



**EXPLORING STRATEGIC LEADERSHIP  
CHALLENGES IN ACHIEVING AN ICT-ENABLED  
TRANSFORMATIONAL GOVERNMENT**

**Thesis submitted for the degree of Doctor of Philosophy by**

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**2011**



## Abstract

This empirical research focuses on exploring the role of strategic leadership in the shift from Electronic Government (eGovernment) to Transformational Government (tGovernment). Despite the fact that many countries have implemented eGovernment, the literature reports a number of them have failed to reach the promised seamless transformation. Moreover, there is a dearth of research into the domain of tGovernment; the research which exists is limited in extent thus leaving scope for timely and novel research contributions. This thesis reveals that a valuable contribution to knowledge could be derived from exploring the domain of transformational government. The leadership motivation and incentives to conduct a radical government organisational change have become an area of great importance. There is limited research on the strategic role of leadership in achieving transformational government domain; hence, the implications of seamless integration for transformational government have yet to be explored.

This research discusses transformational government by using a qualitative, multiple case study research strategy. Data is triangulated and analysed according to its explanatory properties and underlying structural context. This research extends established norms in literature for tGovernment implementation by incorporating established theories in organisational change from other related disciplines. This is to explain the significance of the underlying philosophical nature of the emerging themes, thus enabling government leaders to create robust strategic proposals for tGovernment. This empirical research is conducted in a Middle Eastern cultural context based in Dubai, United Arab Emirates.

The research arrives at several key findings and themes that contribute to the body of knowledge. A primary finding is the need for a radical change and an innovative managerial approach in using ICT to enable radical change in government organisations. A related finding of this research is that many assumptions underlying the various tGovernment models for transformation fall short to empirically explain the transformational government domain. The government visionary leadership has been proven to be a powerful driver for change in terms of initiating and leading the process for transformational government.

## Acknowledgement



I would like to express my sincere gratitude and thanks to all those who have offered help, and advice over those years of enduring doctoral research. It is recognised that research activity is a collaborative effort in nature; and the research presented in this thesis is no exception. The support of a number of individuals and organisations is gratefully acknowledged.

I would like to express my gratitude to my supervisors Dr. Sarmad Al-Shawi and Professor Zahir Irani for their enthusiastic support, advice, patience and constant energy for ideas' sharing throughout the research effort. Their influence is inherited in both the theoretical and practical aspects of this work. I would like to thank Dr. Vishanth Weerakoddy, Dr Muhammad Kamal, Professor Ibrahim Osman, Dr. Farouk Missi, and Professor E.H. Twizell for their constant encouragement, guidance and support. My additional big thanks also go to Professor Irani rectifying me throughout my doctoral studies and offering me a part-time lecturer position at Brunel Business School.

I owe special thanks to my father (*Mustapha Elnaghi*) who managed to help me to get to the stage due to his struggle and hard work throughout his life, as a motor mechanic, and supporting his children for the best education, and for this I am proud of him. I also extend my great debt to H.E. Mr. Moustafa Durnaika Chairman of SOGEX Services International Ltd for his benevolent support to come to the United Kingdom to pursue my further education. I again owe big special thanks to my wife Fatima for her immense support (morally, emotionally, intellectually, and financially!) all the way through my doctoral studies and my beautiful daughters Sarah and Rayen Naghi and my son Mustapha. Last but not the least, in terms of exchange of ideas, support, criticisms and intellectual stimulation, thanks is offered to all my fellow members of academic staff at the Brunel Business School. I also acknowledge, with great thanks, the case government organisations of Dubai Government namely: (Dubai Municipality, Dubai Police, and Dubai Naturalisation & Residency Department) and their staff, who contributed to the empirical side of this work with their transparent openness, for their welcoming generosity with time, support and professionalism.



## **Declaration**

I declare that, to the best of my knowledge, no portion of the study referred to in this thesis has been submitted in support of an application for another degree, or qualification, to any other university, or institution of academic learning.

The thesis conforms to the British Standard BS 4821: 1990, the 'British Standard Recommendation for the Presentations of the Thesis and Dissertations', and follows the Harvard referencing system.

**Marwan Elnaghi**



## Dedication

Dedicated with love to my parents,  
my wonderful wife Fatima and  
my lovely children  
Sarah, Rayen and Mustapha  
And beautiful addition to our family,  
Isa Ibn-Shakeeb (grandson)



## Publications

This thesis gives an account of the research undertaken in this empirical study. Some of the material displayed herein has already been published, is accepted and yet to be published or is under review in the form of the following publications:

**Elnaghi, M.**, Al-Shawi, S., Irani, Z., and Kamal, M. 2011. An Authority's Role Managing Transformation in Service Re-engineering: Experience from Dubai. *Government Information Quarterly*. (Under review)

**Elnaghi, M.** AlShawi, S. and Seitanidi, M. 2008. Towards Designing A Sustainable Is-Enabled Service Delivery System. *Proceeding European and Mediterranean Conference on Information Systems (EMCIS08)* May 25-26, 2008, Dubai, UAE.

**Elnaghi, M.**, Elliman, T., AlShawi, S., Aziz, W. and Kamal, M. 2008. The Motivations For Change Towards A Single Channel Transformational Government At Dubai Municipality. *eGovernment Workshop '08 (eGOV08)*, September 8, 2008, London, UK.

Kamal, M., Themistocleous, M. Elliman, A. and **Elnaghi, M.** 2008. Prioritising Factors Influencing EAI Adoption in Local Government Authorities Using the AHP Technique. *eGovernment Workshop '08 (eGOV08)*, London, UK.

**Elnaghi, M.**, AlShawi, S. and Missi, F. 2007. A Leadership Model for eGovernment Transformation, *Proceeding European and Mediterranean Conference on Information Systems (EMCIS07)*, June 24-26, 2007, Valencia, Spain.

**Elnaghi, M.**, AlShawi, S., Weerakkody, V., and Aziz, W. 2009. Instigating Transformational Government At A Municipality Level: A Case Study. *Handbook of Research on ICT-Enabled Transformational Government: A Global Perspective*. IGI Global Publishing USA.



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## Chapter 1: Introduction to the Research Area

### Summary

Literature reports that eGovernment maturity towards transformational government (tGovernment) is progressing at a rather slow pace. This is demonstrated over the years with a real disappointment in meeting citizens' and businesses' demands with expectations for seamless integration that transformed services offer. This issue has been attributed to the ill definition of transformational government concept, limitations of available appropriate technologies as well as lack of open collaborations amongst agencies and public service organisations. This can also be ascribed to a lack of real support from government leaders, poor infrastructures which are not integrated and which may have an open platform that do not allow them to deliver end-to-end integrated services. Despite the fact that eGovernment has been implemented by many countries around the world, the shortfall in achieving full potential for seamless integration is still considerable. It is essential, therefore, for government leaders in charge of eGovernment implementation to realise the importance and complexity of transformational government and adopt an appropriate strategy to speed up their decision-making process to achieve the transformational domain.

