

Summer 10-6-2011

# EVALUATING E-GOVERNEMNT IMPLEMENTATION USING AN INSTITUTIONAL PERSPECTIVE: A CASE STUDY OF OMAN

Moaman Al-Busaidy

Ramzi El-Haddadeh

Follow this and additional works at: <http://aisel.aisnet.org/ecis2011>

---

## Recommended Citation

Al-Busaidy, Moaman and El-Haddadeh, Ramzi, "EVALUATING E-GOVERNEMNT IMPLEMENTATION USING AN INSTITUTIONAL PERSPECTIVE: A CASE STUDY OF OMAN" (2011). *ECIS 2011 Proceedings*. 81.  
<http://aisel.aisnet.org/ecis2011/81>

This material is brought to you by the European Conference on Information Systems (ECIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ECIS 2011 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# EVALUATING E-GOVERNMENT IMPLEMENTATION USING AN INSTITUTIONAL PERSPECTIVE: A CASE STUDY OF OMAN

Moaman Al-Busaidy, School of Information Systems Computing and Mathematics, Brunel University, Uxbridge, UK, Moaman Al-Busaidy@brunel.ac.uk

Ramzi El-Haddadeh, Brunel Business School, Brunel University, Uxbridge, UK, Ramzi.El-Haddadeh@brunel.ac.uk

## Abstract

*Electronic government has been established as an effective mechanism for increasing government productivity and efficiency as well as a key enabler for citizen-centric services. Although e-government efforts in most developing countries started in the early 2000's and huge investments have been made by respective governments, implementation and diffusion has been extremely laggard compared to Western nations. However, there has been no universal model for evaluating the effectiveness of e-government implementation and adoption. From an institutional perspective though, economic, political and social as well as technological issues signify the most fundamental pressures that organisations face when implementing change. Using institutional theory as conceptual lens, this paper aims to provide a better understanding of the pressures that influence the success of e-government projects. This is achieved using an empirical study in a large ministry in Oman by reflecting on their e-government implementation efforts.*

*Keywords: e-government, institutional theory, public sector, Oman.*

## 1 Introduction

Governments around the world have been using different levels of information and communication technologies (ICTs) to deliver their services however, public administration has been viewed over the years as inefficient and lethargic in their execution of citizen's services (Weerakkody and Dhillon, 2008). Since then, many governments initiating e-government projects with a view of offering better and more accessible services to citizens (Weerakkody and Dhillon, 2008). This shift has been facilitated largely as a result of the availability of innovative and cost effective ICT solutions and the evolution of the Internet. While developed countries have exploited the power of the Internet to successfully e-enable public services and entice citizens, developing countries have been comparatively slow in developing successful e-government strategies (Weerakkody et al., 2007). E-government discusses the manner in which governments make use of the exchange of information and services that are pertinent with regards to citizens, individual businesses, and other governmental agencies to name a few (Welch, et al., 2005). When e-government is implemented successfully, it will ensure that there is improvement in processes within government agencies, efficiency is achieved, and public services are better managed and delivered (Riley, 2003; Irani et al., 2007). However, for e-government implementation to be widespread and successful, exemplary strategies and practices need to be identified in addition to establishing and prioritizing processes to be e-enabled. Furthermore, every e-government programme needs to have a clear idea of the proposed benefits to citizens, what challenges need to be overcome and the level of institutional change that needs to take place for it to be successful in a given context (Hazlett and Hill., 2003).

Given this context, the rationale for undertaking this research is to gain a better understanding about the implementation of 'electronic services' from the Omani government perspective. The lack of prior

published research that explores the implementation aspects of electronic services in Oman offered further motivation and rationale for undertaking this research. This study will particularly aim to answer the research question: *what are the internal and external pressures influencing e-government implementation in Omani governmental agencies?* Additionally, the research contributes to theory and practice by conceptualising electronic services implementation in the public sector from a theoretical perspective by using institutional theory as a lens. Consequently, institutional theory is used in this study to formulate a taxonomy to synergise electronic services implementation challenges in the public sector and offer a reference point for practitioners and researchers involved in public sector online services development to relate implementation paradoxes and associated complexities. This will help in providing a better understanding to the complexities of electronic services implementation, particularly from an Omani perspective.

In order to achieve the aforementioned aim, the paper is structured as follows. The next section briefly examines the background of different factors of e-government and as published in the literature. This is followed in section three by identifying the key pressures that influence organisational change from a institutional theory literature perspective to map the implementation challenges as identified from the e-government literature. Next, an overview of the research approach used for this study is offered. This is followed by a discussion of the empirical research findings highlighting the most salient issues currently influencing e-government implementation in the context of Oman and proposing a taxonomy based on e-government implementation in Oman. The paper concludes in section six acknowledging research limitations and offering suggestions for future research directions.

