networking platform (a discussion forum) is to facilitate interaction and communication between central government, government institutions, citizens, suppliers, private organizations and employees. Similar to Organization A, this organization uses a centralized approach to manage e-Government systems and address municipality problems.

6.6.3.2 Demographic information about the participants

The sample comprised two senior managers: an IT Division Head and an IT Chief Executive, plus an IT specialist. All are male and well educated, with 10-15 years of service.

6.6.3.3 The implementation process

The implementation team leader described the main implementation stages as follows:

- Preparation
 - This step included creating the implementation team and defining its responsibilities; and defining the implementation plan.
- Defining the requirements

- This stage involved defining such interaction characteristics as the interaction objectives, target group, and forum rules and policies.
- Developing, testing and launching the application
- Activating the interaction community
 - This stage included promotion of the interaction services through local media and providing training programs.
- Operating the virtual community
 - This step included managing online interactions and evaluating the posted issues.

6.6.3.4 The main implementation challenges

Organization C faced several implementation challenges; resistance to change and management of the social networking site in particular. It seems that resistance appeared from both the organization and user sides. The IT head division commented that,

“...initially there was an acceptance for the adoption of the discussion forum by officers. However, that viewpoint changed after two weeks of using the services.”

User resistance to change was probably due to unsocial behavior by some community members. In response, Organization C amended its management approach and the operations policies were changed. Instead of directly allowing users to publish their own input, the posted comments were reviewed and approved by the management team before publication. The IT head division stated,

“...some members used the discussion forum to criticize people who were not their responsibility...this behavior was not accepted by some... we attempted to overcome this problem by adding a filter system, by reading the input before it was made public.”

Interview results revealed that some employees strongly resisted the changes because they lacked the skills to use the discussion forum. Organization C appears

to have overcome this challenge by providing awareness and training programs to leverage skills. When the IT head of division was asked about the main challenges preventing the organization from further developing its online services, he stated that,

“...the second challenge is the staff who will use the system...some employees asked me why are you bringing me a computer and at the same time you don’t teach me how to use it?”

Another implementation challenge was the location of the management body within the organization. The IT department believed that management of the forum should be the responsibility of another department. However, this plan was not successful because other departments were not convinced of the value of adopting the application. Consequently, the IT department undertook the role as they were the originators of the idea for a social networking service.

6.6.3.5 The main implementation success factors

The interviews reveal that Organization C did successfully implement and use its online social networking services. The key implementation success factors were perceived to be good preparation plus consideration of issues related to the application, end-user needs, activation issues, accessibility issues and community management issues.

Thorough preparation was critical since the results reveal that the implementation of the social networking application began by creating the implementation team, defining its responsibilities, and formulating the implementation plan. It seems that good preparation had likely facilitated the whole implementation process.

In addition, the results indicate that the implementation team gave great thought to the selection of the social networking application. Organization C also had adequate infrastructure and IT capability to build and integrate its in-house discussion forum into the existing website. The forum was designed to be easy to

use and with the needed control features to manage participants' input. It also had motivation feature to reward participants and was presented in Arabic script.

Consideration of end-user needs was another critical acceptance factor. Users were involved in the development process and were also engaged in the organization's training program, which was designed to leverage skills and capacity to use the social networking services.

A further key implementation success factor was consideration of activation issues. For instance, the IT divisional head declared that the discussion forum was prompted with the aid of local media.

The main accessibility issue was reported to be registration cost. The observation notes show that Unit A's social networking site was very active and registration was free of charge. This acted as a motivator for citizens and increased accessibility.

Regarding accessibility as another critical success factor, the interviews revealed that the social networking service was made available to the public free of charge and without the need to register. Participants could also conceal their identity. As described by the IT divisional head, these features were all provided with the express aim of motivating municipality stakeholders to use the social networking service.

Finally, the results show that consideration of a range of community management issues was critical to the successful implementation of the online social networking application. The IT divisional head stated that top management, who themselves tracked its use and gave direction to departments to give great concern to the posted comments, supported adoption and implementation of the discussion forum. In addition, the social networking service was operated by the IT

department team who were given the main responsibility to operate the interaction.

6.6.3.6 Management of social networking services

The Forum Operator having responsibility to operate the platform confirmed that the IT department operated the social networking service. Its management team was responsible for providing technical support, controlling the platform and reviewing members' input before publishing it online. Useful suggestions, comments and inquiries are sent to the relevant department, or to head office, which forwards it to the relevant department for action. The IT department updates participants regarding their inquiries once it receives information from the relevant department about any action taken.

6.6.3.7 The main management challenges

Organization C faced significant challenges during the operation of online social networking services. One of the challenges was the need to control online interactions. The unsocial behavior of some members led the organization to change the operation mechanism. The IT head division, when asked about the main management challenges, stated that,

"...some members used to post undesirable issues. We attempted to overcome this problem by adding a filtration system to the forum and reading the posted comments before publishing to the public forum."

Another challenge was slow response to members' input. This was likely due to a feedback system that takes a long time to get a response from the relevant department. The IT divisional head supports this by saying,

"...the main challenges were delays in the response to peoples' inquiries. This has an effect on the amount of participation. Some people say, 'why I should participate when no-one replies to my input.'"

6.6.3.8 Obtaining a meaningful online dialogue with citizens

The interviews revealed that meaningful online dialogue with citizens was obtained (mainly) by providing better control of the interactions and responding to participant inquiries. Loss of control was reported to be one of the factors causing people to disengage. This was because some participants had tended to raise undesirable issues during the discussion, which might cause others to depart the discussion.

In the view of some participants, good control can be achieved by having qualified moderators that have good communication skills and who clearly state the interaction rules and regulations. For example, the IT senior manager, when he was asked about how to obtain meaningful dialogue, stated,

“when people send inquiries, they would like to have a quick response to their input. Thus, you need to have qualified moderators to manage the virtual community.”

In addition, when asked about the acceptance of the online services by stakeholders, he stated,

“There was resistance from some employees because of the risk from using the discussion forum of raising issues which might offend some employees.”

6.6.3.9 Case summary

This section has reported the experiences of the third case of an Omani government as it implemented and operated its online social networking service. The interviews revealed that Organization C introduced social networking services to share information, solve problems and answer people’s inquiries relevant to the municipality sector of MG.

The application was implemented in a series of stages which comprise: preparation, defining the requirements, developing the application, and activating and operating the virtual community. During the implementation process,

Organization C faced resistance to change and management team challenges. Organization C attempted to overcome these challenges by changing its approach to controlling the discussions. In addition, it provided training and awareness programs to leverage peoples' capability and make them aware of the benefits of using the social networking service.

The service was operated by the IT department which was responsible for the planning and managing of day-to-day activities. The main reported challenges involved the need to control interactions and to obtain a timely response from the relevant department regarding peoples' concerns.

Several consideration issues were suggested for successful implementation, including planning, accessibility, developing the application and activating the new service. In addition, to obtain meaningful online dialogue, participants suggested several issues related to the operation of the dialogue and motivating people to use the new social networking service.

6.6.4 Cross-case analysis

This section presents the similarities and differences between the three cases. These are based on the findings from interviews and document reviews that provided understanding of the main key issues for the successful implementation and use of social networking services.

6.6.4.1 Case profiles

As shown in **Table 6.2**, all three organizations have used the same type of online social network application (a discussion forum) and they all have a long history of offering such online services. Organization A and Organization B made use of a ready-made application that consists of a tree-like directory structure divided into sub-forms for the relevant directorates/departments/offline communities. In contrast, Organization C built its own application and this too is divided into sub-forms for the relevant directorates.

Table 6.2: Online social networking site comparison

Characteristic	Organization		
	A	B	C
Type of application	Discussion forum	Discussion forum	Discussion forum
Tool acquisition	Off-the shelf	Off-the shelf	Developed in-house
Launched	2002	2006	2002
Platform size	Large	Medium	Small

6.6.4.2 Implementation and use of online services

The adoption rationale varied. For Organization A and Organization C, the decision to adopt was driven by their intention to explore the potential of social networking tools. In the case of Organization B, the decision was driven by the need to solve some existing problems. In Organization A and Organization C, the final decision to proceed was made by a higher authority.

All three organizations followed a very similar implementation path, **Table 6.3**, which consisted of the stages: preparation, requirements definition, application development, management body creation, virtual community activation, virtual community operation, and service evaluation. All three organizations also faced very similar challenges during implementation: resistance to using the social networking services, management of the social networking site, plus various technical issues.

Resistance to change was generally caused by a lack of promotion of the value of the online service and concerns about the perceived risks associated with unsocial user behavior. The organizations attempted to overcome resistance by providing training and awareness programs, and rewarding their management teams.

Table 6.3: Implementation stages (all case organizations)

Implementation Stage	Includes
Preparation	<ul style="list-style-type: none"> • Creating the implementation team and defining its responsibilities • Formulating the implementation plan
Requirements definition	<ul style="list-style-type: none"> • Defining the interaction characteristics • Defining the technical requirements
Application development	<ul style="list-style-type: none"> • Developing the application or • Selecting and customizing the selected application
Management body creation	<ul style="list-style-type: none"> • Creating the management committee • Creating the management entities • Recruiting moderators and administrators
Virtual community activation	<ul style="list-style-type: none"> • Testing the tool • Launching the services • Promoting the new services
Virtual community operation	<ul style="list-style-type: none"> • Observing the discussion • Controlling the input • Responding to input
Service evaluation	<ul style="list-style-type: none"> • Evaluating the structure • Evaluating the content • Evaluating the outcome • Evaluating the management approach

Both Organization B and Organization C imposed controls on user inputs in an attempt to reduce unsocial use of the social networking service. Organization A and Organization B also involved their stakeholders in the operation of the discussions, which helped to maintain control of the virtual community. It is likely that the relatively small number of members made step this unnecessary in the case of Organization C.

All three organizations drew attention to the challenge of recruiting a management team because of the perception by staff that their workload would increase. The IT staff in Organization A were less concerned because they were only responsible for technical support; whereas in Organization B and Organization C they were also responsible for the day-to-day operation of the social networking service.

Regarding the critical factors for successful implementation of online social networking services, interviews backed by observation revealed consensus on the need to consider several critical success factors given in **Table 6.4**. Thorough *preparation* was critical for all three case organizations as the results reveal that implementation of the social networking application began by creating the implementation, defining its responsibilities, defining requirements and formulating an implementation plan. It seems that this facilitated the whole implementation process since in every case the implementation team formulated the plan and then worked to overcome its implementation challenges.

Table 6.4: Implementation key success factors (reported)

Factor	Involves	Organization		
		A	B	C
Preparation issues	a. Planning	√	√	√
	b. Creating the implementation team and define responsibilities	√	√	√
	c. Define requirements	√	√	√
Development issues	a. Application type	√	√	√
	b. Usability issues	√	√	√
	c. Design issues	√	√	√
	d. Engage the users	√	√	√
Activation issues	a. Testing	√	√	√
	b. Marketing	√	√	√
	c. Training and awareness	√	√	√
	d. No charge	√	√	√

Careful thought was also given to selection of *development issues*. Here the main considerations regarding implementation of an online social network concern selecting the application type, and having users engaged in the development process. In addition, the forum design must be easy to use and with control features needed to manage participants' input. The chosen application's ability to present the site in Arabic script is helpful in aiding both usability and motivation. Organization A and Organization B highlighted that application development was a technical challenge for them due to a shortage of qualified staff. Hence, these

organizations adopted ready-made applications that could be customized by the respective IT department. In contrast, Organization C did not highlight this technical challenge and the IT department developed the social networking application in-house.

The case organizations emphasized the importance of various *activation* activities that influence citizens to trial the online service, including testing and marketing. Similarly, having users engage with organizational training programs helped to build awareness and confidence in the service and otherwise motivated them. All the case organizations also reported the need to consider accessibility issues. They emphasized the need for the social networking service to be made available to the public free of charge and without the need to register. Participants should also be able to conceal their identity if they chose to.

6.6.4.3 Management of social networking services

Analysis reveals that the case organizations used different means to operate their social networking service, **Table 6.5**.

Table 6.5: OSN main operational characteristics

Characteristic	Organization		
	A	B	C
Application type	Discussion forum	Discussion forum	Discussion forum
Registration	Required	Required	Not required
Operated by	Board Council and IT department	IT department	IT department
Operations team (members)	Citizens and employees	Business partners and employees	Employees

The management team for the social networking sites in Organization B and Organization C only involved IT department staff. In contrast, Organization A shared management responsibilities between the IT department, which focused on

technical issues, and another department that focused on operational issues. In addition, a committee had responsibility for drawing up site policies.

In Organization A and Organization B each forum consisted of a tree-like directory structure that was divided into sub-forums for the relevant directorates/departments or offline communities. There was a (department-nominated) moderator for each section, whose role was to reply to inquiries. Such administrators had authority to delete or edit any posted comments and to terminate membership if necessary.

Results reveal that the main challenge faced by all three organizations during the operation of the virtual communities was to maintain control of the forum, especially when the forum is open-ended when it seems that unsocial behavior can become an issue. Although larger virtual communities have more issues requiring management attention, Organization A and Organization B demonstrated that involving members of the online community in the control process can be extremely effective.

The second challenge faced by all three organizations was to provide a timely response to inquiries and every organization reported delays from lack of cooperation and bureaucracy. However, top management support in Organization A and Organization C played a major role in overcoming this problem.

6.6.4.4 Obtaining meaningful dialogue

On the subject of obtaining meaningful dialogue, all three case organizations agreed that creating a management team (*preparation issue*) that has moderators with good communication skills, and formulating participation rule and regulations (*development issues*) improve the quality of discussion and motivates citizens to use social networking services, as shown in **Table 6.6**.

All the case organizations reported the need to consider operation issues. The analysis revealed consensus on the need for the management team to consider controlling the discussion, to consider carefully the desired interaction characteristics such as the objectives, target group, and to consider seeking top management support and obtaining technical support. Finally, a quick response to concerns and engage citizens in the operation also motivates users.

Table 6.6: Critical factors for obtaining meaningful dialogue

Factor	Involves	Organization		
		A	B	C
Preparation issues	<ul style="list-style-type: none"> • Creating the management team and Recruiting qualified moderators 	√	√	√
Development issues	<ul style="list-style-type: none"> • Formulating participation rules and regulations 	√	√	√
Operational issues	a. Technical support	√	√	√
	b. Top management support	√	√	√
	c. Defining objectives	√	√	√
	d. Defining target group	√	√	√
	e. Controlling the discussion	√	√	√
	f. Responding to inputs	√	√	√
	g. Engage citizens in the operation	√	√	√

6.6.5 Case study findings-citizen side

This section represents the citizen perspective to aid understanding of the factors that influenced their decision to engage with the online discussions. The interviews revealed that the main community features needing consideration to motivate people to use the social networking service are usability, accessibility, functionality and design.

Applications that motivate people to use the service are not only easy to use but make it easy to navigate between discussions pages, easy to post comments to, and easy to search for topics. One participant stated,

“...the community should be easy to access and navigate. Also it should be easy to use.”

Users also want choice. One participant stated,

“The site should use more than one channel such as SMS.”

Others want more functionality,

“...the government platforms should have RSS feed features.”

In addition to multiple access channels, the main accessibility features motivating people to use the social networking service is a free service and fast Internet speeds,

“...financial or non-financial rewards will motivate people to participate. Also, the quality of the discussion topics will attract people to participate.”

Furthermore, participants reported that the site should provide features that enable the user to add emphasis to their discussion,

“... [the site should have] motivation features, syndication feeds, and text treatment features (i.e. fonts, color and size).”

Controlling the discussion is important for maintaining its quality, and this was reported as a key motivator for people continuing to use the online social network to interact with government institutions. Prominent display of clearly expressed participation rules, removal of undesirable inputs (from users lacking dialogue skills), and regular observation of the discussion by proficient moderators all helped. As one participant stated,

“...I think the community has to be controlled well to motivate people to participate. The community has to be observed regularly. There should be a sufficient number of moderators. Undesirable input should be deleted.”

Another participant stated that,

“...there should be rules to limit the participation age. Also, moderators need to have communication skills and a wide knowledge of the discussion topics.”

Another reason for control is to maintain security of personal information. Some participants concealed their identity by using a nickname, perhaps due to a culture where dialogue or open criticism of authority is not generally accepted. Privacy can also be maintained by the use of authorization access controls and the latest firewall applications to protect the virtual community from outside attack. As one participant pointed out,

“...the rules need to be made clear and presented in obvious places on the website.”

Furthermore, the virtual community must be managed to enhance the interactions between the actors. The majority of the participants reported that receiving a response to their input is one of the main motivators for continuing to use the online social network for interacting with government institutions. Participants like to have feedback on their comments and they like the organization to respond, which also leads to increased trust. One participant stated,

“...I think the organization has to be ready to implement their comments in order to motivate people to participate again. Also, it has to give feedback about what action has been taken regarding the people concerns”

Others said,

“...there should be a concern from the other side to our input. For example, they should consider our suggestions and opinions.

“...Once I feel there is a response from the organization that indicates they are not defending their opinions but listening to other opinions, I will continue.”

On the other hand, slow or no responses to members' inputs can lead to breakdowns in communication.

Finally, the virtual community needs to be actively managed to motivate members to participate in the discussions and to want to drive the discussions. The majority of the participants reported that the discussion topic and the perceived equality and freedom of speech all encourage them to join the discussion. On the other hand, defamation, repetition of discussion topics and ignoring people's opinions inhibits them from participating. For example, participants stated,

"...it depends on the discussion topic. If the topic is interesting I will regularly participate."

"...the presence of motivating issues such as providing freedom to state our opinions and response to my input will attract me to participate."

"...the discussion objective should be clearly stated and the discussion topic should be interesting to the community...the posted comment should be free from undesirable input...the participants have to be given similar opportunities to express their opinion...the statement has to be supported with evidence."

6.6.6 Summary

This section has reported participants' views regarding successful implementation and use of online social networking services. The organizational perspective highlighted the key issues requiring attention if successful implementation of an online social networking application, and a meaningful dialogue, are to be achieved. The citizen perspective highlighted key motivational issues requiring attention if citizens are to trial the online services on offer, and keep on using them.

6.7 Towards a second-cut Management-level framework

As indicated in **Table A7.3** in **Appendix 7**, 31 themes (subcategories) emerged from case study data collected from the organization and citizen sides during Phase II of the research. These were grouped into five main factors: *Preparation issues*, *Development issues*, *Activation issues*, *Operational issues*, and *Motivation issues* and compared with the literature review findings from Phase I. In

comparing the findings, it is apparent from **Table 6.7** that the majority of the case study findings agree with the extant literature.

Table 6.7: Support for the first-cut Management-level Framework

Factor	Includes	Findings	
		Phase I	Phase II
Preparation issues	1. Planning	L	S
	2. Create the implementation team	L	S
	3. Create the management body	L	S
	4. Define requirements	L	S
Development issues	5. Design issues	L	S
	6. Usability issues	L	S
	7. Set rules/regulations/policies	L	S
	8. Engage the users	L	S
	9. Application type	-	S
	10. Scalability	L	W
Activation issues	11. Testing	L	S
	12. Marketing	L	S
	13. Training and awareness	L	S
	14. Accessibility issues	L	S
Operational issues	15. Top management support	L	S
	16. Control	L	S
	17. Security	L	S
	18. Privacy	L	S
	19. Technical support	L	S
	20. Dialogue issues	L	S
	21. Response	L	S
	22. Rewards	L	S
	23. Equality	L	S
	24. Engage citizens in the operation	-	S
	25. Commitment to act	L	W
Motivation issues	26. Development issue (ease of use)	L	S
	27. Activation issue (free of charge)	L	S
	28. Operation issues (response, rewards, equality, privacy)	L	S
	29. Quality of the discussion	L	S
	30. Discussion topics	L	S
	31. Subjective norms	L	W
Key			
(Phase I): (L) Factor detected in literature		(-) Factor not detected in literature	
(Phase II): (S) Strong case support		(W) Weak case support	

6.7.1 Preparation issues

The case study findings strongly support the literature findings and highlight that good preparation from the outset is one of the critical factors for the successful implementation and use of online social networking applications. Preparation for implementing the social networking application began by creating the implementation team and the management team, defining responsibilities and requirements, and formulating the implementation plan. Team makeup included technical and non-technical staff led by the IT senior manager. In short, creating an implementation team facilitated the whole implementation process.

Not mentioned in the literature is the value of a management body that contains members from the citizen side, since the results indicate that a facilitator chosen from the citizen side helps discussions to be facilitated in more of a user-friendly manner.

6.7.2 Development issues

The case study findings strongly support the literature findings and highlight that certain development features are critical to the successful implementation and use of online social networking applications. From the organization side, the case study findings reveal the value of including a selection of application features that increase motivation, dialogue, dissemination and control, and support Arabic features, engages users in the development process. Similarly, the need to consider such usability issues as the application needing to be easy to use and easy to control is a critical issue. The need to formulate the interaction and sharing of information rules and regulations is also a critical issue.

Not mentioned in the literature is that selection of an appropriate application is a critical issue if people are to be motivated to use the social networking service. Similarly, the need to consider such design issues as the need for the application to offer good control of user input is also not mentioned in the literature. Finally,

there is only weak support for the need to consider the scalability of the application. Consequently, this factor was excluded from the final framework.

From the citizen perspective, various usability issues were highlighted, such as the application needing to be easy to use, easy to navigate and easy to post comments. Furthermore, extra functionality (design issues), such as a syndication feed, attracts people to use the virtual community.

6.7.3 Activation issues

The case study findings strongly support the literature findings and highlight that certain activation issues are critical to the successful implementation and use of online social networking applications. These serve to motivate people to engage with and maintain interactions with government institutions via a social networking service. From the organization's perspective, the results reveal that testing the developed application, implementing a marketing plan, and providing training and awareness programs are all vital critical features that also help to overcome resistance to change.

From the citizens' perspective, and not mentioned in the literature, were accessibility issues; namely free access which users report motivates them to interact with government institutions.

6.7.4 Operational issues

The case study findings strongly support the literature findings and highlight that certain operational issues are critical to the successful implementation and use of online social networking applications. From the organization's perspective, the cases revealed that controlling the discussion, assuring security and privacy, formulating interaction policies and regulations, providing technical support, and defining the discussion objectives and participants are all critical issues for maintaining a meaningful dialogue with citizens. In addition, although not highlighted in the literature, is that it is vital to engage members from the citizen

side in the operations team. Securing top management support also provides the authority often needed to streamline the user inquiries/response process and allows operations team members to be rewarded for successful operation of the virtual community.

From the citizen's perspective, the cases revealed that responding to people's concerns, rewarding participants, preserving anonymity, and security concerns were reported to be key issues. On the other hand, there was only weak support for the need for the government to commit to actions based on the users' input. Consequently, this factor was excluded from the final framework.

6.7.5 Motivation issues

The case study findings provide mixed levels of support for the literature and highlight that motivation issues relevant to development, activation and operation issues are critical for obtaining and maintaining interactions between citizens and government institutions when offering networking services. From the citizen perspective, providing services free of charge and ensuring they are easy to use was reported to be critical when motivating users to interact online with government. Citizens also reported that operational issues, such as responding to people's concerns, rewarding participants, preserving anonymity, outcome expectations equality, discussion topic and quality of the discussion all need to be considered to motivate people to maintain meaningful dialogue. There was only weak support for the influence of subjective norms; consequently, this factor was excluded from the final framework.

6.8 Testing the integrity of the second-cut Management-level framework

The Phase II (case study) results of this research provided support for five factors that were identified in Phase I, which authors had judged were necessary to ensure successful implementation and use of online social networking applications. To examine further the refined, second-cut Management-level Framework (MLF) for completeness and variation, Phase III of this research involved participatory

action research with a government institution in the Muscat Governorate. The project concerned two separate Web 2.0 online social networking initiatives that were successfully implemented by the organization and were used by citizens.