## 1.1 Introduction

The emergence of eGovernment in the late 1990s has revolutionised the management and delivery of public services in the 21st century (Caldow, 2001; Choudrie *et al.*, 2004; Currie *et al.*, 2011). The normative literature (Abdulla, 2007; Choudrie *et al.*; 2004, Kamal *et al.*, 2011; Schuppan, 2009; Shareef *et al.*, 2011) investigates and analyses eGovernment adoption from different perspectives, and the debates on benefits and evaluations continue to generate interests amongst academics and practitioners alike (Heeks and Bailur, 2007; Irani *et al.*, 2008b; Janssen *et al.*, 2009; Kamal *et al.*, 2011). Having largely evolved from eCommerce and eBusiness concepts, eGovernment requires the coordinated collaboration of various stakeholders, alongside the integration of business processes and information systems in disparate government organisations (Caldow, 1999; Carter and Belanger, 2003; Huang, 2000; Lenk and Traunmuller, 2002).

In the last few years, having seen the benefits of eCommerce and eBusiness, substantial investments have been made by governments around the world to improve their infrastructure using technology (Andersen and Henriksen, 2006). Despite these huge investments, improving interoperability and integration in the context of eGovernment moving into the advanced stage of maturity, which is referred to as transformational government, still presents a significant challenge (Borras, 2004 ; Scholl, 2003; United Nations, 2008; West, 2004). This is because the government organisation in general can be characterized as a largely non-process-oriented and legacy driven system. However, over the past few years, web services technology (such as Web 2.0) and service-oriented architecture have encouraged and offered an innovative context for addressing some of these integration issues which could make organisational transformation feasible. From an organisational perspective, as this research is conducted, the implementation of transformational government (tGovernment) demands the reengineering of business processes and supporting information systems in an innovative way (Irani *et al.*, 2007b) that is more radical than any other form of change seen in government organisation. This in itself creates demands for a new style of visionary leadership<sup>1</sup> in government organisations that can lead the transformation process (Morse, 2010). Leadership itself should be viewed as being embedded in a societal context and influenced by (as well as influencing) the institutional environment of organisations and its effectiveness (Battilana *et al.*, 2010; Yukl, 2008). The extant research on leadership,

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<sup>1</sup>-- The view taken in this thesis on leadership in a tGovernment context is closely coupled with the innovative visionary senior leaders (or government officials) who govern a country at the time of tGovernment implementation. Therefore, leadership is defined as the willpower of political leaders in senior management that support tGovernment implementation with strong level of commitment as a strategy to electronically provide government services to stakeholders and transform the business of government.



however, has largely neglected the effect of the institutional environment (Currie *et al.*, 2009). Consequently, there are many technical, organisational, cultural and managerial challenges that need to be resolved in addressing transformational government (Allen *et al.*, 2001; Evans and Yen, 2005; Scholl, 2006; Dwivedi *et al.*, 2006).

Furthermore, the literature on the implementation and adoption of transformational Government for development is exceptionally limited, since different government agencies and authorities are showing slow progress in that direction and may be characterised as laggards (Heeks, 2005; United Nations, 2008). The few studies that have discussed transformational government have defined it as the major shift and a managed process of ICT-enabled change from eGovernment towards a much more radical shared services focus which puts the needs of citizens and businesses at the heart of that process. This is to achieve significant transformational impacts on the efficiency and effectiveness of government and on transforming the relationship between the public sector and users of public services. (Irani *et al.*, 2008; Janssen *et al.*, 2007; Weerakkody, 2011; Borrás 2011) In order to provide a better understanding of this new phenomenon a variety of models related to tGovernment have been reported in the literature (Gottschalk, 2009); however, the applicability and validity of these models in the area of eGovernment domain is arguable and under researched (Kamal *et al.*, 2011). There are also reported differences indicating that the factors that influence the decision-making process for eGovernment adoption differ from one country to the other depending on the cultural nature and size of organisations. In addition, there are differences among the influential factors that are used in investigating different models based on the theoretical focus and perspective. Despite the fact that these models having several common factors, and to the best of practitioner's knowledge, there is no specific model that investigates tGovernment implementation and adoption<sup>2</sup>. Moreover, there is still considerable confusion as to what constitutes tGovernment, since these new phenomena have been studied and analysed from different disciplines. As a result, further research is required to support the decision-making process when taking on decisions for implementing transformational government (El-Haddadeh *et al.*, 2010). Furthermore, the organisational structure and the nature of government itself construct the decision-making process in the government organisation which differs considerably from other private business organisations.

The aforesaid issues explain the need for structural changes within the government organisation. Sections 1.2, 1.3, 1.4 and 1.5 in this chapter illustrate the leaders' role in

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<sup>2</sup>--The terms implementation and adoption are referred to in the context from the government perspective and its related agencies concerned in the eGovernment transformational process. The term adoption is used in its wider meaning as an element part of stakeholders within the tGovernment environment.

moving the government agenda forward by enabling that strategic change and transforming public services beyond eGovernment. This is to explain further the motivation of governments in adopting transformational government for strategically integrating services and the significant role that leadership plays in the transformational process. The aims and objectives of this research are defined, with an outline of the thesis presented and summarising the conclusions in Sections 1.6, 1.7 and 1.8 respectively.

## **1.2 Transformation of Public Services beyond eGovernment**

I was invited by Cabinet Office (UK) to attend a conference entitled ‘Transforming Public Services’ Ministerial eGovernment Conference (2005) co-hosted by the UK Presidency and the European Commission. The conference was held in Manchester, a city that has, needless to say, a prominent place in the history of computers. The conference set out to debate from a public policy perspective, how governments can take what eGovernment currently has to offer and develop it further so that it delivers priority social and economic policy goals. On the issue of transformation of public services, Watmore<sup>3</sup> stated that this conference is focussed on the ‘citizens-centred’ government. The emphasis was placed on joined-up and transforming services to deliver tangible benefits for citizens, businesses and wider community.

This conference was set up to allow government leaders to share common concerns and set out strategic policy that will create the right environment to enable government, businesses and citizens to benefit from transformation. Moreover, a long-term government sector concern is the need for efficient and effective integrated services (Beynon-Davies and Williams, 2003). Janssen and Cresswell (2005) report that service provision is likely to fail if the information systems within Government agencies that need to work together to provide a service are not integrated. Integration problems are founded in the highly fragmented systems within government agencies (Lam, 2005). According to Allen *et al.*, (2001) existing information systems are typically built using architectures that do not readily support enterprise-wide integration, thus requiring major efforts to take high level managerial decisions to develop new architectures and systems to implement eGovernment. This is another shortfall of system thinking.

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<sup>3</sup>-- The UK presidency of the EU conference for ‘Transforming Public Services’ that was held in Manchester (2005). This was attended by Head of eGovernment at Ministerial Level. Ian Watmore is Head of the UK Cabinet Office eGovernment Unit.