## **2 Background on E-Government Implementation Challenges**

One of the most significant current issues in e-government success is the adoption and diffusion of e-government services (Moon, 2002). Such issues strongly rely on the implementation of a good infrastructure that facilitates e-services flow between e-government stakeholders, government, citizens, and business (Moon and Norris, 2005). However, many researchers have identified other challenges that are common in respect to develop a successful e-government implementation in developing countries include privacy and security (Al-Khouri and Bal, 2007;; Bwoma and Huang, 2003), accessibility (Abanumy et al, 2005; Chesi et al., 2005), infrastructure (Al-Khouri and Bal, 2007; Bwoma and Huang, 2003; Chesi et al., 2005), and IT workforce capability (Bwoma and Huang, 2003; Chesi et al., 2005). Wilford et al., (2004) argues that researchers in the field of e-government consider security and privacy as one of the most important key challenges for the implementation of an e-government system. Security issues commonly consist of computer security, privacy and confidentiality of personal data (Al-Khouri and Bal, 2007; Bwoma and Huang, 2003). Conklin and White (2006) justify that information that is stored in databases and systems remain very valuable. In this case, security and privacy issues should be monitored and reviewed continuously. Underestimating the importance of this factor can result in unauthorized access to sensitive information and loss of citizens' trust, which might lead to e-government failure. Therefore, building a solid trust environment by providing a high level of data privacy, data integrity and user authorisation will ensure electronic transaction security and online identity authentication (Al-Khori and Bal, 2007; Conklin and White, 2006).

However, the fundamental concept behind the implementation of e-government is the extreme change that it will introduce to the way services are delivered within public sector institutions (Nelson, 2003). Therefore, any changes within formal structural organisations such as government units will mostly impose challenges that are surrounded by the procedures of those changes within the same organisation; nevertheless, these changes will lead the organisations to new and more advanced desirable situation (King et al, 1994). Drawing from the study done by Aldrich et al., (2002), it can be argued that there is no single list of challenges to e-government implementation. However, e-government initiatives are not easy to implement as highlighted by many researchers (Weerakkody et al., 2007; Irani et al., 2005). Ndou (2004) suggests that e-government initiatives are complex strategies

that contain a number of challenges that could impede e-government implementation. Moreover, many researchers such as Howard, 2001; Jun and Weare, (2010); and Welch, et al., (2005), argue that e-government includes fundamental transformation of the existing government which consist of other changes in many elements within public sector organisations including structure, process, culture and beliefs of the public sector stakeholders. Thus, these changes create several challenges within government organisations (Howard, 2001; Hazlett and Hill 2003; Irani et al., 2005).

The challenges resulting from organisational change have been classified by many researchers, including the above mentioned, into four key pressures. These themes include economic (North, 1990; Hirsch and Lounsbury, 1996), political (Orren and Stephen, 1994), social (Burke and Donald, 1981; Swidler, 1986) and technological (King et al., 1994; Teo, et al., 2003) pressures. Thus, based on this view, the need for a more comprehensive approach was essential to develop an integrated model of institutions drawing on and encompassing much of the contemporary work of the e-government phenomenon. For this reason, the authors posit that the use of institutional theory is appropriate as it offers a far more broad and in-depth view of the key internal and external pressures influencing change. Further, in the context of e-government, institutional theory in particular has been applied by various scholars such as Kim et al., (2009), Silva and Figueroa (2002), and Welch et al., (2010) to study the implementation of electronic services in the public sector.

### 3 A Theoretical Framework to Evaluate Pressures Influencing E-government Implementation

The implementation of electronic services in the public sector involves introducing fundamental changes to established business practices in governments' institutions. Therefore, in the study of public online services it is imperative to understand how these changes will affect public sector institutions and the resulting challenges they impose (Reffat, 2003; Nelson, 2003; Weerakkody and Dhillon, 2008). In an environment where citizens' needs and demands continuously change, institutions need to respond as quickly as possible to these changes. In this respect, an institution's response to these changes will often depend on economic, political, social and technological developments and trends in different markets or national contexts (Wheelen and Hunger, 2002; Centeno et al. 2005). There are a number of theories that have been proposed over the years to study organisational change, such as system theory, social theory, and the theory of Reasoned Action (Kritsonis and Student 2004). Among the most widely used and earliest theories of organisational change are Lewin's model (Lewin 1958; 1951), Lippitt's model (Lippitt et al. 1958), and Institutional theory (Scott 1987; 2001; DiMaggio and Powell 1991). In the context of public online services, institutional theory in particular has been applied by various scholars such as Kim et al. (2009), Silva and Figueroa (2002) and Currie and Guah (2007) to study the implementation of electronic services in the public sector.

Drawing from these arguments, this research adopts an approach to study e-government related change by considering the key pressures influencing implementation from economic, political, social and technological sides. These factors are discussed below from an institutional theory lens where the theory is used primarily as a frame of reference for classifying the internal and external influences on electronic service implementation in the public sector.

#### ***Economic Pressures***

Many researchers such as Williamson, (1981) and North, (1990) have paid relative attention toward the effects of economic pressures on organisational behaviours. According to Starbuck (1976), the goals of organisation are strongly related to the economic status, whereby these pressures were the main driver for the relationship between the status of the economy and the methods used to evaluate workers' performance. Further, researchers in the technology field have noted that economic pressure occurs mainly around issues such as transaction costs (Lubbe and Heerden, 2003). Both issues are

derived from economic status that could impact on organisations to involve the implementation of any technologies to improve the performance of a given service.