The action research data collection and analysis procedures were detailed in earlier Sections 3.11.5 and 3.11.6, respectively and **Appendix 8** offers a narrative of the Phase III participatory action research activities. Similar to the Phase II activities, the main source of data was interviews and observation.

6.8.1 Key action research findings and insights

6.8.1.1 Main challenges to the implementation process

During the action research process, the researcher observed that two major challenges inhibited the early implementation stages of the social networking tool. First, there was a technical problem during the testing of the forum model that delayed the implementation process. The Web developer described this as being due to conflicts between two system modules, and the situation was only fixed when one module was deleted. The second major challenge concerned the plan to invite at least one employee from each department of the organization to join the management team. Poor response and a general lack of interest was attributed by the IT manager to staff perceiving that their workload would increase dramatically. In the event, the IT department was forced to operate the online interactions, which added to IT staff workloads.

6.8.1.2 Obtaining a meaningful online dialogue with citizens

Table 6.8 summarizes use of the two social networking applications during the first five months of their operation, when (mostly male) participants posted a total number of 100 comments on 18 separate topics. The quality of the posted comments was high when judged by their relevance to the topic and by the proportion containing new ideas, suggestions, or opinions. However, several issues still required consideration so that a meaningful online dialogue might be attained. This included the need to create a management team, to set clear

interaction regulations and rules, and to assess regularly the posted comments for undesirable content.

Table 6.8: Use of the social networking applications (first 5 months)

Characteristic	Application A	Application B
Tool used	Discussion forum	Blog
Discussion topics selected by	Users	Organization
Number of topics	12	6
Number of posted comments	43	57
Participant gender (from name)	79% (M) 12% (F) 9% (Unknown) *	61% (M) 19% (F) 20% (Unknown) *
Quality (based on relevance to topic)	98%	83 %
Quality (based on proportion of new ideas suggestions/opinions... noted)	93%	83%

* Identity concealed

6.8.2 Support for the second-cut Management-level Framework

As indicated in **Table A7.6** of **Appendix 7**, 20 themes (subcategories) emerged from the data collected from the organization side during Phase III of the research. These were grouped into five main categories: *Preparation issues*, *Development issues*, *Activation issues*, *Operational issues* and *Motivation issues* and compared with the findings from Phase I and Phase II of this research. The further insights provide support for the major issues described in the second-cut of the MLF, and these will now be described in terms of the different stages of implementation, **Table 6.9**.

Table 6.9: Support for the second-cut Management-level Framework

Factor	Includes	Findings		
		Phase I	Phase II	Phase III
Preparation issues	1. Planning	L	S	√
	2. Create the implementation team	L	S	√
	3. Define requirements	L	S	√
	4. Create the management body	L	S	√
Development issues	5. Design issues	L	S	√
	6. Usability issues	L	S	√
	7. Formulating rules/regulations	L	S	√
	8. Engage the users	L	S	X
	9. Application type	-	S	√
	10. Scalability	L	W	X
Activation issues	11. Testing	L	S	√
	12. Marketing	L	S	√
	13. Training and awareness	L	S	√
	14. Accessibility issues	L	S	√
Operational issues	15. Top management support	L	S	√
	16. Control	L	S	√
	17. Security	L	S	√
	18. Privacy	L	S	√
	19. Technical support	L	S	√
	20. Dialogue issues	L	S	√
	21. Response	L	S	√
	22. Rewards	L	S	X
	23. Equality	L	S	√
	24. Engage citizens in the operation	-	S	X
	25. Commitment to act	L	W	X
Motivation issues	26. Development issue (ease of use)	L	S	X
	27. Activation issue (free of charge)	L	S	X
	28. Operation issues (response, rewards, equality, privacy)	L	S	X
	29. Quality of the discussion	L	S	X
	30. Discussion topics	L	S	X
	31. Subjective norms	L	W	X
Key (Phase I): (L) Factor detected in literature (-) Factor not detected in literature (Phase II and III): (S) Strong case support (W) Weak case support (√) Factor detected in practice (X) Factor not detected in practice				

6.8.2.1 Preparation issues

Regarding the influence of certain preparation issues on the implementation of online social networking application, the action research findings support the findings from Phase I and Phase II of the research. In short, action research findings show that thorough preparation both facilitated and drove the addition of

online social networking applications into the Web portal. The IT senior manager led the implementation team and team members also played major roles in the development process as they defined, designed and carried out the process. In addition, the team leader used his authority to encourage the contractor to complete the action plan within the designated schedule. A management team that was created by the IT department observed the online community for evidence of undesirable input and responded to people's concerns and participation rules and regulations were stated on the introductory page. However, the original intention to expand the management team to include members from the other departments and citizens' side failed due to perceived workload.

6.8.2.2 Development issues

The action research findings support the need to consider technical characteristics such as application type, participation rules and regulations and usability since several of these were observed to motivate users to engage with the Blog and the discussion forum, which utilized feed channels. The discussion forum application contained controls that could be used to edit or delete undesirable posted comments.

While observation revealed that the Web developer followed the Web design standard W3C during development, there is no evidence that users were engaged at that time. The implementation team was definitely engaged in the design stage as was evidenced by the Web developer presenting two versions of the proposed Blog model to the implementation team while the researcher was present.

6.8.2.3 Activation issues

The action research findings support the Phase I and Phase II findings regarding the need to consider issues that motivate people to interact with government institutions via a social networking service. The virtual community was tested before it was finally activated, by sending SMS messages to regular stakeholders and promoting the new social networking services on well-known social

networking sites like www.s-oman.net and www.almajara.net. In addition, registration requirements were relaxed to increase accessibility to the virtual community. Although participants could input without the need to register, a filter was applied to reduce the possibility of undesirable input. The implementation team also provided training programs to help develop user and operator skills.

6.8.2.4 Operational issues

The action research results support the Phase I and Phase II findings about the need to consider certain operational factors in order to obtain meaningful dialogue. The Blog was designed to collect user comments and feedback on delivered online services. Each discussion had a brief sentence stating the main objectives of the interaction, the discussion topic and the target group.

To cater for the different cultures the Blog was made available in Arabic and English. Efforts to improve the quality of the discussion included creation of a management team and participation rules and regulations stated on the introductory page. Discussions were regularly observed and controlled to reduce undesirable inputs, respond to people's concerns and solve technical faults. All participants had equal opportunity to participate in the discussions and there were no limitations for a specific group of people. Participants had the opportunity to hide their name for reasons of privacy. Security and privacy concerns were also considered according to the organization's own IT security and privacy rules.

Regarding the influence of top management support on the operation of the virtual community, no evidence was collected from the organization about rewarding the operation team. However, it is possible this was a timing issue as such similar rewards are usually presented at the end of the year.

6.8.2.5 Motivation issues

Because of time limitation, this citizen side aspect was not considered as part of Phase III of this research.

6.8.3 Summary

This section has reported the Phase III (participatory action research) findings that either support or refute aspects of the second-cut Management-level framework. The Phase III results provide support for all the factors that were identified in Phase I and subsequently confirmed during Phase II as being necessary for successful implementation and use of online social networking application; at least as pertains to the Oman government sector. The final Management-level Framework is presented in the next section.

6.9 Final Management-level Framework

This section presents the final Management-level framework. This consists of a number of key factors that require consideration at the management level in order to ensure successful implementation and use of online social networking tools; at least within Omani government sector. The framework is presented in **Figure 6.3** with each factor then briefly defined.

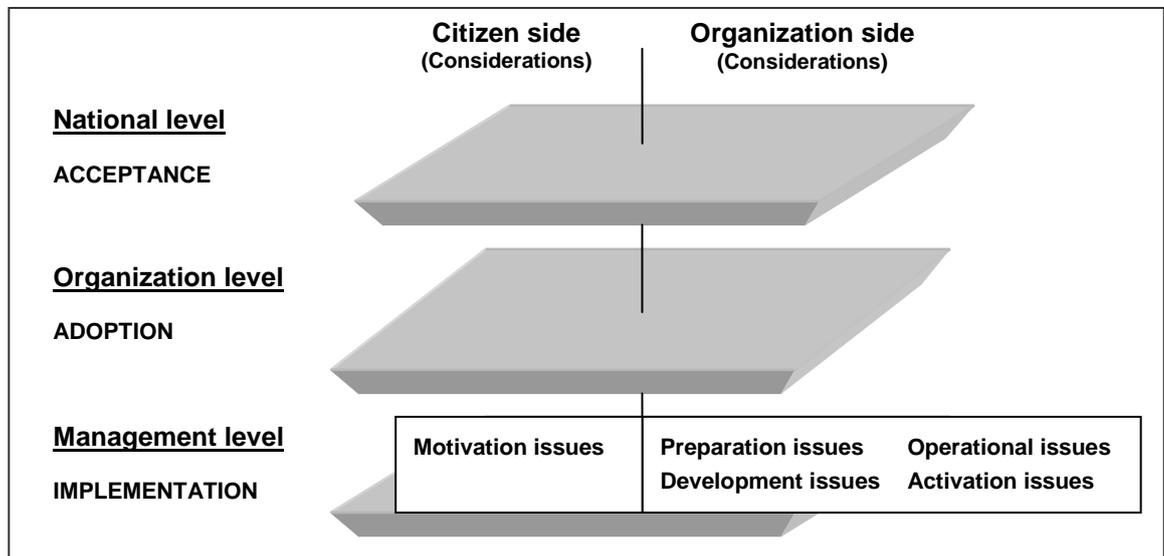


Figure 6.3: Final Management-level Framework

6.9.1 Preparation issues

Preparation issues are organization side considerations relevant to the initial groundwork that is necessary by managers when embarking on a project for implementing Web or other technology-based applications for achieving

government-citizen meaningful online dialogue. Preparation issues include the initial planning, creation of the implementation team and management body and agreeing their responsibilities, defining basic hardware and software requirements and formulating an implementation plan. Good preparation positively influences the implementation process. The implementation team facilitates and drives the implementation process.

Implementation team membership should include IT and business staff since in addition to an appreciation of IT potential, an understanding is gained of current business processes and organization needs. Ideally, the team leader will have good leadership skills and will hold a sufficiently senior position in the organization to have the authority to overcome implementation obstacles. At least one member needs a thorough knowledge of social media applications. Clear statements about implementation objectives and target group provide focus for decision-making regarding interaction characteristics and tool selection. It is also valuable to include citizens within the management body so that decisions are more likely to be user-friendly right from the outset.

6.9.2 Development issues

Development issues are organization side considerations relevant to the development or selection of Web or other technology-based applications that is necessary by the implementation team for motivating the use of social networking services for achieving government-citizen meaningful online dialogue. It includes the application type and its usability and accessibility, end user engagement in the development or customization of the application, and clarity in defining the rules and regulations designed to achieve meaningful dialogue

A government agency can choose to purchase a readymade social networking application or it can create its own. If pursuing the latter course, a content management system able to support social networking services can provide relatively easy integration with other in-house systems. Alternatively, the service

may be outsourced to a third party private channel, or to a public channel like Facebook, Twitter, YouTube, etc.

Outsourcing to a well-known public channel is useful for motivating citizens to use the social networking service, since people are generally keen to use applications with which they have some familiarity. Similarly, when considering usability and accessibility features, it is advisable to adhere to the W3C standard during the application design and development stages.

Outsourcing the social networking service is advisable when the organization lacks the needed technical infrastructure or human resource capabilities needed to operate the community and provide technical support. Outsourcing to a public channel or another local social networking site can offer access to a broad audience at low/no cost as the channels are already widely accepted for social networking. However, because these may lack controls, some people may be cautious due to some cultural barrier. In any event, achieving meaningful dialogue requires close control of the discussions via regular observation by a sufficient number of observers or moderators.

6.9.3 Activation issues

Activation issues are organization side considerations relevant to the appropriate establishment of online social networking service that implementation team needs to consider to attract users (citizens, employees) to use the service. It includes testing, awareness, educational programs provision, marketing and free access.

It is also necessary to attract people to join the community via well-known channels such as mobile devices and other public social networking sites. Users also prefer to interact with government institutions offering free access and multiple access channels.

6.9.4 Operational issues

Operation issues are organization side considerations relevant to the operation of a virtual online community that management team needs to consider for achieving meaningful online dialogue with citizens. It includes top management support, control of the discussion, consideration of dialogue characteristics, responses to inputs, participant rewards, citizen engagement in the operation of the virtual community, security, privacy, equality and technical support. It is vital that the organization offers good control for the online community as this motivates people to join the community and participate in its discussions. Control is achieved by clearly defining participation rules and stating them prominently on the platform and this can help to minimize undesirable inputs. Privacy and responsibility aspects should be included.

People are motivated to join in when the topics are interesting and are of concern to them. Also, a variety of discussion topics is desirable because people have different interests. Professional moderators that possess good communication skills and knowledge about the discussed topics are able to control and drive such discussions.

6.9.5 Motivation issues

Motivation issues are citizen side considerations relevant to the management of the online community dialogue that motivate citizens to join the community and participate actively in the discussions. It includes such development, activation and operation issues as providing a quick response to enquiries, rewarding good inputs, treating participants equally, moderating a high quality discussion, and providing multiple discussion topics. It also includes providing easy to use and free of charge services, and protecting the privacy of personal information. People are interested when they know what happens to their input and they are keen to know to what extent the organization fulfills its commitments to them. Responding to peoples' input in a timely fashion increases interactions between the organization and the community and thereby increases trust. Similarly, if the

team can reassure the online community about their privacy, and equality concerns this all motivates citizens to join the online community and participate in its discussions.

6.10 Management-level secondary research questions

This section (briefly) addresses the Management-level secondary research questions presented earlier in Section 2.9. Secondary research questions are discussed as a set in Chapter 7.

6.10.1 Secondary research question SQ5

What are the key characteristics of online dialogue that Omani government organizations aim for, and how are they achieved?

The Management-level Framework identified four key characteristics of desirable online dialogue that were sought by the Omani government organizations in this study:

1. Openness
2. Responsiveness to citizens
3. Equality
4. Freedom of speech

Regarding how such a dialogue was achieved, the research noted the need for eight aspects in particular:

1. A capable management team
2. Clear interaction objectives
3. Clear participation rules
4. Multiple discussion topics
5. Guaranteed privacy of personal information
6. Guaranteed security of personal information
7. Provision of services that are free of charge
8. Provision of services that are easy to use.

These factors were initially identified via a literature review, before being further investigated using case studies and action research with the Muscat Governorate in Oman. Due consideration of them is critical because they help to determine the successful outcome of the e-Government initiative.

6.10.2 Secondary research question SQ6

What are the management factors that influence the implementation of online social networking applications in Omani government organizations?

The Management-level Framework, described above identified several inhibitors and drivers for the implementation and use of online social networking services in Omani government agencies. These factors were identified through a literature review and applied in an Omani e-Government context, using selected cases from MG as an example, to modify the factors.

6.11 Chapter summary

This chapter has described the development, over three separate research phases, of a Management-level Framework (MLF) for the successful implementation and use of online social networking tools within the Omani government sector. The final Management-level Framework comprises the identified critical issues which should be considered if Web 2.0 applications are to be successfully implemented that support effective government-citizen interactions. These were categorized as *preparation issues*, *development issues*, *activation issues*, *operational issues*, and *motivation issues*, at least as pertains to the Omani government sector.

It is judged that the developed framework can be used in other Arabic nations that have similar characteristics to Oman. The next chapter summarizes the key findings from the research and presents conclusions on the research questions discussed in this chapter and the last two chapters.

Chapter 7: Discussion

7.1 Summary of the research and its findings

In spite of the rapid increase in commercial applications that exploit Web 2.0 social media, still relatively little is known about the challenges that government organizations face when they adopt Web, or other technology-based applications, and offer them to citizens. This is especially true in developing, non-Western regions such as the Middle East. Consequently, a program of research was formulated to address the overarching research question:

What are the critical success factors for Omani government organizations seeking to implement Web (or other online technology-based) applications to achieve meaningful government-citizen dialogue?

Prior e-Government research mainly involves quantitative studies that examine the outputs from e-Government processes (e.g., Deakins and Dillon, 2002; Gilbert *et al.*, 2004; Moon, 2002). Such secondary data analysis has rarely built new theory (Lips, 2008; Yildiz, 2007) and the majority of the studies have involved e-Government initiatives in Western cultures.

The present study provides a holistic view of the national, organizational and management-level factors judged critical for the adoption and use of online social networking applications within e-Government contexts. Mixed research methods were used, which provided the researcher the opportunity to contribute to knowledge, not only via development of a practical and robust, integrated framework, but also through conducting mixed methods qualitative research. In addition, the study offered the researcher an opportunity to document many important aspects relevant to the adoption and use of online social networking services for achieving government-citizen interaction and sharing in government institutions, from both the organization and citizen side perspectives.

Oman was used as a case to develop the research model because of the researcher's interest and experience, as well as the identified gaps in knowledge. Similar to other GCC countries that aim to use ICT in combination with human capital as a key driver, the Omani government has recently worked hard to achieve inclusive, sustainable developments that help people attain their hopes, ambitions, needs, and expectations. His Majesty Sultan Qaboos in his first delivered speech in 1970 promised his people a modern government that can provide a better life for them. In 2003, and with the purpose of providing better services, the Omani Government launched eOman, a strategy aimed at improving the quality of services that government delivers to citizens. Since then, economic, political and technical government support has increased to accelerate a transformation to e-Government.

Although great strides have been taken to utilize ICT within government sectors, a performance gap still exists between Oman and other nations. For instance, the United Nations classifies New Zealand as an advanced nation in e-Government development, whereas Oman is still in the early stages (UN, 2005, 2008). In these terms, the research purpose can be described as one of developing and testing a theoretical framework of successful adoption and use of online social networking tools within the Omani government sector, to help reduce the knowledge gaps regarding the use of e-Government in Arabic cultures. Specifically, the researcher intended to bring his exposure to New Zealand and other Western nations' experiences to bear to assist the transformation of Oman into a digital society and support its sustainable development.

7.1.1 National-level findings relevant to the primary research question

According to Rogers (1995), the first stage of the organizational innovation adoption process includes gathering information about the innovation and evaluating the value of the adoption. Critical evaluation not only includes organizational capability, but identification of external issues due to their

important influence on the organization that can shape organizational change (e.g., Bryson, 1966). In the absence of prior research on the influence of external factors on the adoption of online social networking tools, this study began by addressing the primary research question from a national (Omani) perspective. Key findings were documented into a framework named the National-level Framework (NLF), which was developed using mixed research methods over three major phases: Phase I (literature review); Phase II (case study research); and, Phase III (participatory action research). This approach provides an example of triangulating research methods to build a more robust research model.

Regarding the primary research question, "**What are the critical success factors for Omani government organizations seeking to implement Web (or other online technology-based) applications to achieve meaningful government-citizen dialogue?**", this study has identified four key factors in the National-level Framework (NLF) that need to be considered to ensure successful acceptance of Web, or other technology-based, applications for achieving government-citizen interaction and sharing of information within the Omani government sector (**Infrastructure** and **Political issues** on the organization side; **Digital divide** and **National culture** on the citizen side). The factors identified were originally derived from the literature. Then three Omani government institutions in the Muscat Governorate (MG) were used as cases to refine the literature findings. Finally, a participatory action research case study with a single Omani government institution was used to test the completeness of the proposed model. As a result, the National-level Framework provides a model for practitioners to follow when intending to adopt online social networking services, and as such it is debatable whether it may be more widely applied to other non-Omani government sectors demonstrating similar characteristics.

A key finding of this study was the general acceptance of the provision of online social networking services by Omani government institutions and their use by citizens. The findings suggest that successful adoption and use of social

networking services requires due consideration of four factors at the national level, as summarized in **Table 7.1: Infrastructure, Digital divide, National culture, and Political issues.**

The importance of considering availability of proper IT infrastructure was verified in the Omani government sector. Consideration of the availability of broadband services is critical because higher access speeds facilitate online interactions by enabling large numbers of people to easily interact online at the same time. Conversely, lack of broadband can inhibit acceptance of the adoption of online social networking services. This confirms the findings of Aladwani's (2003) study, which concluded that IT infrastructure affects the development of e-Government services in the Arabic context. In addition, it confirms findings regarding the influence of IT infrastructure in the adoption of e-Government initiatives (e.g., Al-Khouri and Bal, 2004; Hasan, 2003; UN, 2010).

Table 7.1: National-level: strong influencers of OSN acceptance

Factor	Includes	Consideration 'side'	
		Citizen	Organization
Infrastructure	1) Broadband services	S	S
Digital divide	2) Awareness and training programs	S	-
	3) Internet access skills	S	-
	4) Internet access cost	S	-
National culture	5) Identity	S	-
	6) Criticism culture	S	-
	7) Dialogue culture	S	-
Political issues	8) Government (financial, political and technical) support	-	S
	9) Legislation or lack of it	-	S

The present study found that, because of a lack of broadband services in most of the local areas of Oman, the government has provided economic, political and technical support to develop IT infrastructure. Thus, planned growth and diversification of the economy, and establishing strategies and regulations to liberalize the ICT sector have created new sources of demand for the Internet,

which in turn motivate foreign investment in the ICT sector. As a result, a second Internet Services Provider has entered the market, which has likely helped to expand broadband service offerings and reduced Internet access cost. This has increased the number of Internet users and encouraged some government institutions to offer new online services, including Web 2.0 applications. However, limited broadband service is reported to be a major inhibitor to the adoption and use of online social networking services from the perspective both of Omani government institutions and of citizens. This indicates that more government support needs to be given to the ICT sector in Oman to accelerate a transformation into e-Government.

This study also found that consideration of digital divide gaps is another critical issue for the successful adoption of e-Government social networking services. It may be concluded that lack of awareness about the value of online services, lack of knowledge about how to use the services, and Internet access cost can all inhibit the ability to offer online social networking services to citizens. The study found that Internet applications are popular among students, either because of the technical alignment that exists between educational programs at the various levels and/or development of the ICT sector. This contrasts with large numbers of the older generation and the poor who do not access the Internet due to illiteracy, poverty or some cultural barrier. This finding is consistent with earlier studies of the barriers to e-Government services adoption in developing and developed nations (e.g., Aladwani, 2003; Deakins *et al.*, 2002, 2007c; Foreman *et al.*, 2000; Ho, 2002; NZ E-Commerce Strategy, 2000). For example, Reddick (2010) found that income and education both influence citizens' participation with online e-Government services.

The Omani government has recognized the importance of bridging digital divide gaps with training and educational programs designed to leverage ICT skills. In addition, it provides financial support to those on low incomes to help them access

the Internet. However, digital divide barriers remain one of the major inhibitors for the adoption and use of online social networking services and other government online services, indicating that more government support is needed to enhance the development of e-Government in Oman.

One of the unique features of online social networking services are that they can facilitate online interactions and sharing of information between unlimited numbers of Internet users. However, this study has found that national culture strongly influences the adoption and use of online social networking services. If government institutions do not give due consideration to protecting identity and to the culture of criticism and dialogue, it is likely many citizens will continue to be excluded. Some people might be discouraged from using social networking services if they are forced to reveal their identity or because of participation rules, or for reasons of the quality of the discussion. This has been shown especially true in the Omani government sector where the main social features involve multiple languages and the Islamic religion. In addition, the Arabic culture is strongly characterized as being hierarchical and masculine, and one that prefers to avoid uncertainty while also not favoring the interests of the individual (Hofstede, 1987: 2003; Kabasakal and Bodur, 2002). This finding supports the research on transparent and open government (Bertot *et al.*, 2010), which highlights that a culture of transparency (already) embedded within the governance system is a critical success factor for the acceptance of ICT intended to promote transparency in government organizations.