The literature also indicates several differences in the decision-making process within government agencies and other private organisations (Ward and Mitchell, 2004). The rationale is that government agencies are complex organisations and are managed by the consent and rules set by central government. They are influenced by other government authorities and ministries and their systems adoption involves distributed decision-making based on a division of control and powers. Additionally, government agencies tend to seek guidance from central government on how to translate their eGovernment vision into more explicit specifications for eGovernment service provisioning (Lam, 2005a). On the other hand, private organisations have straight and undivided power over decisions. This is supported by a flexible management style with inter-departmental teams working in central coordination (Peppard and Ward, 2004). This distinction illustrates that Government agencies have an institutionalised bureaucratic nature and are well committed to obsolete cultural values. However, there is still a main driver and motivation by governments to develop robust eGovernment infrastructures<sup>4</sup> that support their search for efficient public services in order to reduce the administrative burden, bureaucracy and operational costs as well as ameliorating the services they offer to businesses, citizens and social groups (Azad and Faraj, 2008; CabinetOffice, 2007; Kamal *et al.*, 2011; United Nations, 2008).

In fact an infrastructure for digital government requires an approach that far transcends individual organisations to encompass all the elements of government as an interconnected whole that it is operating in a complex social and economic environment. The stand taken in this thesis is that an infrastructure for digital government requires an extended view of enterprise as Dawes (2009) defines which goes far beyond a single organisation to encompass all the parts of a government as an interconnected whole operating in a complex social and economic environment. Where effective infrastructures are adaptive, designed to scale, grow, and change over time. They must include considerations of the people and processes involved with the technology.

The above illustrate that there is a need for government agencies to: (a) undergo structural and operational changes to accommodate changing citizen and business needs, (b) enhance the decision-making process, (c) adopt cost-effective integration solutions, (d) integrate their autonomous information systems, (e) support persistent business process transformation, and (f) develop a strategic visionary leadership style that leads transformation.

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<sup>4</sup> -- Illustrated Oxford Dictionary (1998) Definition of infrastructure: It is the basic structural foundation of a society or an enterprise.

A good example of the implementation of transformational government is that of the Dubai government which this research focuses on as the empirical context of study. The Dubai Government first introduced eGovernment in 2001. It moved its ambitious efforts towards tGovernment in 2007 through a number of high profile initiatives that were designed to move their services beyond the norm of eGovernment. This is to emulate a business-like approach in providing customer-focused strategy of developing government services whereby government leadership initiating radical change in transforming government organisations. The chief driver of the Dubai Government in adopting transformation is to seek future prosperity, maintaining economic strength and high standards of living. Spurred on by the effects of globalisation where the needs of citizens and businesses are growing, the Dubai Government is embracing innovation for economic success and social programs. Needless to say, developing nations, as the case of Dubai, are learning to create the right set of strategies to attract the innovative people and companies that can boost economic growth. This is obvious in the case of the Government of Dubai which is focusing its government activities on a major transformation of its services to attract investments and businesses.

### 1.3 Dubai Motivation for implementing tGovernment

There are a wide range of reasons of why governments around the world want to go digital. Each government has its own agenda for implementing eGovernment as they see the need to establish a digital economy. In a dialogue with the leader of Dubai, one of a fast moving economy in the gulf region, stated:

*“.....our aim is for Dubai to be recognized as a leading centre in the new economy involving close co-operation with leading edge companies specialised in the development and creative applications of technology. To accomplish our aim, we need to redefine and transform our understanding of the role of government. Our e-wisdom is an asset **and I shall personally lead this transformation.**”<sup>5</sup>*

He further added *“I want Dubai to develop a unique commercial economy in this digital age. Dubai was unique with its trading in bygone days, when our traders have achieved fame far and wide.”* Is this an evolution or revolution of current practices? A new way for government

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<sup>5</sup>-- e4all magazine, April 2004. This magazine is published monthly by Dubai Government to make people aware of all eGovernment services, projects and development. It is widely distributed in government agencies, shopping malls and Taxis, where I picked my first copy to start this PhD journey (See appendix A for a sample of different titles).

in doing business by offering a ‘customer’<sup>6</sup> oriented service. Despite the fact that the idea in itself is revolutionary; the implementation process is evolutionary and how fast each government will move depends on the policy behind adaptation of eGovernment.

Leaders of developed economies, with clear vision, are determined to put an end to bureaucracy through modernisation of public services and adding an “e” in every service; this is to compete on the world scene for a higher ranking in moving towards a digital economy. This includes emerging economy countries who are also trying to utilise eGovernment transformations in order to transform their society and attract businesses to invest in their countries by providing better facilities. However, introducing rapid organisational changes without taking into account system maturity considerations may result in unexpected failure and management problems. Furthermore, this can lead to a loss of users’ confidence and degradation of system services.

In addition, tGovernment strategy would be to enable government departments and agencies to interact seamlessly with the private sector sharing a common concern of security and cost reductions in transactions and quality and speed of delivery. This will take into consideration the benefit of the whole country and its future. Therefore, its strategy should be more long term in comparison to companies and the private sector. This is further reaffirmed in an Organization for Economic Cooperation and Development (2003) publication<sup>7</sup> where the initiatives of eGovernment should refocus on a number of issues such as (a) cross agencies collaboration to address complex shared data, (b) enhancing ‘customer’ focus, and (c) build strong relationships with private-sector partners. This is in order for the public administration to remain responsive to citizens’ and businesses’ needs. Otherwise, reaching the full potential of eGovernment towards maturity i.e. tGovernment would not be realised.

Accordingly, government leaders and officials are increasingly aware of the potential of eGovernment to improve the performance of government organisations and provide potential benefits to their citizens and business partners. However, adoption of eGovernment is not straightforward and cannot be done in a limited period of time, rather it requires an integrative framework approach to place government information and services online. This is one of the reasons why many government organisations are still in the infancy stage of eGovernment adoption. Another important reason for this delay is that eGovernment requires

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<sup>6</sup> -- This is a term used by some authors and government officials to indicate a treatment similar to business environment.

<sup>7</sup>-- Organization for Economic Cooperation and Development (OECD) publications ‘The e-government imperative’ July 2003.

significant changes in organisational infrastructure. The World Wide Web (WWW) has become the means for governments to deliver services to citizens and businesses for stakeholders to access and retrieve those services that relevant to their needs. Thus, the Web which is in steady development by the private sector has become the window of governments to the outside world (Yang, 2003). The private sector is clearly showing an interest in eGovernment as, as far back as a decade ago, there was a conference on the topic of “Boosting the Net Economy 2000”; this was sponsored by Bull PLC in order to further the debate by openly discussing the new challenges and implications facing world governments in adopting new technologies. Some of the key questions in the theme of eGovernment and business were on how governments can create the best national legislative atmosphere for eCommerce, when the economy is becoming global; and on the kinds of corporate climates and cultures that make for success in the eWorld, focusing on the ways to be encouraged.