In the framework that was designed by DiMaggio and Powell (1983) for classifying the main institution pressures, they argue that to obtain a 'survival economic situation' the practices and the adopters on which the organisation is dependent must remain in good graces. Thus, economic pressures are considered as the main motivator of IT-enabled change that will utilise information systems to facilitate inter-organisational relationship among public sector (Ciborra, 1983).

for e-government, economic pressures helps the government to implement efficient and effective practices of work by minimising various cost, eliminating government corruption and reducing the number of physical buildings (Eggers, 2004). According to Sang et al., (2009) e-government is a powerful tool that helps governments to improve the governance of public administration and reduce the lack of transparency and accountability in order to deliver best practices of public services. Also, from an economic perspective, the UN report "*Leveraging e-government at a time of financial and economic crisis*" (2010) confirmed that protection of social expenditure should be one of the main characteristics of e-government implementation whereby all stakeholders of e-government will benefit. Moreover, Eggers (2004) argued that economic resources are very important to help strengthen e-government implementation to develop effective governance and increased transparency.

### ***Political Pressures***

According to Hannaway (1993) Political pressure is a significant force for organisations that operate in the same institutional environment and with similar technologies. Similarly, in this research, the political system of e-government could be conducted to extend the understanding of the political conditions under which public organizations adopt and modify their rules and regulation by the wider institutional environment (or other governmental units) (ibid). In the context of institutional theory literature, a political pressure is viewed as a significant force that generates different changes and explains how organizations are operating in the same environment and with similar technologies (Scott, 2001). Further, Institutional theory explain how political pressures influence the structuring of new rules, procedures and organisation activities which are required to develop a successful organisation (Shepsle, 1986). O'Donnell et al., (2003) suggested that new rules and activities will pressure and direct the new decisions of top management in organisations, thus, top management support plays an important role in shaping the recent and future rules and regulation of the organisation.

### ***Social Pressures***

Developments of e-government are limited by the society's usage and adoption of the internet (Pudjianto and Hangjung, 2009). While governments concentrate on modern technologies to deliver public services and transform their traditional services to a more advance level of electronic transaction through e-government implementation, the adoption of these services by citizens remain an ambiguity (Bjorck, 2004). Given this context, institutional theory explains how external pressures can control the input processes of an organisation, resulting in actions that would ultimately increase the quality of services and improve customer satisfaction (Bjorck, 2004). By gaining customers' satisfaction, organisations will be able to reduce any negative external pressure of social behaviour within an e-government context. This procedure will help public organisations to transform from traditional services to online services with respect to social behaviour. Worthy of note here is the result that transformation will have on the implementation of new rules, procedures and organisational processes that relate to and shape social behaviours (Liang et al., 2007; Teo et al., 2003). Thus, the government must provide a strategy to leverage the level of internet knowledge among citizens (Sang et al., 2009).

### ***Technological Pressures***

In the traditional literature of institutional theory, IT is conceptualised as unfolding within the changes of the structural and behavioural context of the organisation to desire better efficiency of its business

processes (Bjorck, 2004; Teo et al., 2003). Many researchers, such as Teo et al., (2003) and Liang et al., (2007) have considered institutional theory to study the affect of information technology on organisational business processes. The adoption of any new or innovative technology can often be explained by environmental influences that occur due to the various relationships of the organisation (e.g. with suppliers, customers and employees) (Teo et al., 2003). Finally, those relationships and their norms are the main reason for the diffusion of new IT guidelines (Teo et al., 2003). The customers and suppliers norms are explained by many researches as 'normative pressures' (Kondra and Hurst, 2009; Mignerat and Rivard, 2005). However, according to Silva and Figueroa (2002), the pressure varies from one norm to another (i.e. pressure from customers is stronger than that of suppliers); but the combined pressure from suppliers, customers, employees and other influences was found to have a stronger impact on the adoption of technologies (ibid). Additionally, from the government's point of view, those pressures have led government to adopt online services and several features of ICT, such as security and privacy and using interoperability standards for building e-government systems (Silva and Figueroa, 2002).

More recently, institutional theory has been used to study the effects of internal and external influences on large scale IT implementation. For example, a study by Liang et al., (2007) has pointed to the influence of top management in mediating the effect of institutional pressures on IT assimilation in large-scale enterprise systems. Other researchers, such as DiMaggio and Powell (1983), and Teo et al., (2003) have all advocated the use of institutional theory for identifying and examining key institutional determinants of IT-based adoption. Bjorck (2004) proposes institutional theory for the stability of the institutional perspective in IS/IT security in organisations. Orlikowski et al., (1995) argue that individuals employ institutional structures of signification, legitimization, and domination to make sense of the technology. Kim et al., (2009) have used institutional theory as an analytical perspective to documents and to evaluate the development of an e-government system (an anti-corruption system) in the Seoul Metropolitan government. The study by Teo et al., (2003) utilises institutional theory as a lens to understand the factors that enable the adoption in information technology. Their study showed that institutional pressures have resulted in a significant influence on organisational intention to adopt a system, and the understanding of institutional pressures when investigating information technology innovations adoption.

## 4 Empirical Data Collection and Findings

In order to create a link between theory and empirical data, this research uses a case study methodology comparing theoretical lens with empirical data gathered from the research field. This view will support the existing literature by providing the effects of various elements of the case study in practice. It is important to explore the existing literature and theoretical propositions by utilising the e-government case used in this study. Interviews represented the main data source in the case study and acted as the main tool of qualitative research for data collection (Walsham, 1995). They were conducted between July and September 2010 by visiting the interviewees in their government departments in Ministry of Manpower (MOMP), in Oman. The case study organisation (MOMP) is a large governmental agency that is responsible for delivering services to residents in Oman.