Findings reveal that Omani government organizations have created online platforms having the common spoken languages (Arabic and English) and attempt to motivate people to participate by facilitating access and improving the quality of the discussions. They allow citizens to register for online social networking services using either their own name or an assumed identity behind which they can hide. In addition, management teams moderate online discussions in line with

set rules. Concealing identity and controlling discussion in this way helps to avoid any social issues that might arise from differing opinions and enables members to express their opinions freely.

Thus, this study concludes that appropriate consideration of national culture barriers can facilitate meaningful dialogues by helping government institutions set appropriate participation rules in line with aspects of national culture that motivate different groups of people to join the online community. This finding supports the work of Noveck (2004) and Witschge (2004), who suggest that obtaining meaningful dialogue requires that the discussion should be free from censorship and that all members are treated equally.

Another critical factor for successful adoption of online social networking services at the national level, as highlighted by this study, is consideration of political issues. This is because government financial, technical, and political support can all enhance the adoption of online social networking services. Economic and technical aid can help to expand broadband services and reduce Internet access costs. Provision of programs to leverage ICT capability plus subsidized Internet access for low income people can also help to bridge digital divide gaps. Similarly, political support for the principle of freedom of speech, which is ultimately evidenced in the online interaction policies, can motivate people to participate in online discussions and express their opinions freely.

Conversely, lack of political support can inhibit the adoption of online social networking services, and this has been observed in Oman where the study found that limited broadband services and the lack of protection offered by current legislation are major inhibitors to the adoption of online social networking services. On the other hand, Oman's monarchical governance system is a strength, which is evidenced by a government that has worked hard to implement his Majesty Sultan's call to government institutions to speedily enhance their

performance and facilitate services using ICT. Consequently, there is great competition between government institutions to adopt e-Government initiatives. In addition, the government's economic and technical support is gradually expanding the broadband services needed by government institutions wishing to offer new online services.

7.1.2 National-level findings relevant to secondary research questions

In addition to the identified critical factors for the successful adoption of online social networking applications at national level, consideration of the secondary research question (SQ1), “**What are the external factors that inhibit/drive the development of e-Government in Oman?**”, has helped develop understanding about the development of e-Government in Oman.

Firstly, this study has found that transformation into e-Government was mainly driven at national level by government support (financial, technical, and political) and by social change. This supports international research findings where, for example, nations have developed and implemented a national e-Government strategy to drive the transformation into digital society. An example is New Zealand, where the government has implemented a national digital strategy that establishes both digital legislation and digital infrastructure (Department of Internal Affairs, 2012e).

This study found that the main (external to the organization) inhibitors to the development of e-Government are infrastructure, digital divide, national culture, and lack of relevant (Arabic) content. In the main this is consistent with earlier finding, where the researchers found that the main challenges to the transformation to e-Government include: infrastructure (Aladwani, 2003; Al-Khoury and Bal, 2004; Hasan, 2003; UN, 2010), digital divide (Aladwani, 2003; Chatfield and Alhujran, 2009; Deakins *et al.*, 2002, 2007c; Ho, 2002; Noce and McKeown, 2008; Reddick, 2010), and national culture barriers (Albusaidy and

Weerakkody, 2008; Al-Hujran *et al.*, 2011; Khalil, 2011). However, previous research has not highlighted the lack of Arabic Web content as an inhibitor, which may help explain why the Omani government sector has been slow to transform into an e-Government paradigm.

7.1.3 Organization-level findings relevant to the primary research question

With regard to the primary research question, "**What are the critical success factors for Omani government organizations seeking to implement Web (or other online technology-based) applications to achieve meaningful government-citizen dialogue?**", this study has identified six key factors in the Organization-level Framework (OLF) that need to be considered to ensure successful adoption of Web, or other technology-based, applications for achieving government-citizen interaction and sharing of information within the Omani (local) government sector (**Strategic issues, Citizen orientation, Organizational capabilities, Organizational culture, Top management support, and Resistance to change**). In addition, it offers insights into the secondary research questions relevant to this level. The factors identified were originally derived from the literature. Then three Omani government institutions in the Muscat Governorate (MG) were used as cases to refine the literature findings. Finally, a participatory action research case study with a single Omani government institution was used to test the completeness of the proposed model. As a result, the Organization-level Framework provides a model for practitioners to follow when intending to adopt online social networking services, and as such it is debatable whether it may be more widely applied to other non-Omani government sectors demonstrating similar characteristics.

This study showed that there has been only limited adoption of Web or other technology-based applications by Omani government agencies within the Muscat Governorate. It identified that the adoption of such Web or other technology-based applications are subject to: *Strategic issues, Organizational capabilities,*

Organizational culture, Top management support and Resistance to change influences, which require critical consideration if online social networking services are to be further diffused among government agencies.

As shown in **Table 7.2**, three important *Strategic issues* driving the organization's decision to offer OSNs are the need for a clear *vision* regarding the use of ICT, clear *objectives* for the purpose of using the services, and a clearly identified *target group* orientation. This supports research findings about the importance of planning when creating successful e-Government projects (e.g., Hazlett and Hill, 2003; Miller and Williamson, 2008).

Table 7.2: Organization-level: strong influencers of OSN adoption

Factor	Includes	Consideration 'side'	
		Citizen	Organization
Strategic issues	1) Vision	Not applicable	S
	2) Objectives		S
	3) Target group		S
Citizen orientation	4) Focusing on citizens needs and expectations		S
Organizational capabilities	5) Financial resources		S
	6) Human resources		S
	7) Technical resources		S
Organizational culture	8) Rules and regulations		S
Top management support	9) Providing resources		S
	10) Speeding up adoption process		S
	11) Overcoming challenges		S
Resistance to change	12) Lack of resources		S
	13) Risk of undesirable inputs		S
	14) Risk of adding extra work load		S

It seems that in the absence of a documented IT strategy the decision to adopt IT innovation will likely depend on individual beliefs and experiences of IT managers and senior managers and/or on the level of support offered by central government. The case findings from the Omani government sector indicate that

although the investigated organizations did not have a documented IT strategy, they were pioneers in the adoption and use of online social networking services.

In Organization A and Organization C, the IT department suggested possible adoption of online social networking services and this received approval from top management. Similarly, the idea to adopt online social networking services in Organization B originated with the IT department and was approved by the next level authority. These cases indicate that good local experience and knowledge about IT innovations can drive the adoption of IT innovation even when there no documented IT strategy. On the other hand, lack of interest and knowledge might inhibit the adoption of innovation when there is no documented IT strategy.

Table 7.2 also indicates that government institutions with a strong *Citizen orientation* that have paid attention to citizens' needs and expectations, are more likely to offer online social networking services. This study found that new online social networking services are driven by the organizations' wish to further enhance interactions and communication with citizens and better understand concerns. This finding supports the argument that increased citizen engagement in government activities, such as via decision-making, policymaking and services design and delivery, can produce many important benefits for the institution and for citizens. These can include improved services delivery, strengthening the government-citizen relationship, enhancing innovation, and improving decision-making (e.g., Irvin and Stansbury, 2004; Macintosh, 2003; Osborne and Gaebler, 1992; Schedler and Summermatter, 2007). In short, online social networking services are more readily accepted and adopted by government institutions that actively interact with citizens. Conversely, a reluctance to adopt online social networking services could be due to a lack of rules/regulations concerning government-citizen information sharing, and/or a failure to appreciate the value of giving more attention to citizens' needs and expectations.

This study found that consideration of *Organizational capabilities* is another critical factor for successful adoption of online social networking services, in particular concerning *Financial resources*, *Human resources*, and *Technical resources*. It seems that availability of the needed budget, skilful ICT staff, and adequate organizational IT infrastructure are all likely to drive the adoption of online social networking applications. Although government institutions can choose to access well-known commercial social networking platforms that do not require a subscription fee, such as Facebook, Twitter and YouTube; creating and operating a social networking platform requires a well-defined budget to acquire the required hardware and software and a management team. These findings agree with earlier authors, who state that lack of central government funding is a major inhibitor to e-Government initiatives in developed and developing nations (e.g., Heeks, 1999; Ho, 2002; Norris *et al.*, 2001); as is a shortage of qualified IT staff (e.g., Al-Nahas, 2006; Bwoma and Huang, 2003; Heeks, 1999; Ho, 2002; Moon, 2002; Norris *et al.*, 2001).

Table 7.2 indicates that *Organization culture* is a critical factor for successful adoption of online social networking services. The study found that implementing online social networking services can lead to changes in the organization's rules, responsibilities and policies. In Organization A, for example, the adoption of online social networking services was observed to change the organizational rules, responsibilities and policies. For example, a management team was created to control and drive the online interactions and communicate directly with citizens. This finding is consistent with existing literature on the critical factors for successful implementation of e-Government initiatives (e.g., Rose and Grant, 2010).

The study also found that the *Rules and regulations* aspect of organizational culture is influenced by the scale of social networking. For example, in Organization A the social networking platform was operated by four local

authority bodies, which were created to provide online interaction and communication policies, daily operating activities, and technical support. This enabled good control of the online discussions and a reasonably prompt response to stakeholder inquiries. On the other hand, the operation of online social networking services in Organization C, which was under the auspices of the IT department, added extra load to their existing responsibilities and among other things led to long response times to people's posted concerns.

Table 7.2 shows that consideration of the degree of *Top management support* is important for successful adoption of online social networking services, as this can play a critical role in leading organizational change by encouraging the diffusion of online social networking services among organizational units. On the other hand, lack of support can inhibit or delay adoption. This finding is in line with earlier e-Government transformation studies, which found that top management can improve organizational awareness of the new ways of conducting government and can provide the necessary *Resources* to facilitate e-Government initiatives (e.g., Ebrahim and Irani, 2005; Ho, 2002). For example, top management in Organization A used its authority to *overcome the adoption challenges* and *speed up the process*. However, the level of top management support is likely to be influenced by organizational capability and managers' awareness of the value of offering online social networking services. Further research could usefully focus on the main adoption inhibitors by focusing on organizations which do not have any experience in implementing Web-based communication applications.

Finally, consideration of the degree of *Resistance to change* is a critical factor to the successful adoption of online social networking services by the organization. The study found that this can inhibit the diffusion of online social networking services among the organization's operating units. This is in line with earlier IT innovation studies in government organizations (e.g., Heeks, 1999; Ho, 2002; Moon, 2002; Norris *et al.*, 2001). This study found that some government officers

resisted change due to a lack of human, technical and financial resources, or because changes needed to be made to organizational structures. The study also found that some employees resisted change due to their lack of requisite ICT skills and a perception that the adoption of online social networking services would add extra load to their responsibilities. Organization A attempted to limit resistance by providing training and educational programs, in addition to securing strong support from top management.

In summary, *strategic issues, citizen orientation, organizational capabilities and culture, top management support and resistance to change* can all influence government organizations to adopt Web or other technology-based applications for achieving meaningful dialogue with citizens. A clear IT strategy roadmap, adopting a citizen orientation, securing top management support and adequate human, financial and technical requirements can all drive adoption. Conversely, lack of organizational capabilities, organizational culture, and resistance to change can all inhibit adoption. It is judged that these factors need to be considered at the organization level if Web or other technology-based applications are to be successfully implemented that support effective online government-citizen interactions and communication.

7.1.4 Organization-level findings relevant to secondary research questions

In addition to the identified critical factors for the successful adoption of online social networking applications at organization level, consideration of the secondary research questions provides further theoretical insights. Addressing the second secondary research question (SQ2), ‘**What are the organizational factors that inhibit/drive the development of e-Government in Oman?**’, found that the transformation into e-Government was mainly driven at the organization level by the intention to enhance convenience for citizens and to increase efficiency, effectiveness, transparency, innovation opportunity, and accountability. This supports statements by early e-Government scholars who claimed that

transformation into e-Government would add value both to the organization and to society, such as decreased operational costs and improved quality (e.g., Basu, 2004; Gichoya, 2005; Gilbert and Balestrini, 2004; Warkentin *et al.*, 2002); and that social benefits would include improvement of the accessibility of services and a decrease in the cost of customer services (Gilbert and Balestrini, 2004; Reddick and Frank, 2007).

The findings reveal that the Omani case organizations have harnessed the Internet to provide people with more convenient access to information and services, which has led to improved quality of services, increased transparency and more opportunities for better understanding stakeholder needs and expectations. In addition, the cases revealed that no documented organizational IT strategy existed to drive the transformation into e-Government; rather, that rollout of the new online services was driven by individual experience and effort.

It was found that the main inhibitors to the development of e-Government from the organizational perspective were resistance to change, lack of financial resources and qualified IT staff, lack of support for the IT workforce, and IT workforce migration to the private sector. This supports early research that the main e-Government adoption challenges include infrastructure (Al-Khourri and Bal, 2004; Bwoma and Huang, 2003) and IT workforce capability (Bwoma and Huang, 2003).

Addressing the secondary research question (SQ3), '**How do Omani government organizations use Web 2.0 applications?**' revealed that Web 2.0 applications in the Omani government sector are being used to involve citizens in decisions and policy, to improve government performance, and to improve citizen satisfaction, knowledge creation, and problem solving ability (Devas and Delay, 2006; King *et al.*, 2007; Macintosh, 2003). This study shows that the case organizations use the discussion forum social networking application to share information and thoughts

about the organization's activities and delivered services, listen to people's concerns, solve problems, and provide advertising space. The forum was also used internally as an opportunity to increase understanding about organizational responsibilities, activities and viewpoints regarding stakeholders' concerns.

Finally, addressing the secondary research question (SQ4), '**What are the advantages and disadvantages for Omani government organizations of using social networking services?**' reveals that the main advantages include better communication with stakeholders and their needs, a new communication channel for educating and training employees and citizens, and a new source of income and innovation. These advantages appear to have increased stakeholder trust and satisfaction, and have helped build relationships and solve problems. Such significant advantages are countered by the main reported disadvantage of the misuse of services.

7.1.5 Management-level findings relevant to primary research question

With regard to the primary research question, "**What are the critical success factors for Omani government organizations seeking to implement Web (or other online technology-based) applications to achieve meaningful government-citizen dialogue?**", this study identified five key factors in the Management-level Framework (MLF) that need to be considered to ensure successful implementation of Web, or other technology-based, applications for achieving government-citizen interaction and sharing of information within the Omani (local) government sector (**Preparation issues, Development issues, Activation issues, and Operational issues** on the organization side; **Motivation issues** on the citizen side). The MLF sought to identify critical factors from two perspectives: The organization side focused on identifying the critical factors for successful development and installation of social networking tools; creating a virtual community; and operating the online discussion. The citizen side focused

on identifying critical factors for motivating citizens to participate in online discussions.

The factors identified in **Table 7.3** were originally derived from the literature. Then, three Omani government (case) institutions in the Muscat Governorate (MG) were used to refine the findings. Finally, participatory action research with a single Omani government institution was used to test the completeness of the model. As a result, the Management-level Framework provides a model for practitioners to follow when intending online social networking services, and as such it is debatable whether it may be more widely applied to other non-Omani government sectors demonstrating similar characteristics.

Several factors are identified as being critical to achieving successful OSN implementation: *Preparation* is an organization side consideration that involves initial *Planning*, creation of an *Implementation team* and a *Management body*, and assigning their responsibilities, and defining basic hardware and software Requirements. Lack of preparation can lead to delays or even failure to deliver the project; a finding that is consistent with other studies showing that planning is a critical issue for successful implementation of e-Government projects (e.g., Hazlett and Hill, 2003; Heeks, 2006a, b), and for government-citizen interactions and communication (e.g., Miller and Williamson, 2008).

Table 7.3: Management-level: strong influencers of OSN implementation

Factor	Includes	Consideration 'side'	
		Citizen	Organization
Preparation issues	1. Planning	-	S
	2. Create the implementation team	-	S
	3. Define requirements	-	S
	4. Create the management body	-	S
Development issues	5. Design issues	-	S
	6. Usability issues	-	S
	7. Formulate rules/regulations	-	S
	8. Application type	-	S
	9. Engage the users	-	S
Activation issues	10. Testing	-	S
	11. Marketing	-	S
	12. Training and awareness	-	S
	13. Accessibility issues	-	S
Operational issues	14. Top management support	-	S
	15. Control	-	S
	16. Security	-	S
	17. Privacy	-	S
	18. Technical support	-	S
	19. Dialogue issues	-	S
	20. Response	-	S
	21. Rewards	-	S
	22. Equality	-	S
	23. Engage citizens in the operation	-	S
Motivation issues	24. Development issue (ease of use)	S	-
	25. Activation issue (free of charge)	S	-
	26. Operation issues (response, rewards, equality, privacy)	S	-
	27. Quality of the discussion	S	-
	28. Discussion topics	S	-

An implementation team that has clearly defined responsibilities for facilitating the implementation process is in a strong position to propose suitable solutions to a rich variety of challenges, which might for example include the need to recruit or to overcome misgivings that the Web 2.0 social networking service will lead to its unsocial use. The study also found that if implementation and operation of online discussions is to be successful, management of the online community calls for creation of a management team that clearly states the rules for registration and for participation. Notwithstanding the methods used, it appears that a separate

management body is more effective than affiliating the operation of the discussion to the IT department. This situation is especially acute in respect to open ended discussions that require sufficient numbers of qualified moderators, regular observation to manage undesirable inputs, and timely responses to people's concerns.

This research also found that defining basic hardware and software requirements is critical, as IT organizational structure directly affects the implementation of online social networking applications and the operation of the online discussions. Adequate IT infrastructure can facilitate the *implementation* of online social networking applications with the needed characteristics. In this regard, social networking services may be readily integrated with applications that are open source, and/or make use of an IT infrastructure backbone that is both secure and supports high traffic volumes. In the Muscat Governorate, all three case organizations hosted social networking services on separate Web servers and this aided control and helped assure security and the capacity to process high traffic volumes. On the other hand, weak infrastructure implies a lack of organizational capabilities and to mitigate this it is tentatively suggested that government institutions might subscribe to well-known public social networking services like Facebook or Twitter. However, because this research did not focus on the opportunities and challenges of outsourcing social networking services, further research is needed on this aspect.

The study found that organization side consideration of *Development issues* is another critical factor for successful implementation of online social networking services; in particular concerning *application type, design issues, usability issues, formulating the rules* for registration and participation, and *engaging end users* in the development stages. The results indicate that 'people' (i.e. citizens and staff) are most interested in using applications with which they are already familiar. Hence, to encourage participation it follows that planned Web-based application

should aim to be similar to others that are already popular. It also indicates that the implementation team is most interested to select an application that increases motivation, dialogue, dissemination and control, and also supports Arabic features. Such *Design issue* considerations are consistent with research showing that applications need to be carefully chosen to motivate users to engage with an online community (Andrews *et al.*, 2002).

Regarding *Usability*, the study also found that people tend to be more satisfied when OSN applications are easy to use (easy to navigate, easy to post comments to, and easy to register with). This is consistent with research showing that ease of use is among the most significant factors influencing user adoption of new technologies (Agarwal and Prasad, 1998; Al-Hujran *et al.*, 2011; Davis, 1989; Horst *et al.*, 2007; Kim *et al.*, 2006; Macintosh, 2003; Rogers, 1995; Venkatesh and Davis, 2000).

The study also found that people tend to be more satisfied when OSN applications have clear participation *Rules/regulations*, without which some participants may leave the platform if their comment is ‘unfairly’ removed by the management team.

The success of social networking applications also depends on the willingness of staff and citizens to engage with the implementation process and to continue to use the application. The results show that *Engaging users* in the development process leads to selection of appropriate features; a view shared by many authors that user participation is a requirement for successful IS development (Axelsson *et al.*, 2010) and implementation of e-Government initiatives (Rose and Grant, 2010).

Activation issues are another important organization side consideration. This includes *Testing* the developed application, implementing a *Marketing* plan,

providing *Training and awareness programs*, and offering ready *accessibility* are all vital critical features that help to overcome resistance to change, and serve to motivate people to engage with and maintain interactions with government institutions via social networking services. The study found that thorough testing of the application before it is offered to the public is critical, to avoid unexpected technical problems.

While the marketing plan of Organization A included many publications to promote the newly offered social networking service, the ubiquity of the Internet and mobile devices makes it advisable to also use such channels to motivate end-users. The consideration of formulating marketing plan in lines with earlier e-Government adoption studies. For example, an earlier study in Oman found that lack of IT knowledge and the absence of marketing campaigns negatively affected people's decisions to try the technology and inhibited decision-makers from implementing or adopting technology initiatives (AlShihi, 2006). Thus, new services need to be marketed well to gain needed exposure.

Training and educational programs also needs to be considered in order to develop the social networking services and increase the number of users. This is consistent with research suggesting that leveraging human capital is one of the issues of consideration for enhancing the effectiveness of e-Government practice (Ferguson *et al.*, 2007; Moon, 2002). The present study shows that resistance to change was mostly due to a lack of knowledge about the benefits of using the services, lack of skills in using the social networking services, and the perceived risk of unsocial use. Training and educational programs help to overcome resistance by increasing knowledge about the advantages of using the social networking services, and every case organization did offer a training program. If potential users are to be motivated to join the network the organization must consider questions such as whether registration will be offered free of charge. This is consistent with research

suggesting that considering accessibility issues is a critical aspect for successful implementation of e-Government project (Abanumay *et al.*, 2005).

Important *Operational issues* for maintaining a meaningful dialogue with citizens include: *Security, Privacy, Top management support, Control, Technical support, Dialogue issues, Response, Rewards, Equality, and Engaging citizens* in the operation of the virtual community. People are very concerned about the security and privacy of their personal information. Some citizens might also prefer to hide their identity due to some cultural reason. Earlier research has also found that risk management related to security and privacy are among the major adoption challenges to e-Government online services (e.g., Abanumay *et al.*, 2005; Al Abri *et al.*, 2009; Al-Khouri and Bal, 2004; Belanger and Hiller, 2006; Bwoma and Huang, 2003; Choudrie *et al.*, 2004). However, technical support can be harnessed to help overcome these challenges. In Organization B, for example, the social networking platform was operated by a team, which consisted of administrators, moderators, and supervisors. The administrators were IT staff who had the responsibility to manage the technical details required for running the virtual community, such as modifying the structure, providing technical support and developing the tool.

Top management support also needs to be considered in order to facilitate the management of the interaction and sharing of information with citizens. For example, top management support in Organization A, and in Organization C, played a major role in overcoming the problem of providing a timely response to inquiries where the reported delays were attributed to lack of cooperation and bureaucracy.

Investigated organizations are very concerned about controlling the virtual community as this motivates people to join the community and participate in its discussion. Control is achieved by clearly defining participation rules and stating

them prominently on the platform and this can help to minimize undesirable inputs.

IT departments within highly bureaucratic environments especially, might not be able to respond quickly enough because they lack detail regarding how other departments operate. In Organization B and Organization C, slow response to people's concerns was reported as one of the management challenges; neither organization had created a separate management body and so IT department staff were required to operate the discussion forum.

In addition to selecting competent moderators/facilitators, it seems that defining the dialogue characteristics; including the discussion topic, the target group, the shared language and using simple text are all central to improving the quality of the dialogue and motivating users to join the discussion. This supports Bohm's (1996) suggestion for obtaining meaningful dialogue through defining the purpose, subject matter, and interaction duration.

It also appears that engaging citizens in the management team is critical, to facilitate the ongoing operation of the social networking platform. For example, in organization A, the management team had citizen members in order to overcome the problem of maintaining control of the interactions, particularly when the network became popular. This also helped Organization A to overcome the problem of needing to recruit an internal management team to moderate the online discussions.

Motivation issues are an important citizen side consideration in the Management-level to ensure successful implementation of Web or other technology-based applications intended to achieve meaningful government-citizen dialogue. Motivation issues include a range of *Development*, *Activation* and *Operation* factors. In addition, factors relevant to *Discussion quality* and *Topic* are critical to

attracting citizens to use the social networking services and to continue participating in the discussions.