The Dubai Government is realising the role of businesses in moving the eGovernment agenda forward, where departments are working to ensure up-to-date services to the public, and to guarantee a reliable service infrastructure which is on a par with developed countries. These efforts are in line with the vision of the current Ruler of Dubai, who emphasised that they must ease the lives of people and businesses interacting with the Government and contribute to establishing Dubai as a leading economic hub.

### *1.3.1 Dubai Governance System*

Dubai is not part of the Euro-Mediterranean region; however, its growth and innovation are singled out as praiseworthy in relation to other Arab Countries in the gulf region. It might be argued that Dubai is a small city-state, with a young community and a small administration, so that initiating change is not that difficult.

Dubai extends along the Arabian Gulf coast of the United Arab Emirates (UAE) for approximately 75 km, covering an area of only 3,885 square km and occupying only about 10 per cent of the total area of the UAE. The population is a mixture of mainly Arabs, Persians, Indians, Pakistanis, Southeast Asians, and Europeans. The official language is Arabic; however, many languages are spoken, especially English. The cosmopolitan atmosphere and tolerance has attracted many people to come to work and live. For example, in 1930, the population was about 20,000 people; today it is well over 1.5 million. Dubai, similar to all of the seven Emirates that constitute the UAE Federation, is ruled by the

‘Sheikh’ who has complete sovereign power. This is supported by a government body which constitute the government of Dubai.

Dubai economy is not depending solely on resources from oil. In fact, with an economy growing at high rate, Dubai depends on foreign and domestic investments and trade. The continued growth and organized expansion of Dubai could not have happened without the support of strong public administration and visionary leadership. With this vision, of making Dubai an international business hub and a place where people liked to invest and live, was communicated to all stakeholders. Strong partnerships with major foreign firms, opening employment opportunities for national graduates, and an open-ended but regulated business environment, enhanced Dubai’s prosperity. Dubai ruler also took the time and effort to communicate his vision to the civil servants and managers of public institutions. As the case organisations show, how government officials responded positively to these initiatives of change. Thus, the nature of culture and the style of governance of Dubai permit decisions to be taken more rapidly and with greater certainty that they will be carried out. This aspect of cultural dimensions is further explained in details later in Section 5.2. Therefore, leadership normally plays a prominent role and in this way implementing transformational change in government is feasible. Hence, there is a bigger attribute of leadership in this part of the world than that would be expected in European countries.

#### **1.4 Strategically Integrated Transformational Government Services**

Despite the rapidly growing development of eGovernment and the emerging interest in tGovernment, the concepts and theories of eGovernment are still considered a relatively new research area and to be in a premature stage. Researchers from different disciplines address this phenomenal theme from their respective speculations and conceptualise it in a scattered fashion (Heeks and Bailur, 2007; Shareef *et al.*, 2011). Hence, there is still a limited literature analysing tGovernment implementation and adoption process from organisational perspective, and further there is limited understanding of how to improve the success of the early eGovernment initiative (Hu *et al.*, 2003; Sanchez *et al.*, 2003).

Transformational Government has emerged to create a major interest amongst academics and practitioners who are all trying to capture the dynamics behind public reforms. To that effect various definitions (see Appendix A) have been put forward. According to authors Kamal *et al.*, (2011) their definition attempts to capture the various elements that are given due attention and focuses on service delivery. Furthermore, it is also acknowledged that the main

limitation in this area of research is the lack of consensus about what constitutes definitions of transformational government and the shortage of empirical studies. There is also a lack of understanding and knowledge of overall government business strategy (Lam, 2005; Janssen and Cresswell, 2005). In this respect Weerakkody (2011) extended the research area in the transformational domain. Similarly, Janssen (2010) examined the adoption of emerging integration technologies and proposed a conceptual model for the adoption of integration technologies based on comparative analysis. Therefore, these models may provide some understanding regarding tGovernment, but not all of their factors can be seen as influential for eGovernment progression towards transformation. Irani *et al.* (2007) are among the first who studied the domain of tGovernment adoption and proposed a model that explains the main factors that influence tGovernment adoption in a multinational perspective. However, there is no theoretical foundation to substantiate that model. When there is an attempt to study tGovernment adoption in a developing country, for instance, competitive pressure has proved to be an influential factor for organisations (Lee *et al.*, 2008). In this context, the overall applicability of all theory based tGovernment adoption models may not provide the same outcome. As a result, governments seek answers for the effect of tGovernment, as it may assist them in understanding the evolution process that is involved and the managerial as well as technological benefits, barriers and costs.

As will be discussed in Chapter 2, this research identifies that strategic leadership challenges in bringing out tGovernment in government organisations as an important research issue that has been inadequately studied in the research literature; as a result, there is a void of theoretical models for tGovernment implementation and adoption. Furthermore, because scholars have contended that higher levels of eGovernment implementation demand considerable restructuring of existing organisations, this raises interesting questions for further research. To what extent do these new structures in state government (state-level agencies, for example) represent other, deeper changes within organisations, including norms of collaboration and the informal interactions across agencies that are needed for the full development of information technology's potential (Fountain, 2001b). More research is needed to understand the specific role of institutional creation and change in tGovernment, in qualitative terms, and over a longer period of time (Tolbert *et al.*, 2008). The transformation stage is characterized by seamless service delivery and back office integration (Siau and Long, 2005). Due to increased difficulties overcoming the cultural leap and transforming governmental services, compared to overcoming the technological jump and automating existing processes, knowledge about how to successfully move to the transformation stage is of particular interest (Reinwald, 2010).



## 1.5 The Significant Role of Leadership in Transformational Government

In the last two decades, many countries around the world have focused widely on the use of ICT to transform their organisations and automate their business processes and functions (Grimsley and Meehan, 2007; Irani *et al.*, 2005). Governments focused on the use of technology to provide direct support to meet citizens' needs including housing, social services, and the management of a complex service infrastructure that supports communities and businesses (Johnson and King, 2005). However, the rapid eGovernment developments have resulted in non-integrated IT infrastructures (Lam, 2005; Beaumaster, 2002). The reason is that each government agency autonomously made its own operational decisions based on its individual needs (Janssen and Cresswell, 2005; Di Natale *et al.*, 2003; Aldrich *et al.*, 2002). Additionally, organisations have developed their applications without proper common architectural planning (Markus and Tanis, 1999). Moreover, each government department displays differences in the way: (a) their business processes are implemented to provide citizen services, and (b) makes its decisions that differs considerably from other private organisations (Johnson and King, 2005; Ward and Mitchell, 2004). Such theorised evidences illustrate that many government departments operate and function independently and do not share information and functionality with each other (Gortmaker and Janssen 2004).