The aim of this paper is to focus and analyse findings from one in depth case study to highlight the salient themes that influence e-government and to elicit key lessons. The case used (MOMP) was ranked by the United Nations as one of the top ministries in Oman to establish e-government based on quality of the e-enabled public services. Additionally, the case suggested was ranked by United Nation to finish in second place among the world in the category of 'Improving the Delivery of Public Services' with its 'Manpower Registration System' (UN, 2010). The case revealed that significant further exploration, understanding and lessons had to be taken into account before drawing any real reflections of Omani e-government.

The focus of this paper is examining the factors influencing public sector administrators towards the e-government services implementation. Therefore, the use of the qualitative research will help in

formulating people thoughts, experiences and participations within the social and cultural context in an understandable form. Using a semi-structured interview method (Yin, 2003), the director of IT department, head of website section, head of application development and two employees from operational level management were interviewed in MOMP. The chosen case comprehensively illustrated the local administration services within the Omani government and was actively involved in e-government implementation. The ministry are responsible for delivering key public services and thus played an important role in the relationship between the Omani government and its citizens. The case study started by exploring the different roles played by the ministry in the last three years. The interviewees were chosen because they participated in different projects relating to the e-government initiative in MOMP. The authors assumed that the interviewees held insightful views of the e-government initiative in the ministry.

The interviews consisted of forty two independent questions that were identified and structured around key themes recognised from the literature and an initial semi-structured pilot interview conducted with the Chief Executive Officer (CEO) of the Information Technology Authority (ITA) in Oman. The interview with the CEO was held in August 2010, and the questions that were constructed for the case study was suggested upon the current status of e-government in Oman. The questions identified a set of relatively standardised items to be described and analysed in the interview. This was done by having the participants discuss and choose among a set of propositions related to the ITA CEO's suggestions. Based on the interview results, a number of items could be considered important in a focused case study. The questions were divided into three main areas, including establishment of e-government, pressures (economic, political, social and technological) that are related to e-government and other expected challenges of e-government development in Ministry of Manpower. Furthermore, the selection of MOMP for this research was based on insights and suggestions made by the CEO of ITA related to e-government practices and development by various agencies in Oman. To ensure voluntary participation, clarity and simplicity of the information gathered, the interviewees decided convenient times for the interviews. Before the interviews commences, the interviewees were notified that they could stop and withdraw from the interview at any time if they desired. Interview with each person lasted between three to five hours and was performed over two to three meetings with the interviewer, often in the same week. Findings and Discussion: Ministry of Manpower in Oman

The Ministry of Manpower is mainly focused on G2C, G2G and G2B models of e-government. The objectives of this ministry are as follows: preparation of draft laws and systems regulating the labour market and vocational training sector in Oman. After conducting interviews at the MOMP with the director of the IT department, the head of software development, the senior development engineer and the head of web application from the same IT department working at different levels of management and responsible for e-government implementation, it was determined that the MOMP's technological background illustrates that its IT infrastructure and e-government projects are far more superior than those in other ministries in Oman. .

The interviews in the MOMP identified a number of different issues that followed the implementation and diffusion of e-government in the MOMP. As indicated below, the interview results also indicated that the MOMP investigated in the study was at a successful level of e-government implementation when compared to the literature on the evolution of e-government and to other ministries in the sultanate of Oman. The findings are analyzed according to the framework of economic, social, political and technology pressures proposed in institutional theory.

### ***Economic Pressures***

Noticeable economic challenges are a primary obstacle to economic development for public sector agencies. The head of application development highlighted that *"The online based payment system is fully integrated with all solutions to provide flexibility in payment options for the renewal of labour permits. The processes have managed and increased the percentage of those using electronic e-payment transactions, and cash payments were completely eliminated. As a result, the Ministry has reduced public effort and cost. This initiative of the ministry has played a big role in increasing*

*income for the ministry and private sector services (assigned by the MOMP) and also increasing income for the government from the application forms provided by the ministry.*" This conforms to what Lubbe and Heerden (2003) has indicated in their study whereby transactional cost could play an influential role on adding an economical pressure on the organisation.

The technological background of the IT director of the MOMP illustrates that the MOMP's IT infrastructure has been developed in the past ten years, which makes it more convenient for other ministries to integrate their systems with the MOMP. During the time of integration, the MOMP vision is to provide convenient electronic services through numerous channels for everyone, with a special focus on web-based payment services for maximizing citizen usage of Manpower IT and improving different economic challenges. Thus, the director of the IT department and others mutually agreed that *"over ten years, the (MOMP) has been devoted to improving our ICT infrastructure and performance under the responsibility of the Information Technology Department.* Further, he continues *"...As technology developed, the MOMP developed a secure payment system using web services and the new web version of smart forms. The payment system is fully integrated with all solutions to provide flexibility in payment options for the renewal of labour permits."* Such IT-driven change will then utilise information systems that will facilitate inter-organisational relationship among public sector organisation (Ciborra, 1983).