Responding to and *rewarding* good input can motivate users to join and to continue participating in the discussions; simply put, they want to know what happened to their discussion contribution. They also like to know to what extent the organization is fulfilling its commitments to them. Timely responses to people's contributions can strengthen the relationship, leading to more trust that will attract new people to join the online community. However, in the case organizations, slow response times to inquiries was attributed to lack of commitment by the relevant departments. Neglecting citizens in this way can lead to less interest in participating. This finding is in line with recent social media adoption and use studies, which found that social factors (word-of-mouth, critical mass, image and subject norms) have a significant impact on user's satisfaction and intention to continue to use social media applications (Chen *et al.*, 2012).

To help achieve a quality online dialogue, a key role of the management team is to control and encourage discussions, respond to questions and allow equal opportunities for every citizen to participate in online discussions. This supports arguments that social network participants must always be treated as being active; must be allowed to participate equally, and must 'see' each other; the conversation must also be available to all members and be free of censorship (Noveck, 2004; Witschge, 2004). Within the Muscat Governorate, the case organizations had used different approaches to control their online virtual community.

Overall, this study concluded that (at the management level) good preparation plus consideration of issues relating to development, activation, operation, and motivation are all critical to the successful implementation of Web 2.0 applications and to encouraging quality online dialogue. Lack of adequate IT infrastructure, resistance to change and recruiting a management team are major

management challenges, as is responding to people's concerns online in a timely fashion and handling inappropriate contributions. Thus, the main interaction characteristics and management issues needing to be considered to obtain a meaningful dialogue are: defining the objectives and the target group, defining the scope of the discussion topics, defining the participation policies and rules, having a qualified moderator and controlling the discussion. Paying attention to these issues improves the quality of the discussion and motivates people to participate.

7.1.6 Management-level findings relevant to secondary research questions

In addition to the insights offered from addressing the primary research question, addressing the secondary research question (SQ5) “**What are the key characteristics of online dialogue that Omani government organizations aim for, and how are they achieved?**” provides further theoretical insights.

Table 7.4 outlines the main characteristics of online dialogue. The study found that these characteristics are important for obtaining meaningful dialogue by improving the quality of the discussion and motivating citizens to use the social networking services. The majority of issues have been highlighted in the literature as critical for the adoption of e-Government services or obtaining meaningful dialogue.

The MLF suggested the main characteristics of the online dialogue are as follows: Findings show that having a clear interaction **Objective** improved the quality of the discussion by reducing citizen contributions and directing interactions into predefined **Topics**. The research showed that traditional means of government-citizen interactions consume time and cost on both sides; in large part due to a centralized management approach that increases bureaucracy. In contrast, the main objectives of the online social networking services emphasized better communication with citizens by providing extra communication channels;

improved efficiency and effectiveness of government-citizen interactions; better understanding of citizen's needs and expectations; and aiding citizen's understanding of government agency capabilities.

Table 7.4: Main dialogue characteristics

Characteristics	Authors
Objectives	Bohm (1996)
Discussion topic	Bohm (1996)
Openness	Stanley <i>et al.</i> (2004)
Security	Al-Busaidy and Weerakkody (2009), Andrews <i>et al.</i> (2002), Deakins <i>et al.</i> (2002), Solomon and Schrum (2007)
Privacy	Al-Busaidy and Weerakkody (2009), Andrews <i>et al.</i> (2002), Deakins <i>et al.</i> (2002)
Ease of use	Agarwal and Prasad (1998), Davis (1989), Venkatesh and Davis (2000)
Free of charge	This study
Response	This study
Equality	Stanley <i>et al.</i> (2004)
Freedom	This study
Management team	This study
Rules/regulations /policies	This study

Findings also emphasize that **Openness** should be a key characteristic of online government-citizen interactions because this is one of the key motivators to participation in online discussions. Citizens want to know what has happened to their contribution. Similarly when interacting and sharing information with government organizations, people are very concerned about the **Privacy** and **Security** of their personal information, and prefer an online service that features of **Ease of Use** and **Free of Charge**. Quick **Response** to citizen input is another key characteristic of online government-citizen interactions, being a key motivator to continue participating in online discussions. A key characteristic of online government-citizen interactions is (perceived) participant **Equality**, which is a key motivator to continued participation in online discussions. **Freedom of Speech** is also a key motivator to participating in online discussions, For example, freedom to select a username was a key motivator as evidenced by the majority of participants preferring to hide their real identity when joining the online

discussions. Naturally, the **Management Team** can play a major role in controlling online discussions by editing or deleting undesirable posted comments, and by responding to participant inquiries pertinent to their department. People tend to be more satisfied when the discussion platform has clear participation **Rules/Regulations**, in the absence of which some participants may leave the platform if they feel that their comment was ‘unfairly’ removed by the management team.

Addressing the second secondary research question (SQ6), ‘**What are the management factors that influence the implementation of online social networking applications in Omani government organizations?**’ provides further theoretical insights. A multitude of factors was presented in Section 7.1.5 during discussion of the management inhibitors and drivers of the adoption, implementation and use of online social networking services and the implications for management practitioners and implementation teams and operations teams respectively. Factors were identified via literature review, consideration of selected e-Government case studies, and action research within the Muscat Governorate.

7.1.7 System development methodology

Web application characteristics are generally significantly different to other kinds of software applications, making it unlikely that any single methodology can offer a complete Web application development framework (Escalona and Koch, 2002). Consequently, many development methodologies have been proposed to address the inherent complexities; each apparently with its own series of stages/phases, which may or may not be the same as other methodologies (French, 2011).

Information systems for which the requirements are unknown or are evolving often benefit from an ‘agile’ approach to application development (Beck, 2001). In contrast, it may be argued that the online social networking system developed

in this study is more suited to the type of development methodology that is well defined and systematic, because:

1. Providing a comprehensive checklist of the 'rules and regulations' governing IT systems is one way to ensure system developers comply with all applicable Government regulations, because the consequences of not doing so are high and wide ranging. This is especially true in the post 9/11 environment where larger amounts of information are considered sensitive in nature, and are shared among commercial, international, and local partners (e.g., US Government, 2007).
2. The sheer number of stakeholders involved with Web application development, and the diversity of requirements such as navigation, business process and usability all require an extensive and detailed requirements engineering process (Escalona and Koch, 2004).
3. It was observed during the course of this research that development of online social networking services intended to achieve online dialogue with citizens, always involved a highly structured process.

One highly structured approach is the System Development Life Cycle (SDLC), which dates back to the early-1980s. Later methodologies such as Prototyping (Smith, 1991), Joint Application Development (JAD) (Davidson, 1999), and Rapid Application Development (RAD) (Martin, 1989) are adjustments to the SDLC that are intended either to include users (JAD) or to speed up development and delivery of applications (Prototyping and RAD) (Kendall and Kendall, 2010; Turban *et al*, 2004). The SDLC stages together are frequently referred to simply as the 'waterfall model' (Avison and Fitzgerald, 2006) since, in this sequential model, the output of each phase acts as the input for the following phase so that the process is allowed to move downstream (like a waterfall). The advantages of such a process are that the structured process is easy to understand, the milestones well understood, and time management is easy. On the other hand, because the

requirements must be decided early on, there is a low level of flexibility and a lack of transparency for end-users.

Mapping the critical technical and non-technical implementation factors identified in this study onto the structured SDLC approach leads to the recommended development/implementation process shown in **Figure 7.1**.

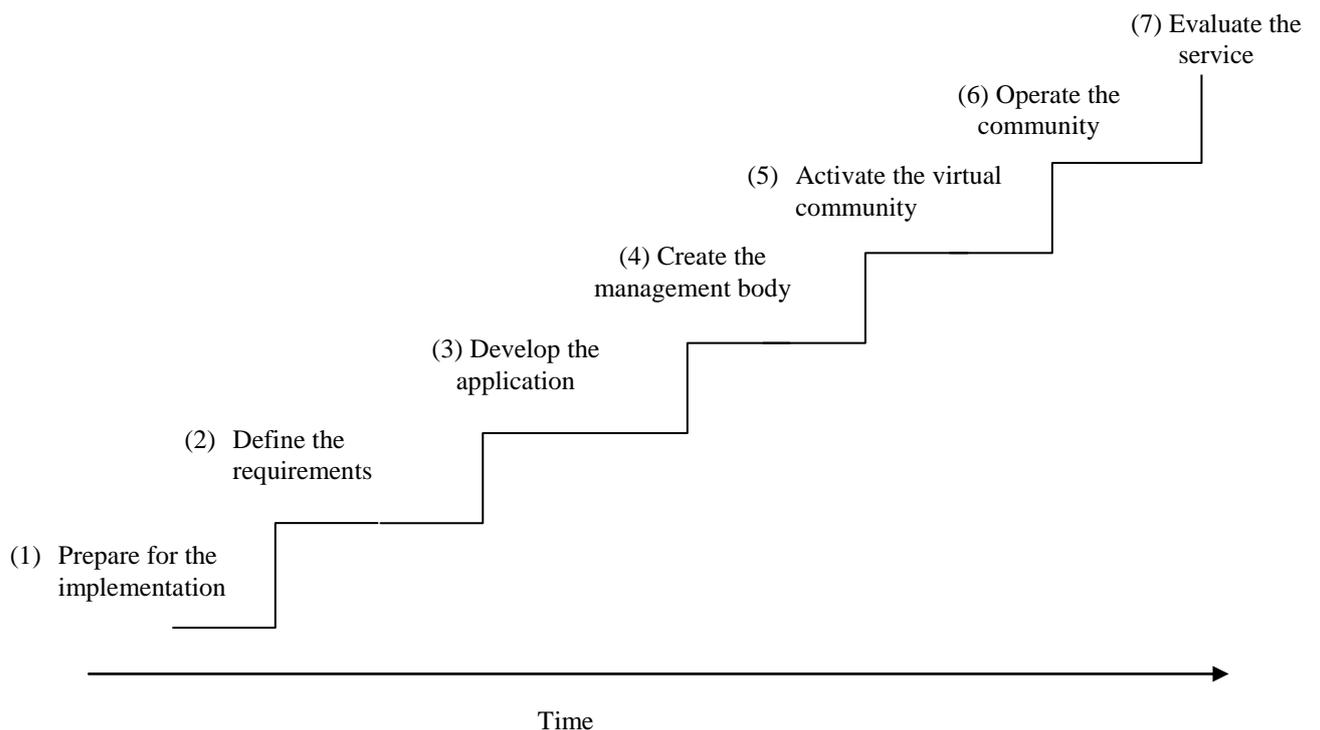


Figure 7.1: OSN development process for achieving a government-citizen dialogue

This, in broad terms, mirrors the SDLC steps (Avison and Fitzgerald, 2006) of Feasibility study; System investigation; Systems analysis; Systems design; Implementation; and, Review and maintenance.

The sequence of seven work stages can be followed by any government organization that intends to implement a Web, or other technology-based, application that is intended to achieve meaningful online dialogue with its citizens. Within each stage due consideration is given to the factors identified in

this study that overcome the specific technical and non-technical implementation challenges identified, and otherwise facilitate the overall implementation process. Further guidance is provided for decision makers and their implementation teams in Section 8.3.3 and Section 8.3.4, which present specific recommended actions arising from the Organization-level and Management-level key findings, respectively.

Stage (1): Prepare for the implementation

The first stage of the implementation of a Web or other technology-based application for achieving meaningful dialogue involves creating the implementation team and defining its responsibilities, developing a plan for the implementation and defining the challenges and critical factors. The importance of early preparation is highlighted. For example, in Organization A the newly created implementation team determined the implementation plan and conducted training and awareness programs to help overcome resistance to change.

Stage (2): Define requirements

This stage includes defining the interaction characteristics and the technical requirements. Defining requirements will help the government organization to acquire a suitable social networking application or build its own application. The main interaction requirements needing to be defined include the main objectives of the interaction, the target group, and the interaction rules and policies. Technical requirements include the hardware and software needed to integrate the online social networking service into any existing services and to operate the virtual community. It also includes other technical aspects that the application must fulfill such as security, privacy, usability; and design issues such as motivation features, dialogue features, control features feed channels, and language support. **Table A9.1** in **Appendix 9** shows different types of communication modes and their characteristics.

Stage (3): Develop the application

This stage includes building the application or customizing the selected application. Typically, a government organization can build its own application, can use ready-made applications, or can subscribe to public social networking sites. For example, Organization A and Organization B both used a ready-made application, whereas Organization C built its own. **Table A9.2 in Appendix 9** shows the capability of some selected social networking applications and sites. Similarly, **Table A9.3 in Appendix 9** outlines selected social networking applications and the resulting sites-to-dialogue characteristics map.

Stage (4): Create the management body

This stage includes creating the management team and recruiting moderators and administrators. This is essential for the operation of the virtual community since a key role of the management team is to control and encourage discussions and respond to questions. In Organization A for example, a management team was created to control and drive the online interactions and communicate directly with citizens.

If the organization intends to build its own application and then manage the virtual community, more effort will go into developing the management body, activating the virtual community and operating the community stages. Conversely, subscribing to a public social networking site requires more attention on selecting a service that satisfies the organization's main goals and organizational culture. For example, because participation polices/rules/regulations on public social networking sites are typically limited, the lack of organization control over content might encourage undesirable content.

Stage (5): Activate the virtual community

This stage includes testing the tool, and launching and promoting the new service. For example, marketing of the new service by organization A included the development of many publications, displaying the website link prominently in

most of the organization's documents and linking the website to other online media.

Stage (6): Operate the community

This stage consists of observing the discussion and controlling the input. Operating the virtual community was reported to be one of the main operational challenges because it requires frequent observation and hence recruitment of a sufficient number of moderators. For example, both Organization A and Organization B involved members of the online communities in the control process to overcome a lack of regular staff to operate the platform.

Stage (7): Evaluate the service

This stage includes evaluating the structure, content, and outcomes from the dialogue, as well as the current management approach. In Organization C for example, the management approach was modified to reduce the time taken to respond to inquiries.

7.2 Conclusions from the research design and methods perspectives

Given the meager state of knowledge, a qualitative research investigation approach was chosen to improve understanding of the adoption and use of Web, or other technology-based, applications to achieve meaningful online dialogue. Such approaches can yield rich descriptions and explanations that lead to theory building (Collis and Hussey, 2003; Creswell, 2003; Lee and Lings, 2008; Miles and Huberman, 1994; Stake, 2010). Mixed research methods were adopted in order to build a robust research model that captures the key issues requiring consideration to ensure successful organizational adoption and citizen use of online social networking services by government organizations.

Because so little was known about the mechanisms involved, triangulation of qualitative research methods enabled the researcher to develop a detailed

understanding of the phenomenon in situ. Development of the three-level research framework supports the assertion that qualitative approaches provide rich descriptions and explanations that can lead into theory building (Collis and Hussey, 2003; Creswell, 2003; Lee and Lings, 2008).

Triangulation is recommended as a tactic to overcome the potential bias that might arise from using any single method (Collis and Hussey, 2003; Jack and Raturi, 2006). As theory builders recommend triangulation of research methods to minimize the weakness that arise from using only one method (e.g., Eisenhardt, 1989), a mixed method approach was also used to develop the final model framework. This research illustrates how mixed research methods can be used in combination to develop and test a theoretical framework of online social network implementation within the government sector. In seeking to improve research credibility along in line with the views of well-known authors (including, Collis and Hussey, 2003; Creswell, 2003; Yin, 2003; Stake, 2010), the adopted mixed methods development approach involved three distinct research phases:

- Phase I (Literature Review)
- Phase II (Case Study Research)
- Phase III (Participatory Action Research).

By conducting an extensive literature review in Phase I of the research, the researcher was able to develop detailed understanding of:

- The key factors driving global e-Government initiatives
- The key characteristics of Web 2.0 applications
- Local government and its working environment; e-Government initiatives adoption and implementation processes, and virtual community and dialogue creation and operations aspects
- The key factors that influence the implementation process and uptake of online services

- The key factors that influence government-citizen interactions and meaningful sharing of information

This understanding enabled the researcher to define the research gaps and to generate the primary and secondary research questions required to narrow the gaps. Similarly, the researcher was also able to develop the tentative theoretical framework and derive the first-cut National-, Organizational- and Management-level research frameworks.

In Phase II of the research, case study method was used to refine the first-cut theoretical framework into the second-cut framework. In addition to demographic information about the organization and participants, the developed interview questions enabled the researcher to incorporate participants' experiences and viewpoints concerning:

- Acceptance and adoption of online services
- Implementation and use of social networking services
- Management of social networks

Interviews plus observations enabled the researcher to understand the real situation of the adoption and use of online social networking, and to discover the critical success factors from the perspective of the organization and the citizen. Choice of a multiple case studies design helped to bring together experiences and thoughts from different positions, educational levels, and genders. This data was collected from policymakers, decision-makers, forum operators and users. From this the researcher was able to deduce the variables influencing the adoption and use of online social networking services from the organization and citizen perspectives. This supports the claim that case study methods enable the researcher to study the phenomenon of interest within its real context, which enriches the empirical evidence gathered (Gill and Johnson, 1997; Merriam, 2001; Scholz and Tiejie, 2002; Yin 2003).

The resulting research framework documented critical issues for the adoption and use of online social networking tools in the government context. Key factors included drivers, inhibitors, challenges and key success factors for the adoption, implementation and operation of online social networking tools.

In Phase III of the study, participatory action research enabled the researcher to test the completeness of the research model. Collaboration with the Muscat Governorate enabled the researcher to track the actual implementation of Web 2.0 services and operation of a virtual community. This also helped the researcher to identify the implementation stages, challenges and critical factors. By visiting and advising the organization and taking part in the online interactions via the social networking service, researcher actions changed the nature of the interactions between the organization and its citizens, thereby leading to refinement of the second-cut research model into the final model. This supports the claim that action research brings about change in organizations and increases understanding on the part of the researcher, the client, or both in order to solve current practical problems and at the same time increases scientific knowledge (Baskerville and Myers, 2004; Dick, 1997).

7.3 Chapter summary

This chapter discussed the findings of this study and compared them to the literature. The key findings relevant to the primary and secondary research questions were highlighted and justified. In addition, key findings relevant to the research design and utilized methods were outlined and discussed.

Chapter 8: Conclusions, Limitations and Future Research

This chapter concludes the thesis by presenting the completed model and describing the contributions to knowledge from several perspectives. It also outlines practical implications for policymakers, managers and individual project teams. Finally, it outlines the main limitations of the research and suggests opportunities for future research.

Despite the huge amounts of effort and public sector funding being poured into transformational e-Government in developed and developing countries alike, still little is known about the process of how government organizations adopt Web, or other technology-based, applications and offer them to citizens to participate more closely with citizens. Thus, the overarching goal of this research was to develop a model that captures the critical success factors needed to ensure successful adoption of online social networking services by the organization, and use by citizens. The primary research question was,

What are the critical success factors for Omani government organizations seeking to implement Web (or other online technology-based) applications to achieve meaningful government-citizen dialogue?

In broad terms, an initial research model derived from the literature was refined using case study methods, before then utilising participatory action research to (further) test its validity and completeness. Thus, the final research framework was justified and triangulated using three different research methods to provide a practical working model for government organizations that intend to implement online social networking applications within working environments similar to those found in Oman's public sector.

8.1 The final model

Table 8.1 summarises the strong influencers of OSN acceptance, adoption and implementation highlighted by this study.

Table 8.1: Strong influencers of OSN acceptance, adoption, and implementation

Factor	Includes	Consideration 'side'	
		Citizen	Organization
National-level: strong influencers of OSN acceptance			
Infrastructure	1. Broadband services	S	S
Digital divide	2. Awareness and training programs	S	-
	3. Internet access skills	S	-
	4. Internet access cost	S	-
National culture	5. Identity	S	-
	6. Criticism culture	S	-
	7. Dialogue culture	S	-
Political issues	8. Government (financial, political and technical) support	-	S
	9. Legislation or lack of it	-	S
Organization-level: strong influencers of OSN adoption			
Strategic issues	1. Vision	Not applicable	S
	2. Objectives		S
	3. Target group		S
Citizen orientation	4. Focusing on citizens needs and expectations		S
Organizational capabilities	5. Financial resources		S
	6. Human resources		S
	7. Technical resources		S
Organizational culture	8. Rules and regulations		S
Top management support	9. Providing resources		S
	10. Speeding up adoption process		S
	11. Overcoming challenges		S
Resistance to change	12. Lack of resources		S
	13. Risk of undesirable inputs		S
	14. Risk of adding extra work load		S

Management-level: strong influencers of OSN implementation			
Preparation issues	1. Planning	-	S
	2. Create the implementation team	-	S
	3. Define requirements	-	S
	4. Create the management body	-	S
Development issues	5. Design issues	-	S
	6. Usability issues	-	S
	7. Formulate rules/regulations	-	S
	8. Application type	-	S
	9. Engage the users	-	S
Activation issues	10. Testing	-	S
	11. Marketing	-	S
	12. Training and awareness	-	S
	13. Accessibility issues	-	S
Operational issues	14. Top management support	-	S
	15. Control	-	S
	16. Security	-	S
	17. Privacy	-	S
	18. Technical support	-	S
	19. Dialogue issues	-	S
	20. Response	-	S
	21. Rewards	-	S
	22. Equality	-	S
	23. Engage citizens in the operation	-	S
Motivation issues	24. Development issue (ease of use)	S	-
	25. Activation issue (free of charge)	S	-
	26. Operation issues (response, rewards, equality, privacy)	S	-
	27. Quality of the discussion	S	-
	28. Discussion topics	S	-

Thus, the final model output from this research consists of three interrelated frameworks, which are positioned at the *National-level*, *Organization-level*, and *Management-level*. Collectively they contain the above critical factors needed to achieve successful acceptance, adoption, and implementation of e-Government social networking applications that citizens want to use for the express purpose of engaging with local government authorities, **Figure 8.1**.

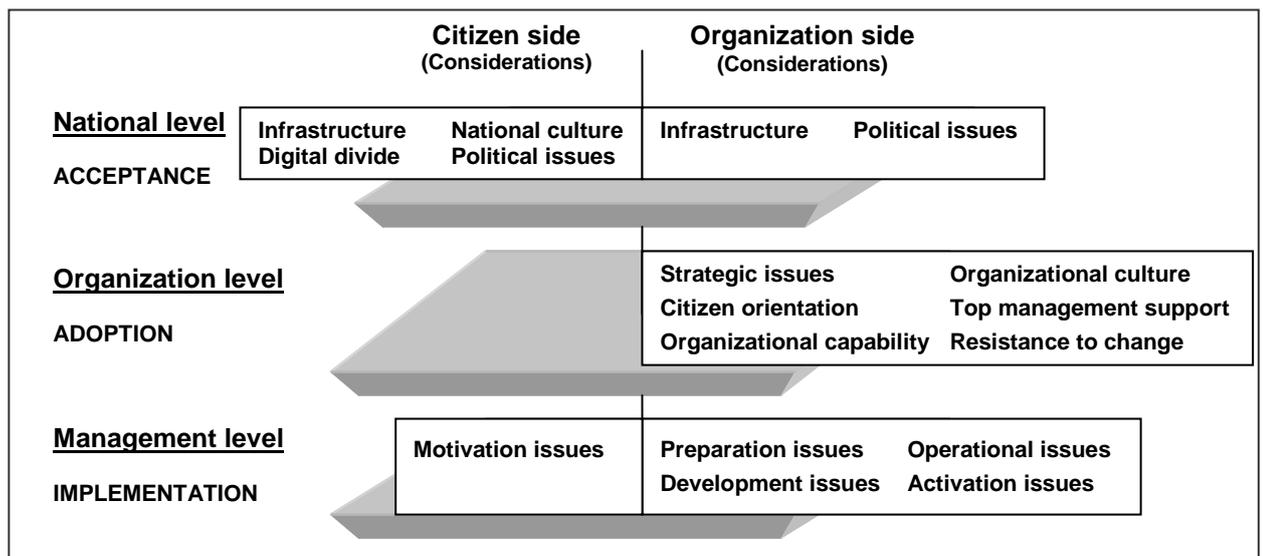


Figure 8.1: Complete e-Government OSN services adoption and use model

The *National-level framework* focused on understanding local government and its contextual working environment. Examination of e-Government adoption and implementation processes suitable for 'virtual citizen interactions', online community creation and meaningful dialogue identified social, technical, economic, governmental, legal and political factors. Overall, the study found a high level of general acceptance of online social networking services by Omani government institutions and citizens.