Such concerns have resulted in several problems that have influenced the decision-making process in Government agencies. For example, Beynon-Davies and Williams (2003) report that within Government agencies there is not enough emphasis on the re-engineering of legacy business processes and applications. The reason is that legacy business processes and applications have been developed over several years to serve their core processing needs and government officials are reluctant to change their operational procedures (Lam, 2005). McIvor *et al.*, (2002) report that the inherent design of many legacy applications was as standalone, typically mainframe-based applications, rather than integrated operations. The reluctance of government officials to bring about change in their operational practices and availability of non-integrated legacy applications has resulted in poor citizen service provision and made the decision-making process more complex (Lam, 2005; McIvor *et al.*, 2002). Thus, integrating government services of legacy business processes and applications is required to support coordination and collaboration with Government agencies, this is to enhance the decision-making process and provide better services to citizens and businesses (Janssen and Cresswell, 2005; McIvor *et al.*, 2002).

While adopting new, innovative solutions, a major concern for public service management is the investment decision associated with the change in organisation and their infrastructure (Signore *et al.*, 2005; Beaumaster, 2002). The reason is that some agencies lack sufficient amounts of funds for their IT infrastructure (Ward and Mitchell, 2004). Wagner and Antonucci (2004) support that Government agencies' budgets are often reduced and sometimes allocated with appropriations. Lam (2005) and McIvor *et al.*, (2002) also report that government organisations face difficulties in obtaining the level of financial support requested, especially if grants are drawn from a funding pool that is meant to serve multiple initiatives. Therefore, government agencies are seeking optimized solutions for integrated solutions that are cost effective and as a result provide improved services to their citizens and businesses.

Another notable issue is with the electronic government (eGovernment) policies that are still evolving and are in a state of change (Lam, 2005). Furthermore, the history of eGovernment evolution is relatively very new. Basically, most of the reported countries are just at the early stages and beginning efforts of implementing eGovernment (Shareef *et al.*, 2011). In this context, the strategic leadership in central government plays a pivotal role in defining policies for citizen privacy and security, which can be interpreted by Government agencies in relation to their eGovernment projects. Signore *et al.*, (2005) argues that citizens' concerns on privacy and confidentiality of the personal data have been a critical obstacle in implementing eGovernment projects. Tillman (2003) also reports that concerns over citizen privacy continue to be a problem in eGovernment discipline, whereas Lam (2005) identified citizen privacy as a barrier to integrating eGovernment. Lam (2005) also supports that the lack of clarity in the privacy policies among Government agencies is a major problem. The reason is that questions regarding: (a) why data is being collected, (b) how it will be used, updated and secured, and (c) with whom it will be shared, require the establishment of clear policies with respect to citizen data privacy and security. In the absence of such clear, well formulated policies, decision-making to achieve seamless integrated eGovernment may become stagnated (Signore *et al.* 2005; Lam, 2005).

In dealing with such complexity surrounding transformational government, the government organisations require careful analysis and should not just put services (which used to be done manually) electronically on line. As the literature makes a distinguished difference between automation and transformation, it is the latter which the majority of governments are aiming to achieve in order to be a main player in this dynamic world and become a digital society. Businesses might have different needs; however collaboration with government agencies might provide mutual benefits. And if managed properly, the long term of sustained

development will ensure a healthy economy and strong governance. In addition, eGovernment strategy would enable government departments and agencies to interact with the private sector sharing a common concern of security and cost reductions in transactions and speed of delivery (Heeks, 2001; McClure, 2000). However, government adoption will take into considerations the benefit of the whole country and its future. Therefore, in contrast to the private sector, government leaders formulating comprehensive transformational strategy should be thinking more about the long term implications and rather than any short or medium term gain.

## **1.6 Research Aim and Objectives**

The rationale of this research is based on conclusions in the literature that tGovernment implementation in the public sector has not been given adequate attention. There are a number of voids which exist in the normative tGovernment literature regarding its concept, implementation strategy and reference model capturing the application domain (Kim *et al.*, 2007; Lee *et al.*, 2008). There is also lack of understanding and consensus about what constitutes definitions of transformational government and the shortage of empirical studies (Kamal *et al.*, 2011). The research reported in this thesis is based on the underlying principle that complex decision-making process dealing with a complex phenomenon and lack of universal system infrastructures in government organization, has resulted in a plethora of heterogeneous systems that provide information and services in a confined manner. Thus, there is a need for a better understanding of the system thinking in order to bridge the systems across agencies together to improve the delivery of services to citizens and businesses. As a result, the need for a different style of leadership will be significantly increased and improve the decision-making process. Literature reports that strong leadership in bringing about a change in such a complex phenomenon and this can be used to create an integrated infrastructure. In addition, the literature (see Chapter 2) suggests that organisational, cultural values and institutional reform will form the basis to improve their business processes and decision-making.

This research seeks to offer a new theoretical model and framework for better understanding and researching the issues surrounding transformational government, a framework that considers both existing research and its criticism. In this way, governments may benefit from a frame of reference to support their integrated development goals. This frame of reference will provide better assistance to government leaders to understand the effect of tGovernment implementation on their organisational performance and structure, before proceeding with

their investment strategy. The proposed frame of reference will be translated into a model that would assist the government authorities in supporting effective decision-making for tGovernment. As a result, the aim of this thesis is to:

*“Explore the strategic leadership challenges in the implementation process of ICT-enabled Transformational Government. In doing so, resulting in the development of a framework reference model that is supported by theoretical principles which is underlying the progressive stages of maturity models. This model will assist government leaders in their strategic decision-making process for the paradigm shift from eGovernment to tGovernment.”*

This research highlights the *need* for a model of relevant factors for tGovernment implementation. Despite the fact that a few factors (e.g. eGovernment benefits, barriers and costs) are, to some extent, well analysed in the normative literature, there is a *need* to understand, evaluate and explain them in the context of implementation and development of tGovernment. The framework of factors can be translated into a model that may assist the government officials in their decision-making process for tGovernment implementation. Additionally, to enhance the decision-making process for tGovernment adoption, this research attempts to: (a) identify different technology adoption lifecycle phases; (b) which factor(s) and emerging themes may influence tGovernment Implementation and the importance of those factors at the critical phase of transition from eGovernment to tGovernment is highlighted. This will provide guidelines for government decision makers while making the decision for tGovernment implementation.

The objectives of this PhD thesis are outlined as below,

- **Objective 1:** To understand the strategic leadership challenges in the transformation process and evaluate those factors that can support the overall decision-making process for tGovernment in the context of different government agencies.

In order to achieve this, there are sub-objectives:

- **Sub-Objective a:** To critically review the eGovernment and tGovernment literature and understand the transformational domain with a particular focus on leadership government agencies for development.
- **Sub-Objective b:** To identify those factors of leading change that influencing the transitions from eGovernment to tGovernment that affect implementation.

- **Sub-Objective c:** To develop and propose a model for tGovernment implementation based on a sound theoretical approach.
- **Sub-Objective d:** To evaluate the model, within practical environment and provide a novel contribution of eGovernance leadership to the domain of transformational government.