Citizens within the country require better services at lower costs and greater responsiveness in a dynamic and continuously changing environment; In support of this, the MOMP makes some innovative use of ICT in delivering services, such as through SMS messaging by Omani jobseekers to pursue the registration process and transform their data between different public agencies. The web application manager stated, *"The nature of the MOMP's work is to inform the job providers and jobseekers of various supports and opportunities that are appropriate for their needs. Thus, since 2005, the MOMP has implemented the SMS system to provide citizens with the needed information to update all their users with the latest MOMP news.* Interestingly, Evans and Yen, (2005) argued that e-government will protect these expenditures for both the citizens and government. Controlling expenditures will result in better accessibility and availability of e-government services to stakeholders and reduce paperwork, the need for physical offices and the number of workforces that are needed for the public administration (Evans and Yen, 2005; Eggers, 2004).

### ***Political Pressures***

In the context of e-government, institutional theory relates to forming new rules, procedures, arrangements and actions, which are required to develop a successful e-government system (Shepsle, 1986). Those new rules and regulations will influence the decisions and behaviour of leaders and decision makers in the public sector organisation (O'Donnell et al., 2003). The MOMP acquired significant implementation support when attempting to build their e-government applications because of needed top management support and the requirement to provide an integrated system of laws and regulations. The senior development engineer reported, *"...our main key success is implementing policies and procedures per e-government; in our case, all the new procedures were approved and followed by top management, besides ensuring successful implementation."* Henriksen and Damsgaard (2007) noted that there is always a strong need for political consideration when a new strategy comes into place, such as new technology. However, new technologies will produce a number of opportunities and problems that could be organised using new rules and regulations (ibid). In the context of e-government, public administrators need to implement a new vision, which will require new rules and regulations in order to achieve a new shape of services that will facilitate public sector transformation (Doherty and King, 2001).

In addition, there was a key relation between management support and the building of a successful e-government system. The head of software development stated, *"...there was a real need to implement new rules and regulations parallel with the MOMP e-government workflow; thus, our management provides management understanding and support, strategic plans and better utilisation of technology."* The IT director added, *"Our leadership gives enough support to the IT team and other*



*participants in the implementation of any e-initiatives in our ministry.*"The MOMP found that the implementation of the e-government system has shown that the regulatory dimension was most effective, and strong leadership was crucial to its success. On the other hand, building an open IT system such as the MOMP e-government system can explore how relations work between public agencies, and this will encourage other agencies to integrate/share one system.

### ***Social Pressures***

Interviewees have highlighted that MOMP has utilised information sharing with citizen to promote and motivate them to engage with its services. The head of web application reported, *"Usually after implementing new technology, we provide a video tutorial that shows how to use these services. Those videos are uploaded on our web site for additional support."* Moreover, the head of web application highlighted that *"...the MOMP gives details about the use of eServices in newspapers, radio interviews and television interviews. Our brochures are distributed among the public through our offices and through our Website to illustrate and maximise the benefits of eServices."*

Through their Web site (e-services strategy), which was adopted in 2003 and implemented in May 2007, the MOMP has embarked on an ambitious journey of transforming their services to empower citizens. Thus, the MOMP has facilitated social participation, increased the quality of life, increased privacy and security and established e-payment in one single Web site. When we discussed the social issues of e-government with the IT department participators, the director of the IT department replied, *"Citizens can post queries/complaints and check their progress with the relevant MOMP departments. This shows how the MOMP is committed to incorporating citizen's participation into its decision making process."* Thus, transformation will influence the implementation of new rules, procedures and organisational processes that relate to and shape social behaviours (Liang et al., 2007; Teo et al., 2003). The MOMP e-government implementation is used as a tool to ultimately increase and control the quality of its services and improve customer satisfaction. To maintain the improvement of customer satisfaction, the MOMP organisation will be able to improve citizens' empowerment and transparency within e-government context.

### ***Technological Pressures***

From the interviewee's point of view, technological influences have led the MOMP to adopt online services and ICT related procedures such as security and privacy, system reliability and availability and international standards for successful e-government implementation. Thus, one of the most important issues in the e-government model is integration among different government agencies. The head of software development highlighted that the MOMP e-government system allows other government bodies to establish a standard system or network among government agencies with faster and more efficient information exchange. The director of the IT department reported *"...Our IT team has implemented technology-related solutions as well as policies and procedures for the MOMP online services to maintain systems stability."*

One of the key issues that emerged during the empirical research revolved around the appropriate use of ICT standards and systems integration that public agencies face. In the literature, several authors such as Irani et al., (2008) identified IT standards as a major factor during the implementation and integration of various technologies in an e-government context. Moreover, the head of software development added, *"When we started our in-house software development, we decided that using the latest application software is an initial step. This has reduced standard related problems and has made upgrades and integration with other agency applications easier this results in a convenient environment for any internal and external integration."* The integration factor is seen in the literature as a key success factor to enable "joined up" access to e-government services through the concept of a single portal Irani et al., 2007; Weerakkody and Dhillon, 2008). The empirical evidence in the MOMP case also highlighted the importance of maintaining a single point of access to the various online services provided by the respective governments. The above discussed theoretical classification of the internal and external influence factors on e-government implementation are captured in the taxonomy presented in table 1.