The Omani experience also shows that Web-based applications can offer important new opportunities for government institutions and citizens alike. By facilitating access to decision-makers and responding to citizens' enquiries, online social networking services enhance interactions between citizens and governmental institutions in ways that strengthen the government-citizen bond

and increase citizen satisfaction. For example, such facilitated information sharing of thoughts and ideas can enhance the reputation of the organization in the eyes of wider society, by offering superior service delivery options and decision-making. Finally, extra income for government organizations may be generated by new opportunities for commercial advertising. The study found that government support—meaning political, economic and technical aspects—and social changes have driven the acceptance of online social networking services adoption. In contrast, limited broadband services and other digital divide barriers, national culture barriers and political barriers can inhibit the acceptance of online social networking services adoption. Thus, consideration of the identified National-level factors is judged critical for initial acceptance of online social networking services within the Omani government sector.

The *Organization-level framework* focused on improving understanding, from the organizational perspective of how organizations choose to adopt e-Government initiatives and create virtual communities. Challenges, obstacles and key success factors derived from reviews of the literature were refined using case feedback from three Omani government civil services institutions before finally including further lessons learned from action research involving implementations of Web-based applications by an Omani civil service organization.

At the level of the organization the study found that in addition to adequate human, financial and technical resources, presence of an IT strategy, top management support, and a citizen orientation are all drivers of successful adoption. Conversely, lack of organizational capability, inappropriate organizational culture, and resistance to change can all inhibit adoption of online services. It is judged that these factors must be considered if Web-based applications are to be successfully adopted which support effective online government-citizen interactions and communication within the Omani government sector.

The *Management-level framework* focused on the implementation of online social network projects. The literature was reviewed to develop understanding of the implementation of e-Government initiatives, and creation and operation of the virtual community and meaningful dialogue from both the organization and citizen perspectives. The derived challenges, inhibitors, and key success factors were refined using feedback from three Omani government civil services institutions, before again incorporating insights gained from action research involving implementation of Web-based applications in an Omani civil service organization.

At the management level the study found that thorough preparation, technical issues, accessibility and marketing issues, and managers' consideration of operational issues and end user needs are all critical for the successful implementation of Web-based applications. Furthermore the framework revealed that creating a management team, recruiting qualified moderators, controlling the discussion, responding to inputs, defining interaction characteristics such as objectives, target citizens and participation policies and rules are critical for obtaining meaningful dialogue. These factors all help to improve the quality of the discussion and motivate people to participate in online discussions. Providing a sufficiently rapid response to citizen concerns and undesirable participant input are major challenges for management as are the implementation challenges of a lack of adequate IT infrastructure, resistance to change, and inability to recruit a suitable management team

8.2 Research contributions

This section highlights the main knowledge contributions; to the literature, to research design, and to practice.

8.2.1 Contributions to knowledge

The uniqueness of this study lies in the fact that very few studies have appeared in the literature that describe in detail the implementation of online social

networking services by government organizations intent on achieving meaningful dialogue with citizens. The majority of e-Government studies have been conducted in Western nations and few have addressed the adoption and use of online social networking services in an Arabic setting like Oman. This lack of knowledge has been highlighted by many researchers (e.g., Al-Busaidy and Weerakkody, 2009; Al-Hujran *et al.*, 2011; Andersen and Henriksen, 2005; Chatfield and Alhujran, 2009; Lips, 2008).

This research is an empirical study that specifically investigated the implementation and use of online social networking services within Omani government institutions. The findings that emerge from the study are a useful addition to, and at the same time enrich the current literature on, the adoption and use of online social networking by government agencies in general and in Arabic contexts specifically. This is mainly because this study has addressed some key adoption and use aspects about online social networking services that other researchers have been calling for. These include:

- Adoption purposes
- Adoption aspects (advantages, disadvantages, drivers, inhibitors critical success factors)
- Implementation aspects (stages, challenges, critical success factors)
- Usage aspects from the organizational perspective (motivators, inhibitors, benefits)
- Operational aspects (challenges, critical success factors)
- Impact aspects (organizational change and social change)

In addition, this study contributes to the literature by developing a research model for the organizational adoption and citizen use of online social networking services in a government context. The derived model comprises three interrelated frameworks: the National-, Organization- and Management-level Frameworks. These collectively highlight the adoption drivers, inhibitors and key success factors for the successful adoption and use of online social networking services,

several of which have not been identified by earlier research. It is suggested that this research model can be further tested and used for comparison purposes across different sectors and nations.

8.2.2 Contribution to research design and methodology

This research has contributed to research design and methodology by featuring an application of mixed research methods. The majority of e-Government studies have used quantitative approaches to examine the outputs from E-Government processes. They also favour use of secondary data sources and have rarely built new theory (Lips, 2008; Yildiz, 2007). In contrast, the present study is in line with a recent emphasis on qualitative studies to increase understanding about the adoption and use of ICT in the government sector (e.g., Heeks and Bailur, 2007; Lips, 2008; Walsham, 1993). This research contributes in this direction by utilizing mixed qualitative methods, which together provided a rich contextual understanding of the adoption and use of online social networking by government institutions.

Mixed research methods were adopted in this thesis mainly to build a robust research model. The study demonstrates how mixed research methods, extensive literature review, case study and action research, can be used to develop and test a theoretical framework of successful adoption and use of online social networking tools within the government sector.

Because little is written about the adoption of online social networking services, triangulation of the qualitative research methods enabled the researcher to develop understanding about the adoption and use of online social networking services while also providing another example of triangulating research methods to build a robust research model.

8.2.3 Contribution to the organization and management practitioners

Previous studies have demonstrated that e-Government initiatives often fail, particularly in developing countries (e.g., Dada, 2006; Heeks, 2006b). Heeks (2006a) attributes most of these failures to poor implementation processes, and to management of the project itself. Thus, this study has developed an e-Government OSN services adoption and use model suitable for managers and other practitioners who need to provide online social networking services as part of online government services. The model is significant because it is able to guide the acceptance, adoption, implementation, and operation of online social networking services by identifying specific areas that require emphasis. Also, the model can help government institutions that are already using online social networking services to think about the suitability and effectiveness of their current management approaches for obtaining and maintaining meaningful dialogues with citizens.

Finally, this study contributes to practice by recommending a 7-step development implementation process comprised of a sequence of work stages. The step-by-step procedure can be followed by any government organization that intends to implement a Web, or other technology-based, application that is intended to achieve meaningful online dialogue with its citizens. The activities contained within each stage are designed to overcome the specific technical and non-technical implementation challenges identified by this study, via consideration of the critical factors that have been shown to facilitate the overall implementation process.

8.2.4 Contribution to online social networking service implementation

The derived frameworks identify the critical factors that assure successful implementation and use of online social networking services with which citizens want to engage. Thus, for managers and practitioners contemplating whether to adopt online social networking services as part of their online government offerings, the model may be used as a stepwise guide for achieving acceptance,

adoption, implementation and ongoing operation of successful online social networking services. Finally and more generally, the framework is expected to facilitate the diffusion of Web 2.0 applications by helping management teams successfully operationalize online dialogues.

8.3 Implications for practitioners

8.3.1 Implications for government policymakers

This section summarizes the implications of the national-level key findings for policymakers, which are summarised in **Table 8.2**.

Table 8.2: National-level key findings: implications for policymakers

Key findings	Implications for policymakers	Recommended actions
<p>Driver</p> <ul style="list-style-type: none"> • Government support • Social change 	<ul style="list-style-type: none"> • Need to facilitate accessibility to the Internet • Need to bridge digital divide gaps • Need to establish online information sharing policies • Need to enhance collaboration between government institutions 	<ul style="list-style-type: none"> • Provide more government financial and political support to liberalize the ICT sector • Provide more financial and political support to low income people, such as training and educational programs, PCs and no/low access cost • Regularly update online information sharing regulations and policies • Organize regular meetings and workshops between government institutions to enable them to share knowledge and establish collaborative projects
<p>Inhibitor</p> <ul style="list-style-type: none"> • Limited broadband services • Digital divide barriers • National culture barriers Political barriers 		

The results of this study indicate that the Omani government has placed great effort into enabling the transformation to e-Government. However, the National

Level Framework (NLF) has identified several inhibitors, which include limited broadband services, digital divide barriers, national culture barriers and political issues barriers. Thus, the study suggests that there needs to be more action taken to facilitate the adoption of online social networking services and other e-Government initiatives to enhance the development of e-Government in Oman.

Mainly the study suggests that there is a need to:

- Facilitate more accessibility to the Internet by increasing access speeds while reducing infrastructure development costs. This can be done by providing more government support to liberalize the ICT sector, to motivate foreign investment, and to increase competition between Internet services providers. In short, implementing good IT infrastructure is a precursor to a successful transformation into e-Government, as suggested by Ebrahim and Irani (2005).
- Bridge the digital divide gap by providing more low-cost public access to computers and the Internet at the community level, providing more support for low-income people and extending the number of training and awareness programs to wider audiences (Chatfield and Alhujran, 2009; Foreman *et al.*, 2000; NZ E-Commerce Strategy, 2000; Reddick, 2010).
- Support online information sharing that will motivate online participation and discussion (Reddick, 2010). This can be done by regularly reviewing rules and regulations relevant to electronic publishing and online information sharing in order to guarantee privacy and security for personal information, as well as copyright protection
- Support government-to-government collaboration (Jaeger and Thompson, 2003; Accenture, 2006). This can be achieved by introducing a single platform for all government civil service organizations that centralizes government-citizen interactions and online communications channels. This can be expected to enhance collaboration between government institutions while also reducing the management requirements of operating multiple platforms

- Increase the number of education and awareness programs by offering different channels, such as mobile devices and public social networking sites. The people who are more aware of, and comfortable with, an e-Government initiative will be more likely to use that initiative (Jaeger and Thompson, 2003).
- Encourage government institutions to involve citizens in relevant policy and decision-making and development of local public services. This provides opportunity to produce better policy, build trust, gain acceptance of policy and share responsibility for policy-making (Bertot *et al.*, 2010; Bonson *et al.*, 2012; Macintosh, 2003).

It is judged that the above recommendations can also be used to drive adoption of online social networking services in nations having similar operating characteristics to Oman.

8.3.2 Implications for management practitioners

The results of this study suggest that attention should be paid by government organizations to several critical factors when they are seeking successful implementation and operation of Web-based applications. The factors, which are documented in the Organization-level and Management-level Frameworks, can guide practitioners and drive the wider diffusion of e-Government, **Table 8.3**.

Main suggestions include the need to:

- Provide great support (i.e. financial and managerial support) to the development and implementation of the IT strategy to enhance the transformation into e-Government (Rose and Grant, 2010). Moreover, there should be support for regular evaluation and updating of the IT strategy in light of changing organization and stakeholder needs. The empirical evidence of this study showed that government support is one of the key drivers for the diffusion of e-Government initiatives among government institutions

Table 8.3: Organization-level key findings: implications for managers

Key Findings	Implication for Managers	Recommended Actions
Driver <ul style="list-style-type: none"> • Quality of IT strategy • Adopting the principle of citizens' orientation • Top management support • Availability of human, financial and technical resources 	Decision-makers need to: <ul style="list-style-type: none"> • Support (financial and managerial) the development and the implementation of the IT strategy • Motivate IT workforce to work in government organizations • Utilize possible e-commerce investments such as advertisements, to support the organizational capability (financial resource). • Provide great support for the development of e-participation • Provide great support (financial and managerial support) for the implementation of e-Government projects. • Enhance the use of ICT for innovation 	Decision-makers should: <ul style="list-style-type: none"> • Set sufficient annual budgets for the development of ICT (hardware and software) • Engage stakeholders in the development of IT strategy • Motivate the IT workforce by providing regular material and non-material rewards • Set sufficient annual budgets for the development of human capital • Organize regular social activities. • Create implementation and operations teams
Inhibitor <ul style="list-style-type: none"> • Lack of organizational capabilities • Resistance to change 		
CSF <ul style="list-style-type: none"> • Top management support • Organizational capability • Retention of IT workforce 		
Challenge <ul style="list-style-type: none"> • Shortage of IT workforce • Flight of IT workforce from public to private sector 		

- Provide financial and managerial support to address problems caused by the shortage of skilled IT staff (Rose and Grant, 2010). Consider providing regular material and non-material rewards and specifying an appropriate budget for the development of human capital and supporting social activities. This should help to reduce the flight of skilled IT staff from the public to the private sector
- To increase organizational capability, explore new avenues for e-commerce investment such as offering advertisement services on the social networking platform
- Provide support for the development of e-participation by establishing policies, regulations, and rules that motivate people to participate in online interactions
- Provide financial and managerial support for the implementation of e-Government projects

- To foster shared understanding of the technology needs of business processes to meet the organization's needs, create an implementation team that has members from IT and the business. In addition, a senior officer with sufficient authority should head the team. This individual also needs to have the requisite leadership skills
- Support the operation of the social networking platform by creating an operations team that has sufficient management authority. Members of this team must all possess good communication skills

8.3.3 Implications for implementation teams

The Management-level Framework (MLF) identifies several critical factors to help practitioners implement Web-based applications that create meaningful online dialogues. In addition to identifying the main stages, the derived framework highlights actions that the implementation team needs to address. Thus, **Table 8.3** on the next page indicates that the team should:

- Begin planning early and ensure that all key stakeholders in the implementation process are involved (Rose and Grant, 2010)
- Be aware of the critical effects of IT infrastructure on potential adoption and use of online social networking services. It is important to consider the availability of broadband services within the local area, which will enable government organizations to select the appropriate Web 2.0 tool for specific predefined goals. Some social networking services need high access speeds; such as podcasting services. Furthermore, broadband services, in contrast to dial-up services, facilitate online interaction by enabling large numbers of people to easily interact and share online at the same time
- Be aware of the critical effect of social issues on the adoption and use of online social networking services, since it is important to understand the effects of the digital divide gap in the local area. This appreciation will help government organizations to select appropriate interaction channels

and a promotion strategy that motivates citizens to participate in online interactions

- Be aware of the critical effects of culture on the adoption and use of online social networking services in the local area (Bertot *et al.*, 2010). Such understanding helps government institutions set participation rules that align with accepted national culture aspects, thereby facilitating operation of online dialogue and motivating differing groups of people to join the online community for the purpose of 'rich' discussions. It is also important to understand any political factors and factions within the local area to help government institutions define appropriate online discussion characteristics and select the appropriate Web-based tool(s)
- Clearly define interaction characteristics such as objectives, rules, policies, and target group(s) to facilitate the selection/development of suitable Web-based applications. Similarly, ensure that appropriate cultural and social aspects are handled in ways that increase acceptance by citizen groups
- Consider security, privacy, usability and accessibility issues during the early design stages that facilitate access to online social networking services (Abanumay *et al.*, 2005; Al-Hujran *et al.*, 2011; Eecke and Truyens, 2010; Rose and Grant, 2010; Weir, Toolan and Smeed, 2011). For example, the Web design standard 'W3C' should be adopted to help users easily access online services. In addition, consider hosting the social networking platform on a separate server to enable higher interaction speeds
- Consider outsourcing social networking services if the organization does not have appropriate ICT infrastructure, or lacks human resource capabilities for operating the community and providing technical support. For example, subscribing to a well-known public channel like Facebook, Twitter, etc., or to other local social networking sites, can help the organization access citizens at low or even no cost

- Recruit an operations team that has well-developed communication skills and is familiar with the discussion topics. In addition, consider that citizen stakeholders might also be usefully involved in the management processes

8.3.4 Implications for the operations team

The Management-level Framework also identified the main critical factors for obtaining meaningful dialogue and motivating people to use the social networking services and participating in the discussion.

Hence, **Table 8.4** identifies the main critical factors that the team needs to focus on in order to motivate people to use the social networking services and participate in the discussions. The operations team should:

- Be aware that if citizens are to join the online community and continue to participate in its discussions, they will need constant reassurance that their security, privacy and equality concerns are being attended to
- Be aware of the critical effect on the quality of dialogue of defining appropriate interaction characteristics. The discussion objectives, duration and target group should be stated clearly at the beginning of each session
- Be aware of the critical effect on the quality of dialogue of controlling the interactions. By deleting or modifying undesirable contributions to the discussion, and regularly reminding participants about the discussion rules and regulations, undesirable inputs can be minimized and the quality of discussion improved
- Be aware of the critical effect of motivating citizens to join the discussions. People can be motivated to join posted topic by the team selecting topics that are of most interest to the community. On the other hand, offering a broad range of topics appeals to people with different interests

Table 8.4: Management-level key findings: implications for implementation teams

Key Findings	Implications For:	Recommended Actions
<ul style="list-style-type: none"> • Preparation issues • Development issues 	<p>Decision-makers need to:</p> <ul style="list-style-type: none"> • Create the implementation team and operations team • Create the operational authority • Support the implementation and operations processes • Motivate the members of the operations team • Support the development of needed IT infrastructure • Support the development of human capital 	<p>Decision-makers should:</p> <ul style="list-style-type: none"> • Create the implementation team and the management teams • Affiliate operation of the planned virtual community to a specific department (not the IT department) • Monitor implementation progress • Monitor the operation of the social networking service(s) • Encourage organizational units to cooperate with the operations team • Motivate the operations team by offering material and non-material rewards • Motivate active participation by offering material and non-material rewards
<ul style="list-style-type: none"> • Activation issues • Operation issues 	<p>Implementation Teams need to:</p> <ul style="list-style-type: none"> • Develop the implementation and operation plan • Develop a marketing strategy • Consider usability issues such as ease of use and ease of navigation • Consider accessibility issues such as access cost, registration rules and regulations • Consider management issues 	<p>Implementation Teams should:</p> <ul style="list-style-type: none"> • Aim to plan early • Clearly define interaction characteristics • Select a well-known social networking application • Consider security, privacy, and accessibility issues at the design stage • Clearly and prominently state participation rules and regulations on the front page • Outsource services if needed
<ul style="list-style-type: none"> • Motivation issues 	<p>Operations Teams need to:</p> <ul style="list-style-type: none"> • Motivate users to participate • Improve the quality of discussions 	<p>Operations Teams should</p> <ul style="list-style-type: none"> • Clearly define the interaction objectives and the target group • Respond to inquiries quickly • Observe the interactions regularly • Edit/delete undesirable inputs • Engage participants in the operations process • Send participant enquiries directly to the relevant department

- Be aware of the need to respond to citizens' inquiries as soon as possible, which motivates them to remain with the discussion. When the answer is not immediately available, participants should be told when they can expect a reply. Recent studies have shown found that intention to continue to use social media is influenced by social factors, such as word-of-mouth (Chen *et al.*, 2012).

8.4 Implications for the academe

8.4.1 Implications for research design

This study offers new insights into the use of mixed methods for investigating government organizations engaged in the complex, contradictory changes that typically characterize the transformation into e-Government. In contrast with the majority of e-Government phenomena studies that have used survey research, this study used mixed research methods to build theory about an emergent phenomenon. Phase I involved extensive literature review, Phase II case study research, and Phase III participatory action research. The need for in-depth investigation of the phenomenon led to the choice of a qualitative mixed methods approach, which provides an example of triangulating research methods to build a robust research model (Eisenhardt, 1989).

8.4.2 Implications for researchers

The derived research model provides a holistic and comprehensive National-, Organization-, and Management-level Framework for the successful adoption and use of online social networking services in the government sector; at least in Oman. However, Oman has an appointed single body government that is concerned with national and local affairs and operates within an Arabic culture. According to Hume's truism (Rosenberg, 1993), a theory may never be scientifically generalized to a setting where it has not yet been empirically tested and confirmed and the only scientifically acceptable way to establish a theory's generalizability to a new setting is for the theory to survive an empirical test in

that setting (Lee and Baskerville, 2003). Hence, researchers could tentatively use the results of this research as a platform for conducting similar studies in different cultures and operating environments, to determine whether the findings do have applicability that is more general.

8.5 Limitations

This research inevitably has limitations. One limitation rests with the choice of research approach and the methodology and data collection procedures used; since an interpretive paradigm that utilizes a mix of case study and participatory action research could be subject to other researcher's interpretations. Actions taken to minimize this possibility included the researcher providing clear justification for the chosen methodology and a description of the steps taken to maintain rigour through different phases of the research process. Similarly, consideration of the aspects of research validity, reliability, and ethics involved putting into practice various widely cited case study and action research design principles which others recommend for building theory from case study research. In addition to scrutiny at several international refereed conferences (Al Namani *et al.*, 2008; Deakins *et al.*, 2007a; 2007b; 2008a; 2008b), the overall quality of the research design was reviewed by experts at the International Conference on Electronic Government, which was held in Melbourne in 2008.

An important limitation is that the study was based in Oman, which is an Arabic country that has some unique cultural and political aspects when compared for example against Western nations. Hence, the findings from this research may be less directly applicable to other countries due to the political and cultural differences. However, the findings are expected to be relevant to other GCC settings. This is because of the similarity in the political, economic, social and cultural aspects between the GCC countries (GCC, 2012). In addition, data was collected from organizations located within a single geographical region contained by the Muscat Governorate. Further, the scope of the action research was limited to a single organization, which presently constrains the generalizability of results

to similar contexts. Finally, the scope of the study was inevitably limited due to lack of time, which meant that Phase III of the study was unable to consider comprehensively the citizen side of the Management-level Framework.

8.6 Opportunities for further research

Given the clear lack of empirical research in the area of organizational adoption and citizen use of online social networking services in general, and in the Omani government sector specifically, potential opportunity for future work is substantial. Further research is recommended into the following areas:

- The adoption and use of online social networking services by government organizations located in other nations. This is important because this will enable the generalizability of the developed research model to be tested
- (For Omani researchers especially) The case organization for this research was chosen as one example of a successful adopter of online social networking applications. Future research could usefully compare these results against those for other organizations which are located in governorates that do not enjoy the advantages enjoyed within the highly populated Muscat Governorate. This would help to confirm the identified critical adoption and use factors
- Another potential extension of this research could be to adapt it for a confirmatory study using a survey methodology. Such an approach could then examine the generalizability of the developed research framework across developed and developing nations

8.7 Final summary

This study used Oman as a case to develop the research model because of the researcher's interest and the identified gaps in current knowledge. It sought to investigate how online social networking services can be successfully implemented within government organizations operating within an Arabic context. It thus addressed the primary research question "What are the critical success factors for Omani government organizations seeking to implement Web

(or other online technology-based) applications to achieve meaningful government-citizen dialogue?” The study addressed the primary and secondary research questions by utilizing a mixed research methods approach in three major phases: Phase I (literature review), Phase II (case study research), and Phase III (participatory action research). In Phase I, an extensive review of the literature identified the main candidate factors for consideration. These were aggregated into a first-cut model consisting of three separate, though related, frameworks named: National-level, Organization-level, and Management-level frameworks. This initial model was refined using multiple case studies to yield a second-cut framework, which itself was tested for veracity and completeness using participatory action research, in which the researcher worked closely alongside a public sector organization as it implemented Web-based applications intended to involve citizens in meaningful online dialogue. This thesis has summarized the main contributions to knowledge, implications for the academic literature, and for researchers and practitioners. Limitations of the research and opportunities for further research are also described.