## 1.7 Thesis Outline

The structure of this PhD thesis follows the methodology described by Phillips and Pugh (1994) and consists of four elements namely: (a) background theory; (b) focal theory; (c) data theory and (d) novel contribution. Background theory focuses on discussing the research area (see Chapter 1), assessing the field of research and identifying the problem domain (see Chapter 2). The second element of the thesis (focal theory) deals with generating a conceptual model. This is explained and discussed in Chapter 3. Data theory addresses issues such as: (a) the most appropriate epistemological stance to adopt; (b) the development of a suitable research methodology and, (c) the conditions affecting the choice of research strategy. These issues are discussed in Chapter 4 of this thesis. In addition, data theory deals with the data collection process and analysis, which is reported in Chapter 5. The fourth element (novel contribution) is concerned with aligning the importance of the thesis with a revised model, to the development of the discipline being researched (see Chapters 6). In Chapter 7, this research has summarised the research presented in this thesis with a brief outline of contributions and discusses the potential areas for further research. This thesis is composed of seven chapters, each providing an understanding of various issues viewed to be critical for this research. The thesis outline is illustrated in Figure 1.1 and is explained in the following paragraphs.

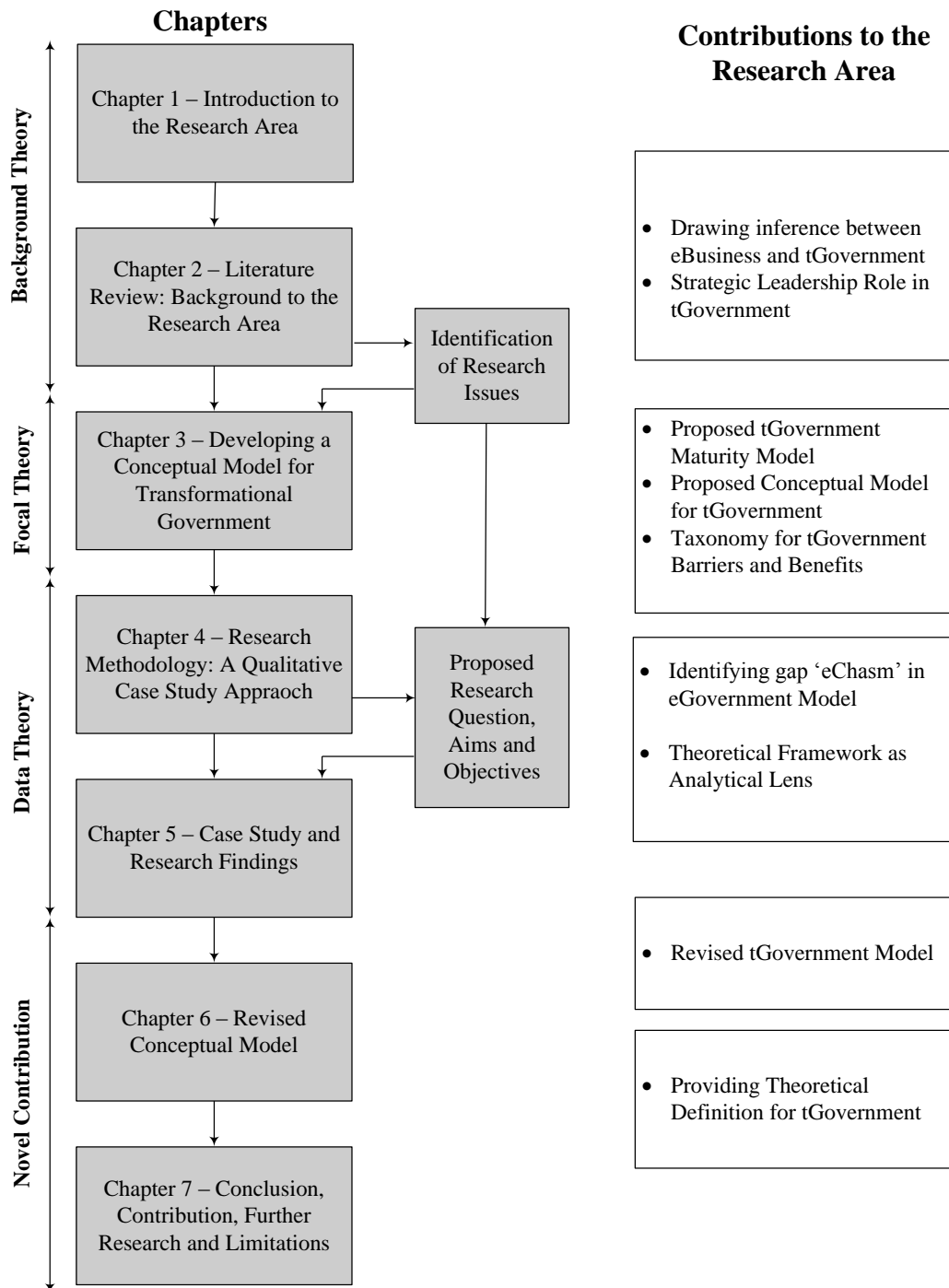


Figure 1.1: Thesis Outline

- **Chapter 1: Introduction to the Research Area**

Chapter 1 begins by providing an introduction to the main issues this research will address by focusing on tGovernment. The issues under research focus on the need for visionary leadership to lead the transformation process of government services in a more flexible and sustainable way and improve the decision making process in governments. Thereafter, the aim and objectives are stated with an outline of the thesis (Figure 1.1).

- **Chapter 2: Literature Review – an analysis of the research area**

Having provided a brief introduction to the research area and established the scope, the thesis begins to review the literature on tGovernment. Initially, this chapter critically reviews eGovernment adoption literature in general. Then establishes the scope on tGovernment domain by discussing on: (a) government authorities enabled by technology and Commonalities of eCommerce and eGovernment (Table 2.3), (b) current research conducted on tGovernment(Figure 2.4), (c) current research conducted on Theory of Leadership on change in the context of government, (d) the shift of Business to eBusiness and the shift from eGovernment to tGovernment, (e) the complex nature of stakeholders relationship and eServices, (f) absence of theoretical model for tGovernment to capture the global phenomenon of government transformation. Finally, highlighting the current research conducted on the strategic leadership in creating partnership amongst agencies in leading transformational change research issues for further investigation (Table 2.5).

- **Chapter 3: Developing a Conceptual Model**

Chapter 3 proposes a conceptual model for tGovernment implementation (Figure 3.3). The proposed model can be used as a decision-making tool and thus, support management when taking strategic decisions in initiating transformational change in government organisations. Additionally, the model can be used by practitioners and researchers to formulate a better understanding of evaluation maturities in government services. Finally, this chapter investigates and proposes a theoretical framework to be used as a guide that combined various theories that have influenced transformational government implementation (Figure 3.1).