Pressure	Factors	Description	Relates to MOMP E-government Implementation
Economic	Reduce transaction cost	Each and every change that happens within or across the boundaries of e-government systems	Greater intent to adopt e-government systems, increasing income for MOMP and private sector services.
	Revolution and growth of ICT	Implementing the best practices of ICT, improve the business processes by using the latest technologies	Improve the MOMP information availability and transparency within and outside the ministry
	Protect expenditures	better services at lower costs, Reduce cost for public sector and citizens	Reduce the MOMP paperwork and the need for physical offices.
Political	Leadership	Decision makers in the organisation to understand the internal and external impacts of e-government	Participated in the MOMP e-initiatives and encourage employees to do their best.
	Top management support	Providing the support for forming new rules, procedures, arrangements and actions towards e-government services	Ensure the success of MOMP systems by following a step-by-step development and providing the needed management understanding and strategic plans.
	Rules and regulation	Providing the support for regulatory and legal issues at all levels of government in order to achieve public sector transformation	Legalise the use of the MOMP electronic transaction and obtain a healthy environment for e-government implementation.
Social	Digital divide	The ability to access information and transaction services, and citizen participation.	The MOMP undertook to train citizens about the e-government initiative and distribute its brochures, newspaper and TV/Radio programs.
	Citizen empowerment	Empower the citizens by reduce efforts to obtain their needs.	The MOMP system obtains a multi-level of support for the citizens to easy access and delivers services.
	Transparency policies	Sharing of information and participate the citizens with new rules and regulation	The MOMP provides feedback form, online polls, and hotline complains for the citizens to participate in the existing rules and conditions.
Technological	Standardisation	Standard use of different development tools within e-government implementation	The MOMP system can integrate with any other public agency applications.
	Stability	Operate e-government in a stable and secure environment (include privacy and security)	Formulate and shape the quality of the MOMP e-government service
	Internal and external integration	Integrates a system across different roles that provide a full and real 'one stop shop'/portal.	The MOMP is providing the access to citizens and other users from one single integrated gateway.

*Table 1 A Conceptual Taxonomy for understanding the Implementation and Institutionalisation of e government Initiatives*

## 5 Conclusion

This research conceptualised the pressures influencing e-government implementation success in the context of a large public ministry in Oman. Through this research, the authors have attempted to highlight some of the key factors that can enable the e-government implementation process to succeed. While the e-government literature showed that there is a lack of prior published research that explores the economic, political, social and technological pressures of e-government, institutional theory offered a theoretical lens for outlining these pressures. From an empirical perspective, this study explored one Omani government ministry who is involved in e-government implementation. The case study findings indicated that recent implementations of e-government in the MOMP have continued to follow the guidelines and procedures set by the national government for implementing e-government. Nevertheless, it was clear that the MOMP, although having achieved a successful level of e-government implementation at present, faced many different challenges.

The aim of this research was to explore the pressures that influence e-government implementation empirically in the context of Oman. While the literature review identified a number of key pressures that influence e-government implementation, the MOMP case study conducted revealed the influence of these pressures in practice. As a qualitative research, this study has been conducted to explore e-government implementation efforts in the MOMP and the subsequent challenges faced within the past three years. By proposing a conceptual taxonomy for understanding the implementation and institutionalisation of e-government initiatives, the authors hope that this study has taken a step further in helping to clarify the paradoxical nature of e-government implementation.

As outlined from the empirical findings; economic, political, social and technological pressures have a considerable as much as significant impact on the implementation of e-government projects. Reducing transactional costs, evolution and growth of ICT and protecting expenditures were outlined as the main factors of economic pressures. While leadership, top management support, and regulation were seen as political pressures, digital divide, citizen empowerment as well as policies transparency have been highlighted as the main social pressures that influence e-government implementations. Finally, there has been an emphasis on standardisation, stability, internal and external integration as technological pressures.

The practical implications from this study for policy makers and e-government project implementers in Oman can be summarised as follows:

- The challenges outlined in this study indicate that these objectives are not easy to realise in practice and that more focus is needed to develop strategies which would minimise the negative impact of these challenges. Thereby, appropriately addressing these factors will result in improvement of e-government implementation and diffusion efforts in Oman.
- Well-coordinated efforts are needed by various government agencies' leaders and policy makers as well as implementers to substantiate that a good level of standardisation, stability and integration among used technologies are provided to ensure the quality of the public sector services. Therefore, for the e-government project (eOman) implementation, technological factors have to be considered for providing a better service quality

Although the single case study is acknowledged as a research limitation, the research data was collected using in-depth interviews with key employees responsible for e-government, official government documentation and observations. To increase the ability to generalise and utilise the empirical findings in the wider Omani context, the authors have planned to pursue further research in two other ministries during the third quarter of 2011 to maintain the needed level of triangulation. Future research could also target other cities in Oman to examine the willingness of other traditional ministries to shift to e-government services. Finally, the current study was not specifically designed to evaluate issues related to citizens' perspective on the adoption of and value added by e-government.