Overall, the study has found that there is general acceptance of online social networking services, both by Omani government institutions and by citizens. The Omani experience shows that Web-based applications can offer important new opportunities for both government institutions and citizens. Online social networking services can be used to enhance interactions and communication between citizens and government institutions, build trust, strengthen government-citizen relationships, increase satisfaction, deliver better services, make better decisions, and facilitate access to decision-makers.

The study has identified several critical factors existing at the National-, Organization-, and Management levels of the proposed framework, which should be considered by any Omani government organization that wishes to successfully adopt online social networking services. The researcher judges that consideration of these critical factors will increase the likelihood of successful organization

adoption and use of online social networking services, and will support the further development of e-Government in Oman.

At the National-level, this study concludes that government support (political, economic and technical) plus social change can increase the acceptability of online social networking services adoption. Conversely, limited broadband services, digital divide barriers, national culture barriers, and political barriers all inhibit the acceptance of adopting online social networking services. Hence, four broad critical factors require consideration if successful adoption and use of online social networking services in the government sector is to be achieved: availability of suitable IT infrastructure, digital divide issues, national culture issues, and political issues.

At the Organization-level, this study concludes that the existence of an IT strategy and a citizen orientation, plus top management support and adequate human, financial and technical requirements all drive successful adoption. Conversely, lack of organizational capabilities, a deficient organizational culture, and resistance to change all inhibit adoption of online services. It is judged that all of these factors require consideration if Web-based applications are to be successfully implemented that support effective online government-citizen interactions and communication.

At the Management-level, this study concludes that good initial planning, plus consideration of accessibility, and technical, and marketing issues are critical for successful implementation of Web-based applications and creation of a meaningful online dialogue. Consideration of operational issues and consideration of end users' needs is also paramount. The study concludes that creating a management team, recruiting qualified moderators, controlling the discussions, responding to participants' inputs, defining interaction characteristics (objectives, target group, participation policies and rules) are critical for maintaining meaningful dialogue. These factors can improve the quality of discussion and

motivate people to participate in online discussions. Untimely response to citizen concerns and unsociable online behavior are the major management challenges.

This chapter has summarized the main contributions of this research to knowledge, to research design, and to practitioners. Limitations of the research and opportunities for further research were also provided.

In closing, the continuing political unrest in the Middle East that started with the ‘Arab Spring’ uprisings in 2011 has shown how social networking can be used to mobilize citizens *against* government. The author’s sincere hope is that the deeper understanding gained from this study will encourage all governments to implement innovative information technologies that are capable of achieving a meaningful dialogue *with* citizens.

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Appendix 1: Interview Questions for e-Government Policymakers

Section 1: Acceptance and Adoption of Online Services

1. [Please describe your role in this organization (your activities, who you report to...)]
2. What main services does the organization deliver online?
3. What were the primary reasons for offering these particular ones?
4. What are the organization's goals when offering services online?
5. What are the main factors preventing the organization from further developing its online services?
6. How does your e-Government service impact citizens?
7. What types of *social networking services*² does this organization offer?
➤ If none, go to question 11
8. For what reasons did the organization decide to offer *social networking services*? (Main goals)
9. Describe the decision-making process that took place when this organization was considering whether to offer *social networking services*.
10. To what extent did the (various) stakeholders accept the *social networking services*?
11. In your view, what are (would be) the advantages of offering *social networking services* to your (various) stakeholders?
12. In your view, what are (would be) the disadvantages of offering *social networking services* to your (various) stakeholders?
13. Describe the main issues that would be taken into account if the organization is considering whether to offer a new *social networking service* to its stakeholders.

² *Social networking services* are defined as Web 2.0 technology applications that enable participants to contribute to moderated discussion forums, chat rooms and the like

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- Be sure to prompt for and define the National level issues (i.e. National culture; Digital divide; Political; and Infrastructure issues)
 - Be sure to prompt for and define the Organization level issues (i.e. Organizational culture; Commitment to act; Government forms; and Strategic Vision issues)
 - Be sure to prompt for and define the Management level issues (i.e. Dialogue issues; Technical issues; Motivation issues; and Task issues)
14. Of all of these issues, which ones are (would be) the main drivers AND which ones the main inhibitors? (may need to remind about the issues listed in the last question)
15. Overall, what are (would be) the key success factors for the organizational adoption of *social networking services*?
- If the organization currently offers no *social networking services*, go to Section 4.

Section 2: Implementation and Use of Social Networking Services

1. Please describe which features of social networking the organization considered for implementation, AND which ones were eventually implemented.
2. Please describe how the organization implemented its *social networking service*.
3. What were the main challenges/obstacles/barriers to the implementation process?
4. How were they overcome?
5. Did (and how did) the organization engage stakeholders with the service design and development issues?
6. What were the key success factors for the implementation?

-
7. To what extent have internal AND external stakeholders accepted the new service?

Section 3: Social Network Management

1. Describe how the organization manages/operates its social networking service.
2. What are the main challenges?
3. What type of relationship does the organization have with its (various) stakeholder?
4. How does the organization obtain a meaningful online dialogue with citizens, in particular?
5. How do you deal with participant input?
 - Also, how do you deal with stakeholders' offline inquiries?
6. Overall, what are the main issues that need to be considered to obtain a meaningful online dialogue between citizens and local government using online social networking?

Section 4: Demographics - Organization Information

1. What main functions does this organization perform?
2. How many people work in the organization?
3. To what extent is this organization independent from central government (in managerial and financial terms)?
4. Which department has overall responsibility for management of the website?

Section 5: Demographics – (Optional) Personal Information

Gender = Male Female

1. What types of online social network do you personally use?	Wikis	Blogs	Forums	Social networking sites	Other _____	None
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OPTIONAL INFORMATION BELOW HERE

2. How long have you worked in this organization? (Years)	<1	1-5	6-10	11-15	16-20	>20
3. How long have you worked in your current position?(Years)	<1	1-5	6-10	11-15	16-20	>20
4. What is your highest level of educational achievement?	PhD	Masters	Bachelors	Cert. or Dip.	Other	School
5. What is your age group?	<20	20-29	30-39	40-49	50-59	>59

Appendix 2: Interview Questions for Citizen Stakeholders

Section 1: General Information

	Gender =	Male	Female			
1. How do you usually contact your local government authority?	Physical visit	Phone	E-mail	SMS	Other _____	I don't
2. How do you usually access the Internet?	Dial-up	Broadband	Cell phone	Other _____	I don't	
3. What types of online social network do you personally use?	Wikis	Blogs	Forums	Social networking sites	None	

OPTIONAL INFORMATION BELOW HERE

4. What is your highest level of educational achievement?	PhD	Masters	Bachelors	Cert. or Dip.	Other	School
5. What is your age group?	<20	20-29	30-39	40-49	50-59	>59

Continued...

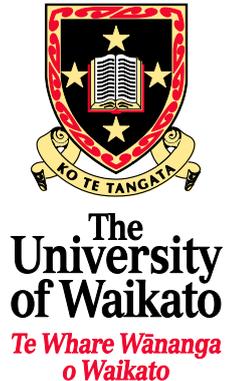
Section 2: Use of Local Government Online Services

- The following questions relate purely to your interactions with online social networks (ideally – but not necessarily local government online social networks).
1. Please tell me about your participation with such an online social network.
 2. Why do you participate?
 3. What are the advantages of participating?
 4. What are the disadvantages of participating?
 5. What are the main challenges/barriers/obstacles to your participation?
 6. What motivates you to continue using the online social network?
 7. What extra features should the network consider offering?
 8. Overall in your view, what main factors would need to be considered for a meaningful dialogue to be able to take place online between citizens and local authorities?

Appendix 3: Ethical Approval Documentation

Information Sheet for Participants

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The Role of Online Social Networking in Public Administration

Information Sheet for Participants

Who is conducting the research?

Mr Hamed Al Namani, PhD student in the Department of Management Systems at the University of Waikato Management School. You can contact me at:
hkra1@waikato.ac.nz or on (mobile): 0211497837.

Who is on the supervisor panel from the University of Waikato?

(Chief Supervisor) Dr Eric Deakins, (64 7) 838 4565. **Email:**

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Also:

Prof Dr Gottfried Vossen, European Research Center for Information Systems,
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What is the purpose of the research?

The purpose of this research is to explore e-Government policymakers' and citizens' attitudes towards the adoption and use of online social networks that have the potential to enable citizens to engage in shared decision-making with government authorities.

In this research, *e-Government* is referring to any dependent or independent government entity that delivers services to its citizens online, using any type of information and communication technology, and which operates at the regional/governorate, city, or district level.

The objectives of the research are to:

- Identify and document factors affecting the adoption of online social networks
- Develop a technology acceptance framework and build and test a prototype information system
- Provide recommendations on how to further involve citizens in decision-making processes in public sector organizations.

What will you have to do and how long will it take?

In the present phase of the research the factors that can affect the decision to adopt online social networks are being investigated. As a participant you can expect to be interviewed for between 45-60 minutes. A series of open-ended questions will be asked.

What will happen to the information collected?

With your permission, hand-written notes plus a voice recorder will be used to document the interview. Tapes will then be transcribed and analysed for common themes. Only I plus the Chief Research Supervisor will be privy to the original notes and tapes and I will use what I learn to write a research report (only aggregated data will be presented and no personal identification information will ever be used without first obtaining written permission). I intend to present versions of this report at conferences and to publish in respected academic journals.

How will confidentiality be protected?

I will do my utmost to protect the confidentiality of all collected information. As noted above, only I and the Chief Supervisor will have access to the original notes and

recorded interviews and only aggregated data will be presented in any written reports. No participants will be named in research reports without their express written permission, and every effort will be made to disguise identities. Personal information that could identify participants will not be kept for longer than is required for the purpose for which it is collected, and will then be destroyed.

Declaration of participant

- I have the right to:
 - refuse to allow the interview to be digitally recorded
 - refuse to answer any particular question
 - withdraw from the study at any time
 - ask questions about the study at any time
- I have been told that aggregated data will only be used in all publications arising from this study
- I have been shown the contact details I can use if I wish to add or delete information after the interview is completed
- I can receive a copy of the summary of the findings from the study when it is concluded by e-mailing my interest to the researcher.

Consent Form for Participants

Waikato Management School
Te Raupapa



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

The Role of Online Social Networking in Public Administration

Consent Form for Participants

I have read the Information Sheet for Participants for this study and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I also understand that I am free to withdraw from the study at any time, or to decline to answer any particular questions. I agree to provide information to the researchers under the conditions of confidentiality set out on the Information Sheet for Participants.

I agree to participate in this study under the conditions set out in the Information Sheet for Participants.

Signed: _____

Name: _____

Date: _____

Researcher's Name and contact information

Mr Hamed Al Namani, ID 1022365, Mobile 021 1497 837, Address: 8 Bond Street,
Hamilton East, Hamilton, New Zealand.

Email: hkra1@waikato.ac.nz

Chief Supervisor's Name and contact information

Dr Eric Deakins, (64 7) 838 4565, **Email:** edeakins@waikato.ac.nz

Appendix 4: Thematic Analysis Example

The following is a brief example of how thematic analysis process was applied in this research. The sample describes the conducted process for analyzing the adoption of online services from organization side at four levels: individual, organization, national and nation. The sample provided uses an extract from a transcript from the answer of two interview questions which are representative of other transcripts of other questions. Any reference which may identify the participant has been removed. Since the sample is only a brief extract it does not highlight all codes and themes and sub themes (categorizes and subcategorizes), however, the example is representative of the process used throughout the data analysis.

Data reduction

The data reduction includes writing-up transcript for the interview, labelling the transcript with specific name (labelling), and translating the transcript into English scripts (translation made with the assistance of commercial translation tools; Google Translator) as shown in **Table A4.1**. The transcript was saved in a separate MS Word file. Then this file was saved in the organization A' files directory.

Table A4.1: Interview transcript illustration

Organization	A	Participant number	Pr4
Gender	M		
Position	IT CEO		
Interview date	24/11/2008		
Designated Code	OM.A.Pr4		

Section 1: Acceptance and adoption of online services

1.2 Interviewer: What main services does the organization deliver online?

OM.A.Pr4: The online services were introduced in 1997. The ministry has a website from the beginning of the entrance of the Internet in Oman. At the beginning the website was used to deliver information about the ministry in order to give opportunities for the people to know more about the ministry's responsibilities, and the nature of the delivered services. The first online service was awareness and education service. For example, the website was used to publish new announcements and decisions. Also, it was used to publish the results of the secondary school exam. In 202 interactive features were added to the website which include a discussion forum (a social networking platform). In this platform, members can post their inquiries and discuss their interested issues with other members. The platform has a huge number of members. It is very famous and you can access it from the main page of the ministry's website. Then the idea was developed to the portal which represented a gateway to all online services. Recently, the ministry deliver mainly online services for students, parents, teachers, administrators in the school and the ministry. We started to categorize the services and determine the target group. Also, we started to deliver services by different media. In 2004 the SMS services were introduced. Initially, you can demand grade by mobile phone. Then the pull and push service was added where you can post your inquire and the result will be send to you.

1.3 Interviewer: What were the primary reasons for offering these particular ones?

OM.A.Pr4: A lot of reasons. Firstly, the entrance of the Internet in the country. So we should utilize this technology...we should utilize it from the management and education perspectives. This is because it has many features such technical features and financial benefits which you will not be able to find it in the traditional way of doing business specifically you can interact with large number of people at possible less time in any place. These things cannot be achieved by using other communication media such as letter, phone or fax. Secondly, there is an increasing in the development and importance of the Internet in the country and people has started to feel its importance and value and they have started to access it. My interest is to present in places [websites] where people is located. Because I would like to send to them my messages which I cannot send them by traditional ways. In other words, we used to send our information to the public by newspapers. However, how many people read the newspaper? Even if you read the newspapers, do you read my topics or not?...today our interest is to market our projects and ideas. I would like to convince you about this topic. Once people become more convinced about the specific topic, it saves us a lot of things regarding this topic such as resources for organizing awareness and training programs. So we need to reach to people by different methods. Not only by using the Internet...by using all available media. The most important is to receive the ministry's messages and use them... if we talk about the financial outcome of using the Internet, I think there is a benefits. Because you are consuming a lot of time and offer by visiting the physical locations of the schools or the ministry to get services...also you can find me or you cannot...also clash may happen between us. These issues can be avoided by using the Internet

Familiarising with data

The second step of data analysis is familiarising with the data by reading and re-reading the transcripts. During this stage initial ideas were noted in order to prepare for coding.

Generating initial codes

The initial codes were generated, as shown in **Table A4.2**, by examining the highlighted initial notes looking for features appear interesting to the researcher (relevant to the framework; which was developed for investigating of the primary research question as shown in **Figure 2.5**). Also, it included examining the transcript again to identify further interested ideas. During this stage, each interested feature (concept, sentence, phrase, or paragraph) was given code or label in a separate column in the right side of the table that contain the data set (interview transcript). Then each code and its relevant extracted data were added to the organization code list as shown in **Table A4.3**. The NVIVO software package Version 7.0. was used in the coding process.

Table A4.2: Initial codes

Data extract	Initial notes
<p>1.2 Interviewer: What main services does the organization deliver online? OM.A.Pr4: (1) The online services were introduced in 1997. (17) The ministry has a website from the beginning of the entrance of the Internet in Oman. At the beginning (2) the website was used to deliver information about the ministry in order to give opportunities for the people to know more about the ministry’s responsibilities, and the nature of the delivered services. (3)The first online service was used for the purpose of awareness and education. For example, (4) the website was used to publish new announcements and decisions. Also, it was used to (5) publish the results of the secondary school exam. (6) In 2002 (7) interactive features were added to the website which include (8) a discussion forum. In this platform, (9) members can post their inquiries and discuss their interested issues with other members. (10) The platform has a huge number of members. (11) It is very famous and you can access it from the main page of the ministry’s website. (12) Then the idea was developed to the portal which represented a gateway to all online services. (13) Recently, the ministry deliver many online services for students, parents, teachers, administrators in the school and the ministry. We started to categorize the services and determine the target group. Also, (14) we started to deliver services by different media. (15) In 2004 the SMS services were introduced. Initially, you can demand exam results (16) by mobile phone. (18)Then the pull and push service was added where you can post your inquire and the result will be send to you.</p> <p>1.3 Interviewer: What were the primary reasons for offering these particular ones? OM.A.Pr4: A lot of reasons. Firstly, (1) the entrance of the Internet in the country. So we should utilize this technology...we should utilize it from the management and education perspectives. This is because it has many features such technical features and financial benefits which you will not be able to find it in the traditional way of doing business specifically you can interact with large number of people at possible less time in any place. These things cannot be achieved by using other communication ways such as letter, phone or fax. Secondly, (2) there is an increasing in the development and importance of the Internet in the country and (3) people has started to feel its importance and value and they have started to use it. My interest is to present in places [websites] where people are located. (4) Because I would like to send messages to them which I cannot send by using traditional methods. In other words, we used to send our information to the public by newspapers. However, how many people read the newspaper? Even if they read the newspapers, the question is do they read my topics or not?... (5) today our interest is to market our projects and ideas. I would like to convince you about this topic. Once people become more convinced about the specific topic, (6) it saves us a lot of things regarding this topic such as resources for organizing awareness and training programs. (7) So we need to reach to people by different methods. Not only by using the Internet...by using all available media. The most important is to receive the ministry’s messages and use them... if we talk about the (8) financial outcome of using the Internet, I think there are many benefits. (9) Because you are consuming a lot of time and offer by visiting the physical locations of the schools or the ministry to get services...(10) also you can find me or you cannot...(11) also clash may happen between us. These issues can be avoided by using the Internet</p>	<p>1) introduce OS 17) use of the Internet 2) type of delivered OS 3) Reasons for offering OS 4) use of the website 5) use of the website 6) development of OS 7) use of the website 8) Type of Web 2.0 Tool 9) use of SNS 10) popularity of SNS 11) popularity of SNS 12) development of OS 13) Delivered OS 14) OS access channels 15) development of OS 16) way of delivering OS 18) type of delivered Mobile services 1) Reasons for offering OS 2) Reasons for offering OS 3) Reasons for offering OS 4) Reasons for offering OS 5) Reasons for offering OS 6) Reasons for offering OS 7) Reasons for offering OS 8) Reasons for offering OS 9) Reasons for offering OS 10) Reasons for offering OS 11) Reasons for offering OS</p>

OS= online services, SNS social networking services

Table A4.3: Initial codes derived for Organization A

#	Initial codes	Extracted data and its sources
1	Introduce of online services	OM.A.Pr4, A-Q 1.2: (1) 'The online services were introduced in 1997.'
2	Delivering information about the organization	OM.A.Pr4, A-Q 1.2: (2) 'the website was used to deliver information about the ministry.'
3	Purpose of website	OM.A.Pr4, A-Q 1.2: (3) 'The first online service was used for the purpose of awareness and education.'
4	Publishing new announcements and decisions	OM.A.Pr4, A-Q 1.2: (4) 'the website was used to publish new announcements and decisions.'
5	Publishing exam results	OM.A.Pr4, A-Q 1.2: (5) 'it was used to publish the results of the secondary school exam.'
6	Introduce of interaction services	OM.A.Pr4, A-Q 1.2: (6) 'In 2002 interactive features were added to the website.'
7	Interaction service	OM.A.Pr4, A-Q 1.2: (7) 'interactive features were added to the website.'
8	Discussion forum	OM.A.Pr4, A-Q 1.2: (8) 'discussion forum.'
9	Post inquires and discussion	OM.A.Pr4, A-Q 1.2: (9) 'members can post their inquiries and discuss their interested issues with other members.'
10	Acceptance of online services among society	OM.A.Pr4, A-Q 1.2: (10) 'The platform has a huge number of members. It is very famous...'
11	Introduce portal	OM.A.Pr4, A-Q 1.2: (12) 'Then the idea was developed to the portal which represented a gateway to all online services.'
12	Type of delivered online services	OM.A.Pr4, A-Q 1.2: (13) 'Recently, the ministry delivers many online services for students, parents, teachers and administrators in the school and the ministry.'
13	Ways of delivering online services	OM.A.Pr4, A-Q 1.2: (14) 'we started to deliver services by different media.'
14	Introduce of SMS services	OM.A.Pr4, A-Q 1.2: (15) 'In 2004 the SMS services were introduced'
15	Use of Mobile services	OM.A.Pr4, A-Q 1.2: (16) Initially, you can demand exam results by

#	Initial codes	Extracted data and its sources
		mobile phone.’
16	Use the Internet to deliver online services	OM.A.Pr4, A-Q 1.2: (17) ‘The ministry has a website from the beginning of the entrance of the Internet in Oman.’
17	Entrance of the Internet	OM.A.Pr4, A-Q 1.3: (1) ‘the entrance of the Internet in the country. So we should utilize this technology...’
18	Increasing the use of the Internet	OM.A.Pr4, A-Q 1.3: (2) ‘there is an increasing in the development and importance of the Internet in the country...’
19	Use of the Internet by the society	OM.A.Pr4, A-Q 1.3: (3) ‘...people has started to feel its importance and value and they have started to use it’
20	Can easily send message by the Internet	OM.A.Pr4, A-Q 1.3: (4) ‘Because I would like to send messages to them which I cannot send by using traditional methods...’
21	Market the ideas and project	OM.A.Pr4, A-Q 1.3: (5) ‘Today our interest is to market our projects and ideas. I would like to convince you about this topic.’
22	Save resources	OM.A.Pr4, A-Q 1.3: (6) ‘it saves us a lot of things regarding this topic such as resources for organizing awareness and training programs.’
23	Reach wide range of people	OM.A.Pr4, A-Q 1.3: (7) ‘So we need to reach to people by different methods. Not only by using the Internet’
24	Financial outcome	OM.A.Pr4, A-Q 1.3: (8) financial outcome of using the Internet, I think there are many benefits. Because you are consuming a lot of time and offer by visiting the physical locations of the schools or the ministry to get services
25	Easy to access people	OM.A.Pr4, A-Q 1.3: (9) ‘...also you can find me or you cannot...’
26	Possible effect of face to face interaction	OM.A.Pr4, A-Q 1.3: (10) ‘...also clash may happen between us. These issues can be avoided by using the Internet.’
27	Type of mobile services	OM.A.Pr4, A-Q 1.2: (18) Then the pull and push service was added where you can post your inquire and the result will be send to you

Generating Potential Themes:

A theme captures something important about the data in relation to the research questions, and represents some level of patterned response or meaning within the data set. The potential themes was generated by collating relevant initial codes into categorizes and subcategorizes. Three levels of categorizes (themes) were generated based on the scope of the theme.