- **Chapter 4: Research Methodology – A Qualitative Case Study Approach**

A research methodology is followed to test the proposed conceptual model in the practical setting. The reasons for the selection of a specific research methodology is declared in Chapter 4. The inherent problems within the various research philosophies are discussed and the suitability of the research methods provided.

- **Chapter 5: Case Study and Research Findings**

A description of the case studies conducted in three government agencies in Dubai, the United Arab Emirates (UAE) is provided. Chapter 5 provides a background to these government agencies and describes and analyses the main issues including: (a) existing infrastructure, (b) motivations to eGovernment implementation and consequently tGovernment, (c) tGovernment implementation process (d) and tGovernment implementation themes.

- **Chapter 6: Revised Transformational Government Model**

This chapter briefly outlines the current research, illustrates the lessons learnt from the case organisations and (a) revises the existing factors influencing the decision making process for tGovernment implementation in the case organisations, (b) describes those themes extracted from the empirical findings, (c) revises existing and describes the new model that was supported by the theoretical framework. This offers senior leadership decision-makers and researchers a revised model for tGovernment.

- **Chapter 7: Conclusions, Contribution, Further Research and Limitations**

Chapter 7 summarises the research undertaken and presented in this thesis. The statement of the contributions and research novelty is presented. The major conclusions are presented, as are the possible limitations of the research and the potential areas of further research.

## **1.8 Conclusions**

It can be said that managing tGovernment is a major challenge under any set of circumstances. Creating and managing an integrated tGovernment infrastructure with seamless interoperability requires foresight, comprehensive emerging technology knowledge, adequate time scale, long term financial commitments and qualified staff resources. Although these requirements may seem difficult to satisfy, the value of a well planned, flexible and reliable infrastructure is paramount at the early stages of eGovernment which this research identified as domain I. Without it, crossing the eChasm to the final stage i.e. domain II of tGovernment, system failures will become increasingly common and damage the chances of the very initiatives that the governments want to achieve. It may be less obvious, but equally unhelpful, is an environment where the applications of appropriate infrastructures have sufficient flexibility to keep up with the desired pace of innovation and change.



For this reason, senior executives and decision makers across government authorities need to increasingly prioritise, strategically plan their infrastructure and deployment in order to fully realise their initiatives. However, government agencies need to be able to build an organisational structure that meets the foremost important issue of information systems integration, flexibility, scalability, interoperability and reliability requirements for the future, without being locked in to a single technology base that limits the incorporation of new, more cost effective technologies.

There is an increasing demand to public reform in meeting stakeholders' expectations and to allow cooperation in all government authorities. This provides a unified view of government services to all the stakeholders. The transformation of government organisation to meet ever increasing citizens and business need is an emerging research area in government agencies; as a result, there is an absence of theoretical and conceptual models that capture the implementation and adoption between the private and government sector organisations. Furthermore, for moving from eGovernment to tGovernment taking into considerations government agencies structure, culture and interoperability, the research undertaken and described in this thesis takes this theoretical gap into consideration and attempts to develop a tGovernment implementation model that may assist leaders in government authorities in their decision-making process.



## Chapter 2: Literature Review

### Summary

This chapter offers an in-depth detailed review critically analysing the normative literature on electronic government (eGovernment), organisational change and transformational government (tGovernment) implementation in the government organisations. It constructs a background of the tGovernment context which can be used to support the accomplishment of this empirical research, leading as a result, to build a conceptual model for tGovernment. Considering the complexity issues surrounding tGovernment initiatives and its wide-scale strategy that may affects many disciplines, this chapter identifies different critical perspectives. It further describes tGovernment by providing rich literature based definitions that may assist to appreciate the dilemma that exists amongst researchers and practitioners who venture to explain this recent complex phenomenon. The chapter reviews the underlying principles that motivate senior leaders in the government organisations to implement tGovernment. By realising that tGovernment is an emerging research concept; there is a recognised limitation in the literature addressing the implementation process of tGovernment in the government organisations.. Finally, this chapter discusses the need of what can be considered appropriate theories that play an important role in the formulation of the proposed conceptual model.

## 2.1 Introduction

Over the last two decades more attention has been paid to electronic government (eGovernment) implementation and adoption in the drive for government agencies to reach seamless integration with citizens, businesses i.e. transformational stage. The eGovernment is a new phenomenon, and thus an exploratory approach is needed. Although the problems of transformational cultures have been around with the eBusiness phenomenon, Government works under different constraints and looks at value beyond its instrumental aspects of revenue streams. In a conference on ‘Transforming Public Services’ under the UK presidency of the European Union, Watmore<sup>8</sup> in the underlying theme of ‘Business and Citizens: Service use’ where transformation and innovation in external facing services putting citizens and businesses at the centre, driving use and participation says, “tGovernment is an end in itself and not a means to an end” as is the case with eBusiness. The body of knowledge in the literature suggests that the findings derived from the study of eCommerce and eBusiness implementation and adoption in private sectors may provide some fundamental key understanding of this complex phenomenon of transformational government. However, they cannot be generalised or applied face value to government organisations organisations without proper evaluation and validation. Among other factors this may be attributed to government organisations such as: (a) management bureaucracy, (b) large complex structure, (c) structure characteristics, (d) operational and functional activities and (e) institutional decision-making process that significantly differ from private sectors.

In pursuit of ‘re-inventing government’ (Osborne and Gaebler, 1992), policy-makers have emphasised more effective leadership to improve the performance of government organisations. In developed countries governmental emphasis on leadership is gaining momentum (Kakabadse, 2008). There is lack of research on leadership affect on tGovernment since many ideas and research about leadership have originated from studies of organisations in the private sector. Given this private sector focus, it is not surprising, therefore, that a critical examination of government leadership policies has been slow to follow. Several have called for an assessment of the influence of government organisations context on the efficacy of different leadership approaches (Fairholm, 2004; Javidan and Waldman, 2003; Van Wart, 2003). Empirical evidence of earlier studies suggests that leadership has a significant effect on

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<sup>8</sup> -- Ian Watmore, Head of the UK Cabinet Office eGovernment Unit (2005).

organisational performance (Agle *et al.*, 2006; Howell and Avolio, 1993; Ogbonna and Harris, 1999; Waldman and Yammarino, 1999).

## 2.2 The Impact of Technology on Government Authorities

It is considered that information technology play a fundamental role and be an essential part of the modernisation process that is shaping public organisations today (Beynon-Davies, 2005). For example, the government organisations in the United Kingdom recognised that ICT has the potential to help to provide and deliver its services more quickly and at a lower cost (Beynon-Davies and Williams, 2003; Brown, 2002; Brown, 2001). Realising that governments around the world have used information technology capabilities to support citizen services (Beaumaster, 2002; Bretschneider, 2003; Brown, 2001; Kim and Galliers, 2004). Initially historically, in the late 1950s and 1960s, computer applications were gradually adopted to enhance the infrastructure and organisational operations, mainly to undertake internal administrative functions but also being used where there was a need for complex calculations. Nowadays, the government transformation agenda is getting so large and complex that it has shaped outsourcing policies as this may required specialists who can be entrusted to developing complex integrated solutions. However, those suppliers gave very little consideration to the needs of citizens and business when developing and implementing solutions (Brown, 2001).