## References

- Abanumy, A., Albadi A. and Mayhew, P. (2005) 'e-Government website Accessibility: In-Depth Evaluation of Saudi Arabia and Oman', *The Electronic Journal of e-Government*, 3 (3), pp 99-106
- Al-Khouri, A. and Bal, J. (2004) 'Electronic Government in the GCC Countries', *International Journal of Social Sciences*, 1 (2), pp.83-98
- Aldrich, D., Bertot, J. C. & McClure, C. R. (2002) E-government: Initiatives, developments, and issues. *Government Information Quarterly*, 19, 349-355.
- Bjorck, F. (2004) Institutional theory: A new perspective for research into IS/IT security in organisations.
- Burke, J. and Donald, C. (1981). The link between identity and role performance, *Social psychology Quarterly*. 44:93-92.
- Bwoma, P.O. and Huang, Z. (2003) 'An overview of critical issues of E-government', *Issues of Information Systems*, 4 (1), 164-170.
- Centeno, C., Van Bavel, R. and Burgelman, J. C. (2005) A prospective view of e-government in the European Union.

- Chesi, F., Pallotti, M. & Oreste, S. (2005) A Working E-Government Experience: The Citel Project CMG. Poland Annual Conference. Warsaw, 9-10 May, <http://www.w3c.it/papers/cmg2005Poland-egov.pdf>
- Ciborra, C.U. (1983) Markets, bureaucracies and groups in information society, *Information Economics and Policy*, V. 1, Pp. 145-160.
- Conklin, A. and Wwhite, G. (2006) 'e-government and cyber security: the role of cyber security exercises', proceedings of the 39th annual hicss. Ieee computer society.
- Currie, W. L. & Guah, M. W. (2007) Conflicting institutional logics: a national programme for IT in the organisational field of healthcare. *Journal of Information Technology*, 22, 235-247.
- DiMaggio, Paul and Walter Powell. 1983. "The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields." *American Sociological Review* 48: 147-60.
- DiMaggio, Paul and Walter Powell. 1991. "Introduction." Pp. 1-40 in W. Powell and P.DiMaggio (eds.), *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago.
- Doherty NF and King M (2001) An investigation of the factors affecting the successful treatment of organizational issues in systems development projects. *European Journal of Information Systems* 10, 147-160.
- Eggers, W. D. (2004). Boosting E-Government Adoption. Deloitte Research Public Sector, FTA Annual Conference.
- Evans, D. & Yen, D. C. (2005) E-government: An analysis for implementation: Framework for understanding cultural and social impact. *Government Information Quarterly*, 22, 354-373.
- Hannaway, J. 1993, Political Pressure and Decentralization in Institutional Organizations: The Case of School Districts, *Sociology of Education*, American Sociological Association, Vol. 66, No. 3, pp. 147-163
- Hazlett, S. and Hill, F. (2003) 'E-government: the realities of using IT to transform the public sector', *Managing Service Quality*, Vol.13, No. 6,
- Henriksen, H. Z. and Damsgaard, J. (2007) Dawn of e-government - An institutional analysis of seven initiatives and their impact. *Journal of Information Technology*, 22(1), pp. 13-23.
- Hirsch, M. and Lounsbury, M. (1996) Rediscovering volition: The institutional economic of Douglass C. North. *Academy of Management review* Vol.21, Pp. 872-884.
- Howard, M. (2001) e-Government Across the Globe: How Will "e" Change Government? *Government finance review*, 17, 6-9.
- Irani, Z., Elliman, T. & Jackson, P. (2007) Electronic transformation of government in the UK: a research agenda. *European Journal of Information Systems*, 16, 327-335.
- Irani, Z., Love, P. E. D. & Jones, S. (2008) Learning lessons from evaluating eGovernment: Reflective case experiences that support transformational government. *Journal of strategic information systems*.
- Irani, Z., Love, P. E. D., Elliman, T., Jones, S. & Themistocleous, M. (2005) Evaluating e-government: learning from the experiences of two UK local authorities. *Information Systems Journal*, 15, 61-82.
- Jun, K. and Weare, C., (2010) *Institutional Motivations in the Adoption of Innovations: The Case of E-Government*, Published by Oxford University Press on behalf of the Journal of Public Administration Research and Theory, Inc.
- Kim, S., Kim H.J. and Lee, H., (2009) An institutional analysis of an e-government system for anti-corruption: The case of OPEN, *Government Information Quarterly*, 26 (1), pp. 42-50.
- King, J., Gurbaxani, V., Kraemer, K., McFarlan, F., Raman, K. and Yap, C. (1994). Institutional Factors in Information Technology Innovation, *Information Systems Research* 5(2): 139-169.
- Kondra, A. Z. & Hurst, D. C. (2009) Institutional processes of organizational culture. *Culture and Organization*, 15, 39-58.
- Kritsonis, A. & Student, M. (2004) Comparison of change theories. *International journal of scholarly academic intellectual diversity*, 8, 1-7.
- Lewin, K. (1951) *Field Theory in Social Science*. New York, Harper.
- Lewin, K. (1958) *Group Decisions and Social Change*. In: G.E. Swanson, T.M. Newcomb and E.L. Hartley. *Readings in Social Psychology*. New York, Rinehart and Winston.
- Liang, H., Saraf, N., Hu, Q. & Xue, Y. (2007) Assimilation of enterprise systems: The effect of institutional pressures and the mediating role of top management. *Management Information Systems Quarterly*, 31, 59.
- Lippitt, R., Watson, J. & Westley, B. (1958) *The dynamics of planned change*. New York, Harcourt, Brace and World.
- Lubbe, S. & Van Heerden J. M. 2003 (Eds.) *The Economic and Social Impacts of E-Commerce*. Hershey, PA: Idea Group Publishing.
- Mignerat, M. & Rivard, S. (2005) Positioning the institutional perspective in information technology research. *Cahier de recherche* no, 5, 01.