Table A4.4: Themes derived from Organization A data set

Category	Subcategories (Level 1)	Subcategories (Level 2)	Includes
1. Development of OS	1. History		1. Introduction of online services in 1997
			2. Adding interactive features in 2002
			3. Adding mobile services in 2004
			4. Portal
	2. Development stages		5. Publish information
			6. Interaction service (processing of forms)
			7. Mobile service
			8. Social networking services
			9. Portal
2. Delivered OS	3. Type	1. Information services	10. Delivering information about the organization
			11. Publishing new announcements and decisions
			12. Publishing exam results
		2. Interaction services	13. Admission forms
		3. Comms	14. Inquiries

Category	Subcategories (Level 1)	Subcategories (Level 2)	Includes
		services	15. Push and pull services such (exam results)
			16. Discussion
	4. Media		17. Internet
			18. Intranet
			19. Mobile device
	5. Applications		20. website
			21. Email
			22. SMS
			23. Portal
			24. Web 2.0 applications
3. Reasons for offering OS	6. Objectives drivers		25. Awareness and education
			26. Marketing the ideas and projects
			27. Reaching wide range of people
	7. Technical drivers		28. Entrance of the Internet
			29. Development of the infrastructure
			30. Can easily send message by the Internet
			31. Increasing the use of the Internet
			32. Financial outcome
	8. Social drivers		33. Avoid possible effect of face to face interaction
	9. Financial drivers		34. Save resources
4. Use of SNS	10. Org. side		35. Inquires

Category	Subcategories (Level 1)	Subcategories (Level 2)	Includes
			36. Discussion
5. The acceptance of SNS	11. Society		37. Popular
6. Web 2.0 used tools	12. Org. side		38. Discussion forum
7. OS access channels	13. Org. side		39. Internet
			40. Mobile device

Table A4.5: Categories and subcategories derived from Organization A data set

Categories	Subcategories (Level 1)	Subcategories (Level 2)	Includes	Data source
1. Development of OS	1. History		1. Introduction of online services in 1997	OM.A.Pr4, A-Q 1.2: (1)
			2. Adding interactive features in 2002	OM.A.Pr4, A-Q 1.2: (6)
			3. Adding mobile services in 2004	OM.A.Pr4, A-Q 1.2: (15)
			4. Portal	
	2. Development stages		5. Publish information	OM.A.Pr4, A-Q 1.2: (2)
			6. Interaction service (processing of forms)	OM.A.Pr4, A-Q 1.2: (6)
			7. Mobile service	OM.A.Pr4, A-Q 1.2: (15)
			8. Social networking services	
			9. Portal	
2. Delivered OS	3. Type	1. Information services	10. Delivering information about the organization	OM.A.Pr4, A-Q 1.2: (2)
			11. Publishing new announcements and decisions	OM.A.Pr4, A-Q 1.2: (4)
			12. Publishing exam results	OM.A.Pr4, A-Q 1.2: (5)
		2. Interaction services	13. Admission forms	

Categories	Subcategories (Level 1)	Subcategories (Level 2)	Includes	Data source
		3. Comms services	14. Inquires	OM.A.Pr4, A-Q 1.2: (9)
			15. Push and pull services such (exam results)	OM.A.Pr4, A-Q 1.2: (18)
			16. Discussion	OM.A.Pr4, A-Q 1.2: (9)
	4. Media		17. Internet	
			18. Intranet	
			19. Mobile device	OM.A.Pr4, A-Q 1.2: (15)
	5. Applicatns		20. website	
			21. Email	
			22. SMS	OM.A.Pr4, A-Q 1.2: (16)
			23. Portal	OM.A.Pr4, A-Q 1.2: (18)
			24. Web 2.0 applications	OM.A.Pr4, A-Q 1.2: (9)
	3. Reasons for offering OS	6. Objectives drivers		25. Awareness and education
26. Marketing the ideas and projects				OM.A.Pr4, A-Q 1.3: (5)
27. Reaching wide range of people				OM.A.Pr4, A-Q 1.3: (9), (7)
7. Technical drivers			28. Entrance of the Internet	OM.A.Pr4, A-Q 1.3: (1)
			29. Development of the infrastructure	OM.A.Pr4, A-Q 1.3: (1)

Categories	Subcategories (Level 1)	Subcategories (Level 2)	Includes	Data source
			30. Can easily send message by the Internet	OM.A.Pr4, A-Q 1.3: (4)
			31. Increasing the use of the Internet	OM.A.Pr4, A-Q 1.3: (3)
			32. Financial outcome	OM.A.Pr4, A-Q 1.3: (8)
	8. Social drivers		33. Avoid possible effect of face to face interaction	OM.A.Pr4, A-Q 1.3: (10)
	9. Financial drivers		34. Save resources	OM.A.Pr4, A-Q 1.3: (6)
4. Use of SNS	10. Org. side		35. Inquires	OM.A.Pr4, A-Q 1.2: (9)
			36. Discussion	OM.A.Pr4, A-Q 1.2: (9)
5. The acceptance of SNS	11. Society		37. Popular	OM.A.Pr4, A-Q 1.2: (10)
6. Web 2.0 used tools	12. Org. side		38. Discussion forum	OM.A.Pr4, A-Q 1.2: (8)
7. OS access channels	13. Org. side		39. Internet	OM.A.Pr4, A-Q 1.2: (7)
			40. Mobile device	OM.A.Pr4, A-Q 1.2: (16), (17)

Reviewing Themes

The researcher reviewed the themes by checking if the themes fit the coded extracts. This involved examining collated extracts for each theme for a coherent pattern. Also, it involved examining the entire data set. In short, examination covered within the case (individual transcripts and notes plus all transcripts and notes for each organization), **Table A4.5**; and across-cases (between organizations), **Table A4.6**. The initial thematic maps were designed (see **Figure A4.1**). Themes were deleted if e.g., there was not enough data to support them, or the data was too diverse. Some themes were broken down into separate subcategories or sub themes. Data within themes should cohere together meaningfully, while there should be clear and identifiable distinctions between themes. After the thematic map work, the researcher moved to the next phase of the analysis process.

Table A4.6: Reviewing delivered online services theme in Organization A

Subcategories (Level 1)	Subcategories (Level 2)	Includes	Frequency					
			Pr1	Pr2	Pr3	Pr4	Total	
1. Type	1. Information services	1. Delivering information about the organization				*		
		2. Publishing new announcements/decisions				*		
		3. Publishing exam results				*		
	2. Interaction services	4. Admission forms				*		
		3. Communication services	5. Inquires				*	
	6. Push and pull services					*		
	7. Discussion					*		
	2. Media		8. Internet				*	
			9. Intranet				*	
		10. Mobile device				*		
3. Applications		11. website				*		
		12. Email				*		
		13. SMS				*		
		14. Portal				*		
		15. Web 2.0 applications				*		

*Indicates repetitions of sub themes per participant of the selected organization

Table A4.7: Review of online services within and across organizations

Subcategories (Level 1)	Subcategories (Level 2)	Includes	Total Frequency			
			Org A	Org B	Org C	Total
1. Type	1. Information services	1. Delivering information about the organization	*			
		2. Publishing new announcements and decisions	*			
		3. Publishing exam results	*			
	2. Interaction services	4. Admission forms	*			
	3. Communication services	5. Inquires	*			
		6. Push and pull services such (exam results)	*			
		7. Discussion	*			
2. Media		8. Internet	*			
		9. Intranet	*			
		10. Mobile device	*			
3. Applications		11. website	*			
		12. Email	*			
		13. SMS	*			
		14. Portal	*			
		15. Web 2.0 applications	*			

* Indicate number of repetition of the sub themes per participants of the selected case (organization)

Defining and naming themes

The generated themes were defined and named, through ongoing analysis, to refine the specifics of each theme and the overall story of the analysis being told. This step ended by generating clear definitions and names for each theme.

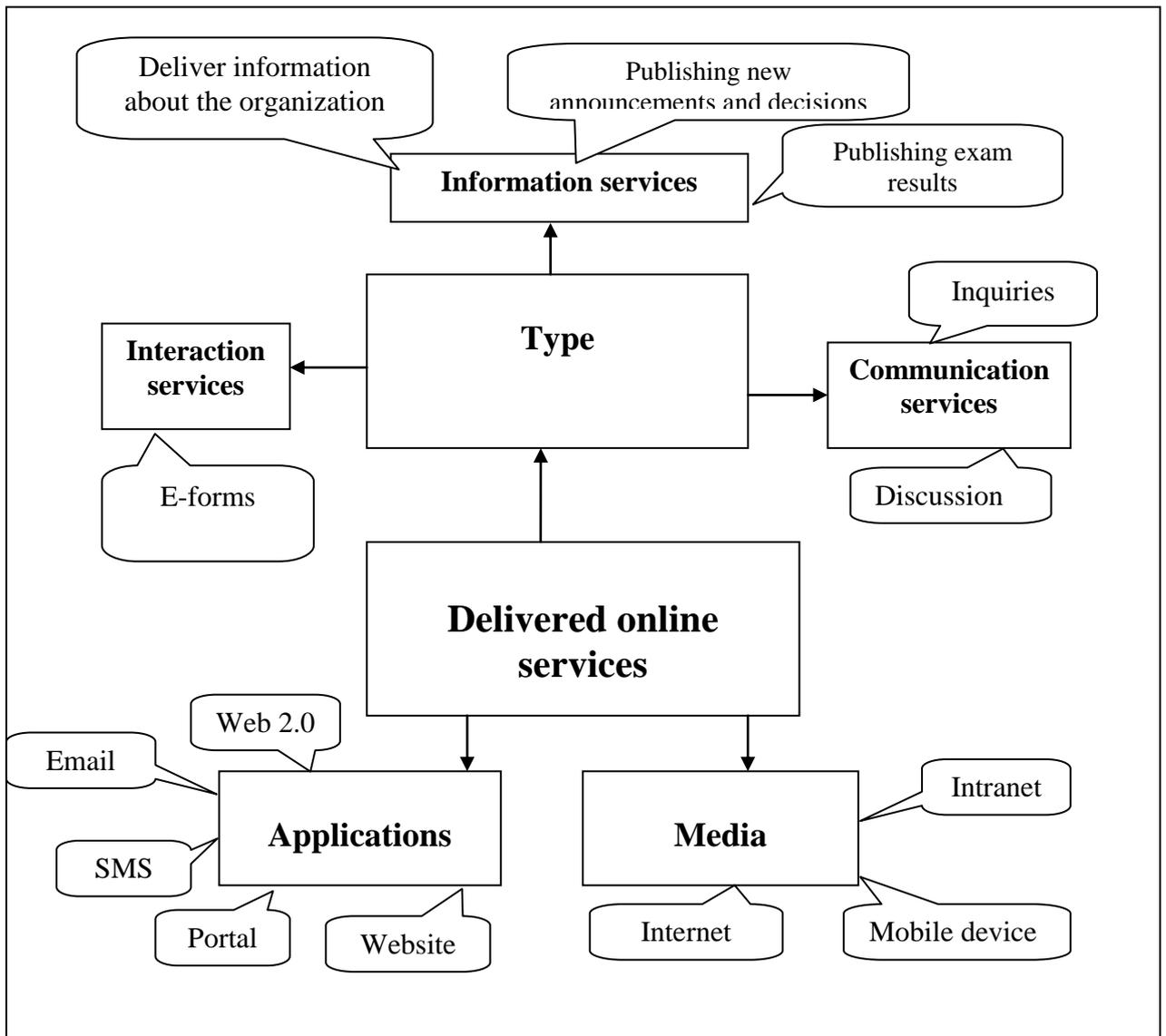


Figure A4.1: Initial Thematic Map

Producing the Report

The final stage of thematic analysis involved producing the final report of the analysis. It involved selecting the vivid, compelling extract examples, final analysis of extracts, relating the analysis back to the research questions and literature (see **Table A4.8**).

Table A4.8: Main delivered online services in Organization A

Delivered Online Service	Includes	Link to data set	Link to question	Link to literature
1. Publishing services	1. Delivering information about the organization	OM.A.Pr4, A-Q 1.2: (2) ‘the website was used to deliver information about the ministry.’		Deakins <i>et al.</i> , 2002, 2007c; Reddick, 2005, section 2.3, page 37
	2. Publishing new announcements and decisions	OM.A.Pr4, A-Q 1.2: (4) ‘the website was used to publish new announcements and decisions.’		
	3. Publishing exam results	OM.A.Pr4, A-Q 1.2: (18) Pull-push service added where inquiries are posted and results will be sent to you		
2. Social networking services	4. Inquires	OM.A.Pr4, A-Q 1.2: (16) Initially, you can demand exam results by mobile phone.’	SQ3, page 46	
	5. Discussion	OM.A.Pr4, A-Q 1.2: (9) ‘members can post their inquiries and discuss their interested issues with other members.’	SQ3, page 46	
3. SMS services	6. Inquires	OM.A.Pr4, A-Q 1.2: (9) ‘members can post their inquiries and discuss their interested issues with other members.’		
	7. Push and pull exam results	OM.A.Pr4, A-Q 1.2: (18) Then the pull and push service was added where you can post your inquire and the result will be send to you		

Appendix 5: Action Research Protocols for Phase III

Guidelines to implement social networks in local government/ civil services institutions in developing countries

To be used by the researcher to guide the implementation of Web 2.0 application implementation/use in Phase III

The following are the main key aspects which need to be considered in order to implement online social networking services in developing nation. It was developed based on case study outcome (Oman).

The recommendations cover four area acceptance, adoption, implementation process and operation.

1. Acceptance consideration aspects

Government

Government need to consider several issues in order to enhance the public institutions to offer online social networking services and citizens to uptake the services

- Prepare the infrastructure for broadband services
- Set digital legislation about sharing in formation between public organization and business partners (stakeholders)
- Provide financial and technical support
- Provide training and awareness program to reduce the gape in knowledge about using information technology. The program needs to focus on both citizens and employees.
- Support the Internet access cost

Public institution (social networking service's delivers)

Policymakers need to consider several issues before accepting the concept of providing social networking service to the citizens

- Need to understand the government acceptance of engaging citizens in the decision-making
- Need to understand the legislation about the information sharing between the organization and citizens
- Need to understand the national culture issue about using online dialogue
 - Citizens and officers acceptance of criticism
 - Citizens acceptance of using technology to communicate rather than traditional way

-
- Need to understand the digital divide issues and the government projects to overcome the digital divide challenges
 - Need to identify the government support (financial and technical support to the e-Government projects, awareness and training program)

2. Adoption consideration aspects

After the policymakers identified the attitude of the government and society of the adoption of social networking, several aspects need to be considered several before making a decision to adopt social networking system.

The following are the main aspects

Step (1) initially the public institution needs to identify several issues in order to find the feasibility of the adoption of the system. The following are the main issues:

- Identify need (what is the goal, why need to communicate)
- Identify target group (the group of people to communicate with)
- Identify channel (how to reach the target group)
- Identify the characteristics of the tool (communication media)
 - Advantages and benefits, and
 - Disadvantages and limitation of the tool

Step (2) then the institution needs to consider the preparation issues which need to be done before implementing the system in order to find out if the organization has the capability to implement the system (identify the challenges, barriers and obstacles). The following are the main issues:

- Need to change the strategy
 - (treat citizen as customer) citizens is one of the source of knowledge and need to benefit from the sources to improve the performance
 - Citizens need more transparency so is the organization ready for this
- Need to reengineer the
 - Process (change the decision-making process)
 - Structure (need to develop a department to oversee the system)
 - Regulation (about sharing information)
 - Role (need to identify the role of the operators)
- Resource needed
 - Financial resource (to buy the tool and other requirements, incentives to motivate the staff (operators), marketing, training
 - Technical resource (the infrastructure , the Internet, and other technical parts
 - Human resources (recruiting operators or other technical staff to operate the platform)

Commitment to act

-
- Is the organization ready to
 - Response (response to the input)
 - Implement the decision (what have been decided to do)

Step (3) Make a decision about adopting or rejecting the concept of offering social networking services to the stakeholders based on the result of step (1) and step (2)

Step (4) peer on mind research found that the main key success factors of the adoption were clearness of the goal, top management support, commitment to act, government support and organization capability (readiness). Also be aware that the main challenges were resistance to change and readiness.

3. Implementation consideration aspects

IT manager need to consider several aspects during the implementation process in order to implement social networking services successfully. The following are the main aspects

Step (1) Create implementation team

- The team has to be familiar with the tool

Step (2) Modify the organization strategy

- Focus on citizens as customer
- More transparency

Step (3) Reengineer the organization

- Change the decision-making process
- Develop a department to oversee the system
- Create regulation about sharing information
- Set the role of the operators

Step (4) Build or customize the tool. Several Issues need to be considered during the process of building or customizing the tool. The consideration mainly about the dialogue, task, motivation and technical issues as following:

Dialogue issues (should be clear and all members can see it)

- Set the discussion goals
- Set rules and policies
 - Put sanctions on violators
 - Give note to violators member
 - Terminate membership for a specific time
 - Dismiss delete membership
 - Identify the level of freedom
- Set membership terms and conditions
- Membership requirement

-
- E mail, password, other personal information
 - Privacy issues
 - Can use nickname or use real name

Task issues

- Set rules to avoid unacceptable words
- Identify the discussion time

Motivation issues that need to be considered are

- Tools motivation features

Technical issues that need to be considered are

- The tool
 - Should be easy to use
 - Can integrate deferent channels
 - The Internet, SMS, PDA
 - Has motivation features
 - Support Arabic script
 - Accept large number of users
 - Should be easy to access
 - Cheep
 - Has functionality features
 - E mail, attachment, RSS, Image
 - Control issues
 - Compatible to other tool
 - Support analysis tool
- Risk issue
- Security

Step (3) Appoint the management team (operators and administrators)

- Select team members.
 - Give priority to member who have the desire to operate the platforms
 - Give priority to citizen to be in the operation team
 - Make sure the operators have dialogue skills
 - Consider writing skills
 - Use simple words
 - Use clear sentence
 - Ability to edit the content
 - Ability to criticism
 - Make sure the operators have dialogue management skills
 - Make sure to have enough number of operators
- Perform awareness and training program to overcome the resistance issues
- Market the service to the citizens
 - Aware citizens about the benefits from participation
 - Aware citizens how to get the services
 - Use deferent marketing channels

-
- Aware end users(officers) about the usefulness of online communication with citizen and the importance of using technology
 - Train operators and administrators

4. Operation consideration aspects

Operation team need to consider several aspects in order to obtain a meaningful dialogue with citizens

Step (1) preparation for the dialogue

The following dialogue issues need to be considered by the management team before starting the dialogue

- Identify discussion topics
- Identify discussion time
- Notify the member
- Consider rules and policies during the discussion

Step (2) Operating the dialogue

The following motivation issues need to be considered by the management team during the dialogue

- Response to the input as soon as possible
- Use incentive issues to motivate active users or good input
 - Use stars, add special name to the member
- Increase the trust of the citizens to use the services by considering
 - Privacy issues
 - The security of personal information
 - Regulation
 - Limit the number of operators that know users personal information
 - Be equal when implementing the rule against members
- Inform member about the result (decision about the topic)

Ends

Appendix 6: Context for the study: Omani Government Sector

Political issues

- Single body of government (single tier)
- One of the most politically stable countries and has good international relations
- High bureaucratic work processes in government organization
- Centralization
- Government financial, political and technical support
- Government commitment to educate people to raise ICT knowledge
- Slow changing policies might reduce the citizens trust to use e-Government services

Economic issues

- The nation's main source of income is oil and gas production. Thus, steep fall in oil prices could threaten spending
- FTA with US should increase opportunities for global vendors and drive liberalization
- Diversification of economy and growth create new sources of demand

Social issues

- High ICT illiteracy rate
- Low level of ICT application adoption among government organizations
- Small population
- High fertility rate
- Majority of population aged 15-65 years working age
- High grow rate, for the Internet usage and mobile usage
- Lack of trained IT workforce

Technical issues

- Clear vision of eOman and goal to achieve
- Consider the international standard in the development of e-Government
- Limited broadband services
- Low level of skilled IT staff
- Limited citizen participation in government activities
- ICT market new ICT solution

-
- Arrival of Second Internet provider will increase competition in Internet access cost and provision of broadband services
 - The regular updating of digital strategy will provide opportunity for innovation
 - Presenting of Omani e-Government practice will provide opportunity for the e-Government policymakers for development and innovation.
 - Consideration of international standards will create good opportunity for the success of implementation of e-Government projects
 - E-government rewards program will enhance the innovation
 - Increase number of students in the IT will expect to participate in the reduction of IT workforce in the long terms.
 - Providing free cost ICT training program will expect to reduce the digital divide and increase the online services.
 - Increase of social networking users will provide opportunity for the adoption of e-participation initiatives.
 - The increase of Internet user will put pressure on the government organization to fasten their transformation into e-Government
 - Limited of broadband services

Table A6.1: United Nations e-Government rankings (selected countries)

	Culture	UN Rank	
		E-government development rank	E-participation rank
Republic of Korea	Non Arabic	1	1
Netherlands	Non Arabic	2	1
United Kingdom	Non Arabic	3	3
United States	Non Arabic	5	3
Australia	Non Arabic	12	5
New Zealand	Non Arabic	13	11
United Arab Emirates	Arabic	28	6
Bahrain	Arabic	36	8
Saudi Arabia	Arabic	41	9
Qatar	Arabic	48	9
Kuwait	Arabic	63	25
Oman	Arabic	64	16
Lebanon	Arabic	87	20
Jordan	Arabic	98	2
Tunisia	Arabic	103	18
Egypt	Arabic	107	7
Morocco	Arabic	120	17
Iraq	Arabic	137	28

Source: (UN, 2012)

Appendix 7: Emerging Themes

Table A7.1: Phase II emerging themes (National level)

Subcategories (Level 1)	Subcategories (Level 2)	Includes	Totals					Total N=25
			Org A	Org B	Org C	Subtotal N=11	Citizen N=14	
IT infrastructure	1. Broadband services	Availability of high Internet speed	4	4	3	11	8	19
Digital divide	2. Awareness and training programs	Educating users about the importance of the new services and how to use it	3	4	3	10	7	17
	3. Internet access channels	Availability of different access channels	1	1	1	3	2	5
	4. Internet access cost	Availability of reasonable access cost	1	0	1	2	4	6
		Providing low-cost public access to the Internet	1	0	0	1	2	3
		Providing grants to low income families	1	0	0	1	0	1
	5. Internet access skills	Providing training program	3	3	1	7	2	9
	6. Internet access device	Availability of access devices	1	1	0	2	2	4
National culture	7. Identity	Enabling users to choose their own user name	2	1	1	4	5	9
	8. Language	Providing services with different	1	1	1	3	2	5

Subcategories (Level 1)	Subcategories (Level 2)	Includes	Totals					Total N=25
			Org A	Org B	Org C	Subtotal N=11	Citizen N=14	
		languages						
	9. Fear of the Internet	Using the Internet to interact with other	0	1	0	1	2	3
	10. Criticism culture	Criticism skills (criticizing subject not participant)	3	4	2	9	6	15
	11. Dialogue culture	Using the Internet to discuss issues	2	3	2	7	5	12
		Political circumstances	0	0	0	0	2	2
Political issues	12. Government support	Providing financial, technical and political supports	1	3	1	6	0	6
	13. Legislation	Sharing information	2	4	2	8	1	9

Table A7.2: Phase II emerging themes (Organization level)

Subcategories (Level 1)	Subcategories (Level 2)	includes	Totals			
			Org A	Org B	Org C	Total
Strategic issues	1. Vision	Clear vision	4	4	3	11
	2. Objective	Defining the adoption objectives	4	4	3	11
	3. Target group	Defining people to target	4	4	3	11
Citizen orientation	4. Focusing on citizens needs and expectations	Considering citizens needs and expectations	2	4	3	9
Organizational capabilities	5. Financial resource	Providing for operation cost	1	1	2	4
	6. Human resources	Shortage of IT specialist	2	2	2	6
		Capability of recruiting implementation and management teams	2	4	2	8
	7. Technical resources	Availability of hardware and software requirements	1	2	3	6
Organizational culture	8. Structure	Creating new department/division	1	0	0	1
	9. Rules and policies	Modifying rules and policies	4	2	1	7
Top management support	10. Providing resources	Providing technical and non-technical requirements	2	2	2	6
	11. Speeding up adoption process	Speeding up the adoption process	2	2	2	6
	12. Overcoming challenges	Overcoming the adoption challenges	3	2	2	7

	13. Changing organizational structure	Adding new department/division	3	0	0	3
	14. Rewarding operation team	Rewarding the operation team	2	0	0	2
Resistance to change	15. Lack of resources	Lack of resources	2	2	2	6
	16. Risk of undesirable inputs	Risk of undesirable inputs	4	4	3	11
	17. Risk of adding extra work load	Risk of adding extra work load	2	2	3	7

Table A7.3: Phase II emerging themes (Management level)