- Moon, M.J., Norris, D.F, (2005) Does managerial orientation matter? The adoption of reinventing government and e-government at the municipal level. *Information Systems Journal* 15, 43–60
- Moon, M.J. (2002) the evolution of e-government among municipalities: rhetoric or reality?'. *Public Administration Review*, 62 (4):424.
- Ndou, V.D. (2004) 'E-government for developing countries: opportunities and challenges', *The Electronic Journal on Information Systems in Developing Countries*, Vol. 18 No.1, pp.1-24.
- Nelson, L. (2003) A Case Study in Organisational Change: Implications for Theory. *Learning Organization*, 10, 18 - 30.
- North, D. C. (1990) *Institutions, institutional change, and economic performance*, Cambridge University Press.
- O'Donnell, O., O'Donnell & Peter, T. V. O., Humphreys, C. & Humphreys, P. C. (2003) *E-Government and the Decentralisation of Service Delivery: CPMR Discussion Paper 25*, Institute of Public Administration.
- Orlikowski, W. J., Yates, J. A., Okamura, K. & Fujimoto, M. (1995) Shaping electronic communication: the metastructuring of technology in the context of use. *Organization* Layne, K. & Lee, J. (2001) Developing Fully Functional E-government: A four-stage model. *Government information quarterly*, 18, 122-136.
- Orren, K. and Stephen, S. (1994) Beyond the iconography of order: Notes for "new" institutionalism. In *the dynamic of America politics*, Pp. 311-332.
- Pudjianto, B. and Hangjung, Z., 2009, Factor Affecting E-Government Assimilation in Developing Countries, Proceeding in 4th Communication Policy Research, South Conference, Negombo, Sri Lanka.
- Reffat, R. (2003) *Developing A Successful E-Government*. School Of Architecture, Design Science And Planning. University Of Sydney, Australia.
- Riley, T. B. (2003) 'Defining E-Government and E-Governance: Staying the Course'. *eGov Monitor*
- Sang, S., Lee, L.D. and Lee, J., 2009 E-Government challenges in Least Developed Countries (LDCs): A case of Cambodia, 11th international conference on Advanced Communication Technology 2009 (ICACT 2009), 15-18 Feb, Pp. 2169 – 2175
- Scott, W. R. (1987) The adolescence of institutional theory. *Administrative Science Quarterly*, 493-511.
- Scott, W. R. (2001) *Institutions and organizations*, Sage Publications.
- Scott, W. R. (2008) *Institutions and organization, ideas and interests*, 3rd edition, Sega Publications, Inc.
- Shepsle, K. A. (1986) Institutional equilibrium and equilibrium institutions. *Political science: The science of politics*, 51-81.
- Silva, L. & Figueroa, B. (2002) Institutional intervention and the expansion of ICTs in Latin America. *Information Technology & People*, 15, 8-25.
- Starbuck, W., 1976, *Organizations and their environment*. In *handbook of Industrial and organizational psychology*, ed. Marvin D. Dunnette, 1069-1123, New York: Road McNally.
- Swidler, A. (1986). Culture in action: Symbols and strategies. *American Sociological review* 51:273-286.
- Teo, H. H., Wei, K. K. & Benbasat, I. (2003) Predicting intention to adopt interorganizational linkages: An institutional perspective. *MIS Quarterly*, 19-49.
- UN, (2010) *Public Administration News*, United Nations publication, <http://www.unpan.org/Regions/ArabStates/PublicAdministrationNews/tabid/114/mctl/ArticleView/ModuleId/1463/articleId/21760/Default.aspx>, last accessed 10/10/2010.
- Walsham, G. (1995) Interpretive case studies in IS research: nature and method. *European Journal of Information Systems*, 4, 74-81.
- Weerakkody, V. & Dhillon, G. (2008) Moving from E-Government to T-Government. *International Journal of Electronic Government Research*, 4, 1-16.
- Weerakkody, V., Jones, S. and Olsen, E. (2007) 'E-Government: A Comparison of Strategies in Local Authorities in the UK and Norway', *International Journal of Electronic Business*, Inderscience, 5 (2), pp 141-159.
- Welch, E. W., Hinnant, C. C. and Moon, M. J. (2005) 'Linking Citizen Satisfaction with E-Government and Trust in Government'. *Journal of Public Administration Research and Theory* 15[3], 371-391.
- Welch, E., Hinnant, C. and Moon, M. (2010), Linking Citizen Satisfaction with E-Government and Trust in Government, *Journal of Public Administration Research and Theory*, Vol. 15, no. 3
- Wheelen, T. L. & Hunger, H. (2002) *Strategic Management and Business Policy* (8th edition). Prentice Hall, Upper Saddle River, NJ 07458.
- Wilford, D. Sakals, M. Innes, J. Sidle, R. and Bergerud, W. (2004) 'Recognition of debris flow, debris flood and flood hazard through watershed morphometrics', *Springer Berlin / Heidelberg*, Volume 1, Number 1.
- Williamson, O. E. (1981) The economics of organization: The transaction cost approach. *American journal of sociology*, 87, 548.
- Yin, R. K. (2003) *Applications of case study research*. Newbury Park, CA, EUA: SAGE.