Subcategories (Level 1)	Subcategories (Level 2)	includes	Totals					
			Org A N=4	Org B N=4	Org C N=3	Subtotal N=11	Citizen N=14	Total N=25
Preparation issues	1. Planning	Setting action plan	2	4	4	10	0	10
	2. Creating implementation team	Creating the team and Defining its responsibilities	3	2	3	8	0	8
	3. Creating the management body	Moderators and administrators from organization side	4	4	3	11	7	18
		Moderators from citizens side	1	1	0	2	0	2

Subcategories (Level 1)	Subcategories (Level 2)	includes	Totals					
			Org A N=4	Org B N=4	Org C N=3	Subtotal N=11	Citizen N=14	Total N=25
		Relationship between the owner department and other departments	1	3	2	6	0	6
	4. Defining requirements	Resources	2	2	2	6	0	6
Development issues	5. Application type	Selecting the most popular applications	1	0	1	2	0	2
		Selecting tool which supports the Arabic script	1	1	2	4	0	4
		Cost	1	1	1	3	0	3
	6. Design issues	Motivation features	2	3	1	6	2	8
		Dialogue features	3	3	3	9	4	13
		Control features	4	4	3	11	4	15
		Feed channels	1	1	1	3	2	5
		Arabic language support	4	4	3	11	10	21
	7. Usability	Easy to use	4	4	3	11	8	19
		Easy to register	0	0	2	2	0	2
		Easy to post inputs	0	0	2	2	3	5
		Easy to navigate	1	2	2	5	3	8

Subcategories (Level 1)	Subcategories (Level 2)	includes	Totals					
			Org A	Org B	Org C	Subtotal	Citizen	Total
			N=4	N=4	N=3	N=11	N=14	N=25
		Easy to control	2	3	2	7	0	7
	8. Users	Engaging end users	2	2	2	6	0	6
	9. Scalability	Accepting more users	1	1	1	3	0	3
	10. Rules/regulations/policies	Setting using rules and regulations	2	3	2	7	5	12
		Regularly updating rules and policies	1	1	1	3	0	3
Activation issues	11. Testing	Tested internally	2	2	2	6	0	6
	12. Marketing	Promoting	4	4	3	11	5	16
		Promoting channels	4	4	3	11	5	16
	13. Training and awareness	Providing training and awareness	4	4	3	11	2	13
	14. Accessibility issues	Free of charge	1	1	1	3	5	8
		Access channel	0	0	0	0	4	4
Operational issues	15. Top management support	Using authority to overcome the challenges	3	2	2	7	0	7
		Speed up the process	3	0	2	5	1	6
		Rewarding operation team	2	3	2	7	0	7

Subcategories (Level 1)	Subcategories (Level 2)	includes	Totals				
			Org A N=4	Org B N=4	Org C N=3	Subtotal N=11	Citizen N=14
16. Control	Daily observation	4	4	3	11	4	15
	Editing /deleting undesirable inputs	4	4	3	11	0	11
17. Security	Participant's personal information	2	2	2	6	2	8
18. Privacy	Participant's personal information	3	2	1	6	1	7
	Participant's inputs	0	1	1	2	0	2
19. Technical support	Providing technical support	2	3	2	7	0	7
20. Dialogue issues	Objectives	4	4	3	11	4	15
	Discussion subject	2	4	2	8	6	14
	Facilitators	4	4	3	11	8	19
	Duration	1	0	0	1	0	1
	Participants (identity)	1	3	1	5	7	12
	Interface words	2	1	1	4	5	9
21. Engage citizens	Engage citizens in operation	4	4	1	0	0	9
22. Response	Response	4	4	3	11	8	19
23. Rewards	Rewarding participants	3	2	2	7	1	8

Subcategories (Level 1)	Subcategories (Level 2)	includes	Totals					
			Org A N=4	Org B N=4	Org C N=3	Subtotal N=11	Citizen N=14	Total N=25
	24. Equality	Considering users feedback	2	4	2	8	1	9
	25. Commitment to act	Participation fees	0	0	1	1	2	3
Motivation issues	26. Development issues	Ease of use	4	4	3	11	8	19
	27. Activation issues	Free of charge	1	1	1	3	5	8
	28. Operation issues	Response	4	4	3	11	8	19
		Rewarding participants	3	2	2	7	1	8
		Equality	2	4	2	8	1	9
		Privacy	1	1	1	3	8	11
	29. Quality of discussion	Quality of the discussion	2	2	3	7	5	12
	30. Discussion topics	Discussion topics	2	2	2	6	3	9
31. Subjective norms	Subjective norms	1	1	1	3	2	5	

Table A7.4: Phase III emerging themes (National level)

Subcategories (Level 1)*	Subcategories (Level 2)	Includes
IT infrastructure	1. Availability of broadband services	Utilize access and navigate feature
		Handle high traffic volume
Digital divide	2. Awareness and Training programs	Create a program to educate employees
National culture	3. Identity	Enable user to choose their own user names
	4. Language	Provide two versions; Arabic and English
	5. Criticism culture	Set participation rules
		Regularly reviewed contribution comments

*These themes emerged from the collected data from the organization side

Table A7.5: Phase III emerging themes (Organization level)

Subcategories (Level 1)*	Subcategories (Level 2)	includes
Strategic issues	1. Vision	Having clear vision
	2. Objective	Clearly defining target objectives
	3. Target group	Clearly defining people to target
Citizen orientation	4. Focusing on citizens needs and expectations	Adopting the principle of focusing on citizens needs and concerns
Organizational capabilities	5. Financial resource	Availabilities of financial resources for acquiring and operating the system
	6. Human resources	Availabilities of human resources for developing and operating the system
	7. Technical resources	Availability of hardware and software resources
Organizational culture	8. Rules and policies (Regulations)	Modifying rules and policies
Top management support	9. Providing resources	Providing technical and non-technical requirements
	10. Speeding up the adoption process	Speeding up the adoption process
	11. Overcoming challenges	Overcoming adoption challenges
Resistance to change	12. Risk of using undesirable inputs	Risk of using undesirable inputs
	13. Risk of adding extra work load	Risk of adding extra work load

Table A7.6: Phase III emerging themes (Management level)

Subcategories (Level 1)	Subcategories (Level 2)	includes
Preparation issues	1. Planning	Setting action plan
	2. Creating implementation team	Creating the team and Defining its responsibilities
	3. Creating management body	Defining the owner of the system
		Moderators and administrators
4. Defining the requirements	Hardware and software	
Development issues	5. Application type	Model of content management system
		Supporting the Arabic script
		Low development cost
	6. Design issues	Motivation features
		Dialogue features
		Control features
		Feed channels
		Arabic language support
	7. Usability	Easy to use
		Easy to register
		Easy to post inputs
		Easy to navigate
Easy to control		
8. Rules/regulations/policies	Setting using rules and regulations	
Activation issues	9. Testing	Tested internally
	10. Marketing	Promoting
Promoting channels		

Subcategories (Level 1)	Subcategories (Level 2)	includes
	11. Training and awareness	Providing training and awareness programs
	12. Accessibility issues	Relaxing registration requirements
Operation issues	13. Top management support	Overcoming operation challenges
	14. Control	Daily observation
		Editing /deleting undesirable inputs
	15. Security	Participant's personal information
	16. Privacy	Participant's personal information
		Participant's inputs
	17. Technical support	Providing technical support
	18. Dialogue issues	Objectives
		Discussion subject
		Facilitators
		Interface wording
		Language used
19. Response	Response to citizen input	
20. Equality	Treat members as equal	

Appendix 8 Action Research Narrative

In Phase III of the research, participatory action research with a government institution in the Muscat Governorate involved implementation of two Web 2.0 online social networking tools. These were implemented and subsequently adopted by citizens. The action research data collection and analysis procedures used were detailed in earlier Sections 3.11.5 and 3.11.6, respectively.

1.1 The research site

Muscat Municipality (MM) is a local authority within the Muscat Governorate of Oman. It was chosen for the study because of the congruence of the research goals with MM's intention to develop a new web portal that includes online social networking (OSN) services. After the opportunity to collaborate was identified, permissions were sought from senior management before formal cooperation could begin. Initial preparation covered the various aspects of preparing for the roles, developing the evaluation tools and obtaining final agreement to participate in the study.

MM is a second-level government entity that has two main bodies; legislative and executive. It is one of the larger civil services organizations to interact with a range of stakeholders: citizens, residents, other government institutions, suppliers, central government, private organizations and employees. MM interacts with its stakeholders via traditional ways or by using ICT tools such as phones, mobiles, emails and social networking tools.

MM introduced its first online services at the end of the 1990s. It uses a centralized approach to manage its information systems via the Department of Information Systems, which has the main responsibility of overseeing the development, management and maintenance of all information systems and other technology in the organization.

In August 2009, MM decided to develop its website as a part of a citizen-centric growth strategy. MM had recognized the importance of using the Internet to facilitate delivery of its services to the local community and was working to be one of the pioneering government organizations in the region in the transformation from traditional ways of doing business to digital. Development of the new Web portal was given to a third party organization that divided the project into two parts. The first part involved developing the portal to include the basic online services, which was completed in 2007 when a group of online services was delivered.

The second part included developing the social networking interaction platform. At the time the researcher was looking for a government organization that was considering whether to adopt online social networking tools or was in the process of implementing such a tool. After several visits to MM and discussions with the IT department, MM agreed to participate in the research by involving the researcher in the implementation process of online social networking application and the ongoing administration of the developed tool.

1.2 Reporting the action research cycle

The implementation process of the online social networking services started in January 2010 and was conducted by the IT department. The project was given to the website development team, which consisted of members from both the organization and the contractor. The team was led by the IT department manager and comprised a Web developer (third party), Web operator, and the IT manager and the researcher.

Collaboration with MM covered implementation of all five phases of Susman and Evered's (1978) five-stage action research process (Diagnosing; Action Planning; Action Taking, Evaluating; Specifying Learning). Findings developed from the data collected in Phase I and Phase II of the research also helped to guide the researcher in Phase III.

1.2.1 Diagnosing

As the practical goal of the project was to develop a social networking interaction platform, the first action was to identify the types of interaction the organization would like to achieve. Several meetings were conducted to complete this task.

1.2.2 Meeting with the implementation team

Initially, the researcher attended an introductory meeting with the implementation team at the office of the IT manager. During this meeting, the team leader introduced the researcher and the scope of the project. Also a short introduction about Web 2.0 applications and their recent usage in some government institutions globally was presented by the researcher. At the end of the meeting, the team members shared their contact details and decided to meet after one week to define the organization status and need.

In the second meeting, the implementation team and the researcher initially reviewed the requirements documentation, which was prepared earlier by the IT department for the development of the new Web portal. In order to enrich the document, the researcher suggested the need to communicate with departments charged with community engagement. Specifically, he recommended asking questions relevant to the interaction objectives, methods used and the interaction challenges. He explained that the implementation of these actions would enable the organization to expand their adoption scope and help to overcome implementation and operation challenges. At the end of the meeting, the decision was made to organize meetings with two departments (A and B) to determine the current challenges facing the organization's engagement with the community and whether a social networking application could be used to overcome that problem, and other opportunities that Web 2.0 tools can provide.

1.2.3 Meeting with Department A

Department A is the Secretary of the Muscat Municipal Council. It has the main function of doing the office work of the MC, which is concerned with local residents' needs, including setting meeting agendas and writing meeting reports.

The meeting with a representative of Department A was held in the representative's office. The IT CEO introduced the researcher then he explained the main objective of the project. After that, a short introduction about the MMC was presented by the representative, before a short introduction about Web 2.0 application was presented by the researcher. Then the researcher asked the representative about types of interaction between MMC and the community. He focused on the interaction objectives, challenges and methods used.

By examining the main objectives of the interaction between MMC and the community, a possible use of Web 2.0 application was discussed in the second meeting. The researcher suggested that discussion forum can be used to collect feedback from the community regarding the defined subjects relevant to the community. The representative welcomed this suggestion. However, he noted that some members might object to using this tool because of accessibility issues such as lack of Internet usage skills. In addition, he added that the suggestion needed to be approved by the Council, which might take time.

1.2.4 Meeting with Department B

Department B was also concerned with community need. One of its main functions was identifying community feedback about services delivered by MM, by monitoring what has been published in the local press, and conducting opinion polls. At the first meeting, the team leader introduced the researcher and the objective and scope of the project was outlined. Also, a short introduction about Web 2.0 applications was presented by the researcher. Furthermore, the representative presented a brief introduction about the department, who explained the used methods to collect the feedback from the community.

The possible use of Web 2.0 applications was discussed in the second meeting. Because the department has an interest to use different tool to collect feedback from the community, the researcher asked if the department was accepting of using Blogs to collect feedback from the community about defined subjects. He welcomed the idea

and agreed to participate in the project. Thus, the decision was made to use a Blog tool to collect feedback about defined subjects.

1.2.5 Setting the main adoption objective

Setting the main adoption objective for the new OSN service was discussed with the team leader (IT manager). Based on discussions with the departments and implementation team, it was agreed that the main adoption objective of online social networking services was to enhance communication with people by providing extra communication channels that would:

- Enable people to discuss concerns about their municipality with their peers and the MM
- Attract people to use the MM website to discuss their concerns instead of using other public social networking sites
- Increase understanding about the people's needs and expectations
- Increase people's understanding about the capabilities of the MM
- Inform people about the main MM activities
- Enhance innovation by enabling people to post their suggestions and comments to improve municipality services.

1.2.6 Setting the interaction characteristics

Setting interaction characteristics was also discussed with the team leader. Initially, the researcher provided the team leader with different types of communication modes and their characteristics (presented in **Table A9.1** in **Appendix 9**). After assessing the organization's needs, the following interaction characteristics were agreed:

- The interaction should be open to everyone
- The interaction should enable two-way communication between MM and a large number of users
- The interaction should enable people to share their thoughts/information/opinions about the MM services freely and equally
- The interaction should enable people's comments to reach the relevant departments quickly

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- The interaction should be free from offensive and undesirable input
 - The interaction should be flexible in terms of duration: with limited or unlimited discussion periods
 - The interaction can be seen by all members
 - Members have the opportunity to hide their identity.

1.2.7 Selecting the applicable Web 2.0 tool

The applicable Web 2.0 tool was selected during a meeting with the implementation team. The researcher provided team members with two guides to assist them to select the applicable tool. The first showed the different types of social networking tools and their respective capability, and the second matched social networking tools with dialogue characteristics (presented in **Table A9.2** and **Table A9.3** in **Appendix 9** respectively). After discussing the organization's needs and then assessing organizational capability, the decision was made to use two Web tools: discussion forum and Blog. In addition, the implementation requirements were defined as follows:

- Customizing the forums and Blogs models of the MM content management system (CMS)
- Recruiting the management team
- Developing the training and awareness program
- Developing a marketing plan.

1.2.8 Action planning

The implementation plan prepared by the implementation team detailed customization, testing, launching and operation of the discussion forum and Blog models. The researcher attended the preparation stages. He suggested the need to define the methods of operation, which included defining the roles of the departments that would participate with the operation process, defining the feedback channels, and setting participation rules. In addition, the preparation stage defined the main implementation challenges, which team to be:

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- Lack of IT staff to operate the social networking site
 - Resistance to change because of a lack of IT skills and lack of knowledge about online sharing of information.

It was planned to overcome the problem of a lack of IT staff to operate the online interactions by involving other departmental staff in platform operation. This resulted in invitations being circulated to all departments to provide opportunity for staff who would like to join the management team.

1.2.9 Action taking

The implementation of online social networking services included three main stages: developing the application, launching the services, operating the services and evaluating the interactions. The following sections explain these stages.

1.2.9.1 Developing the application

The two models of content management system (CMS) use of the MM Web portal, forum and Blog, were customized by the Web developer. During the development and design of the two models, the W3C standard was considered. The main customization process included:

- Building the structure: the forums were divided into five sub-forums
- Translation into Arabic script
- Building content
- Adding feed and link features
- Setting participation rules
- Customizing the selected models and testing and launching the application.

During this, the researcher participated in the customization of the Blog model. He attended the review meetings where the developer presented the first and second draft of the design. Furthermore, he suggested the need to set the participation rules and present on them on the main social networking services page. This recommendation

was taken on board and the participation rules were set by the team and reviewed by the researcher. The main rules included the following:

- Refrain from sending or publishing any material that may infringe on the rights of others or defamation or violation of sanctities, or the formation of incitement to violence or hatred, or is in contravention of the general laws
- Refrain from posting comments irrelevant to the discussed topic, as this page is intended to discuss specific topics, and the municipal site provides other channels to receive suggestions, complaints and inquiries
- Refrain from publishing advertising data about individuals, institutions or products for the purpose of advertising or goods commercial recreation or any other purpose
- Refrain from publishing any personal information regarding the participant or any other person
- Refrain from the use of the site in what may be considered unlawful.

1.2.9.2 Launching the online services

After the two models were customized to achieve MM's goals and were ready for online use, the tool activation process took place, which included:

- Presenting discussion topics in the Blogs
- Implementing the marketing plan, which included sending invitations to the target group via emails and SMS messages, and promoting the new online social networking services in the most popular online discussion forums in Oman
- Providing training programs to leverage users skill about the use and operation of the applications.

During this stage, the researcher attended discussions to set the marketing plan. His role was set to promote the new services in the well-known public social networking forums in Oman. He created profiles in the three Omani social networking sites: www.s-oman.net, www.almajara.com, www.omanlover.org. He regularly observed

the interactions and answered posted questions to guide the users in how to participate with the posted topics in the new platform.

1.2.9.3 Operating the online social networking service

Initially, the IT department sent invitations to all staff to inform them that the department was looking for employees to participate in the management team. However, the response was below expectations and only a few employees showed any willingness to participate in the operations team. Thus, the decision was made to create the operation team from the IT department for the time being. In addition, the main responsibilities of the management team were set as:

- Reading/editing the input
- Responding to people's input
- Directing people's concerns to the relevant department.

The management team consisted of three employees from the Internet division; one female and two males. Because of a lack of sufficient moderators, the decision was made to control discussions by approving posted comments before they were displayed on the website. In other words, the operation team initially read the posted comment before it was launched online in order to avoid undesirable input. As the team leader declared, the intention was to improve the quality of the discussion. On this point the researcher drew attention to the need to define clear rules regarding proper participation because leaving the decision of approving or rejecting the comments to the management team without clear rules might cause some participants to leave the platform. In addition, he added that the operation team needed to be making quick decision on the posted comments and notify the participants whose comments were denied, with an explanation-since a delay in the response could result in a loss of confidence among some participants.

1.2.9.4 Evaluating the online social networking service

The original plan was to conduct regular evaluation of the effectiveness of the social networking services. Because of time limitations, this stage was not included in the research.

1.2.9.5 Evaluating the interactions

Evaluation of the action plan was to provide indication of the implementation and use of online social networking services. Although the implementation process took more than the time budgeted, all defined tasks were implemented and the social networking services successfully launched and used. The number of posted comments increasing during the first five months of the services delivery.

Appendix 9: Action Research Instruments for Phase III

Table A9.1: Communication mode characteristics

#	Characteristic	Communication mode			
		Broadcasting	Polite discussion	Skilful Discussion	Dialogue
1	Purpose	Update	Defend the view point	Analysis and reach agreement (one view)	Explore thought, Share understanding Gain insights
2	Focus on	Topic	Content	Discussion	Collaboration
3	Interaction	One way	√ two ways	√√ two ways	√√√ two ways
4	Position		To win Opposition	To win, Opposition	Participation All win
5	Control √ Member log in, registration √ Rules √ Duration		√ √ √	√√ √√ √√	√√√ √√√ √√
6	Skills Enquiry, advocate, reflect		√	√√	√√√
7	Participation (Engage in the discussion)		√	√√	√√√
8	Observable (content and members)		√	√√	√√√
9	Equal		√	√√	√√√
10	Collaborative			√	√√
11	Deliberative			√	√√
12	Creativity				√√
13	Facilitator				√
14	Suspension				√

(Bohm, 1996; Senge 1990; Isaacs, 1999; Senge et al., 1994)

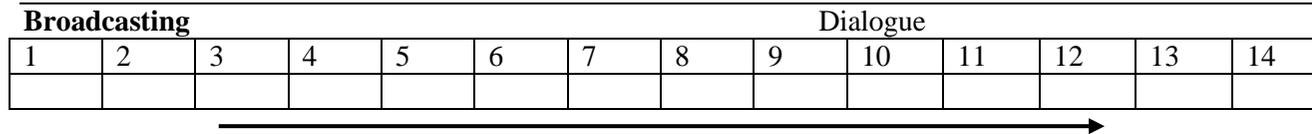


Figure A9.1: Communication Spectrum

Table A9.2: Selected online social networking tool capability

Capability	RSS	Email based	Blog	Group Email Discussion	Web-based Discussion	Wiki	Social Networking Sites
Communication ways	One-to-many	One-to-many	One-to-many	Many-to-many	Many-to-many	Many-to-many	Many-to-many
Focus on	Content Person Update	Content Person Update	Content Person Opinion Oppose Reflection	Content Group Oppose Opinion	Topic Community Discuss Oppose Opinion	Topic Community Collaborate Participate Participation	Input Build relationship Participate Participation
Intent	Individual	Individual	Individual input	Group input	Group input	Group input	Group input
Example	RSS feeder	Yahoo Groups	Blogger YouTube, Flicker	Google Groups web interface	Discussion Forum	Wikipedia	MySpace, Facebook
Content order by	Most recently	Most recently Email	Most recently posted topic	Most recently Email	Topics with new replay	Most recently posted topic	Most recently posted topic
Responses	Read	Reply	Comments	Reply	Comments, replies		
Log in		√		√	√	√	√
Registration		√		√	√	√	√
Level of			√	√	√√	√√√	√√√

Capability	RSS	Email based	Blog	Group Email Discussion	Web-based Discussion	Wiki	Social Networking Sites
participation							
Moderate					√	√	√
Easy to upload photo					√	√√	√√√
Combine RSS			√√		√	√√	√
Combine email		√				√√	√√
Edit the post after posted			√		√√	√√√	√√√
Rules level			√		√	√√	√√√
Private interaction		√		√	√	√	√
Observable of the content by others			√	√	√	√	√√
Privacy control		√	√	√		√	√
Control of content	Centralized Personal	Centralized Personal	Centralized Personal	Centralized Personal	Decentralized Group	Decentralized Group	Centralized and Personal
Private message between members	No	Yes	No	Yes	Yes	No	Yes
Show how online at given time		Yes	No	Yes	Yes		Yes
Provide statistics			No		Yes		
Notification about updating or new content is posted	Yes	Yes	Yes	Yes	Yes Some	Yes	Yes
Motivation			No		Yes	No	No
Audio, video, photo combination			√		√	√√	√√√

Table A9.3 Social networking tools-to-dialogue characteristics map

	Capability	One way communication	Interaction (two-way communication)			
		Web RSS	Blogs (video, text, photo)	Discussion Forum	Wiki	Social Networking Sites
1	Purpose	update Citizens	Get a feedback from citizens about the content	Discuss with citizens about the determined task to identify opinions	Collaborate with citizens in a determined task	Build a relationship, or promotion a determinate task
2	Focus on	Topic	Content	Discussion	Collaboration	Relationship
3	Interaction	One way	√ two ways	√√ two ways	√√√ two ways	√√√ two ways
4	Position	To win	To win Opposition	To win, Opposition Or to Participate	To participate All win	To participate All win
5	Control	No registration No rules	No registration √rules Duration	Need registration √√ rules Duration	Need registration √√√ rules	Need registration √√√√ rules
6	Skills Enquiry, advocate, reflect		√	√	√	√√
7	Participation		√	√√	√√	√√√
8	Observable		√	√	√	√
9	Equal		√	√√	√√	√√
10	Facilitator			√	√	
11	Collaborative			√	√	√
12	Suspension			√	√	√√√
13	Creativity			√√	√√	√√√
14	Deliberative			√	√√	√√√

Notes