Although government agencies have gradually and slowly adopted emerged technology applications to improve their internal operation and functions (Irani *et al.*, 2006b) they can be characterised as laggards in adopting innovative technological solutions (Themistocleous *et al.*, 2004). For example, early in 1997, the UK government announced that, by 2002, 25% of citizens' dealings with local governments should be able to be carried out electronically. This was to overcome the organisational and technology infrastructure issues, (b) enhance the business processes, and (c) improve service delivery to citizens. Nonetheless, these targets were later revised in the Modernising Agenda White Paper (CabinetOffice, 1999) that initially set a target of 100% electronic service delivery by 2008. In March 2000, the government announced that this target was to be brought forward. The UK government then set new targets that, by 2005, all government agencies services that can be delivered electronically have to be delivered electronically (AuditCommission, 2002)<sup>9</sup>. From the commencement of the modernisation

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<sup>9</sup>-- Audit Commission is an independent body responsible for ensuring that public money is used economically, efficiently and effectively.

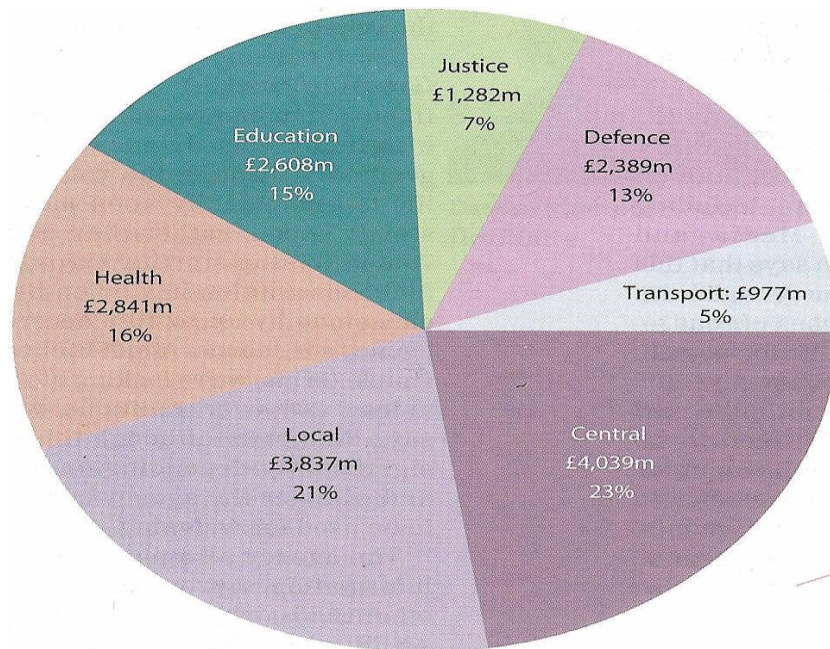
agenda in 1999, the Audit Commission monitored the progress of public services made towards the set target. Due to this issue an assortment of UK government initiatives are launched, which is collectively known as Government agencies modernisation agenda (Beynon-Davies and Williams, 2003).

Literature also indicates that along with public modernisation agenda there are growing demands for a more accountable, efficient and effective public services. This is characterised by enhanced multi-levels of performance and transparency. Government agencies in the UK have mobilised a far-reaching program of change and innovation in organisational reforms (Benington, 2000; Weerakkody and Dhillon, 2009). The UK Government, for example, is attempting to fundamentally change the way in which ICT is used as enabler to achieve a joined-up services where all government agencies are providing convenient ways for citizens and businesses to interact and receive services from the government (HMSO, 1999)<sup>10</sup>.

Information systems were adopted by governments primarily to automate the business processes and functions, improve productivity and effectiveness in providing efficient service-delivery, and possibly transform the structures and performance within government authorities (Beynon-Davies and Williams, 2003; Gortmaker and Janssen, 2004). It is reported that these systems are perceived to reap efficiencies by decreasing the cost of processing routine transactions and lowering the data error rates (Fountain, 2001b) although it is argued that realising the benefits of systems applications requires government to understand and overcome the inherit old system challenges to their efforts (Gil-Garcia and Pardo, 2005). In addition, recent research on ICT adoption indicates that expenditure by sector in the UK, for example, is set to stabilise over the next five years (Kable, 2010).

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<sup>10</sup> -- (HMSO) Her Majesty's Stationery Office operates from the Office of Public Sector Information to fulfil its core activities i.e. responsibility for the publication of legislation and management of Crown copyright.



**Figure 2.1: ICT expenditure in the United Kingdom by sector (Source: Kable, 2010)**

The recent Kable report (2010) predicts three phases of change for individual organisations, started by a widely anticipated squeeze on public spending. The second will focus on looking for sustainable efficiency improvements. This will involve an emphasis on rationalising infrastructure and ICT being used to reduce other operational costs, going beyond the earlier focus on the back office to take in front line services. The third phase will revolve around the need for radical reforms in delivering services that reduce costs without undermining their quality. The most ambitious programmes will be linked to wider organisational change, but there will also be scope for more specialised solutions that accomplish the needs of smaller organisations.

A timeline representing IT adoption in Government agencies is presented in Table 2.1.

| Timeline      | Description and main focus in government agencies   | References  |
|---------------|---|---|
| Pre 2000's    | <ul style="list-style-type: none"> <li>Focus on IT applications adoption to improve infrastructures and internal processes.</li> </ul>  | Brown, (2001)   |
|               | <ul style="list-style-type: none"> <li>Focus on new IT applications adoption in different ways such as in-house, outsource to external providers and joint approaches.</li> </ul>   | Khalifa <i>et al.</i> , (2001); Brown, (2001); Bretschneider, (1990)  |
| In the 2000's | <ul style="list-style-type: none"> <li>Reliance to outsource IT development projects to external providers confirmed due to political decisions.</li> </ul>   | Hudson, (2001); Brown, (2001).  |
|               | <ul style="list-style-type: none"> <li>Focus to enhance IT use to improve government business processes and service delivery.</li> <li>Modernisation agenda announced i.e. targets set to provide services electronically.</li> <li>Modernisation government agenda revised – targets revised to provide services electronically.</li> </ul>                              | Cabinet Office, (1999); Beynon-Davis and Williams, (2003); Audit Commission, (2002)   |
| Post 2000's   | <ul style="list-style-type: none"> <li>tGovernment strategic framework.</li> <li>Integrated electronic service delivery target set again.</li> <li>Focus on IT applications (EAI, CRM) to improve legacy business processes, service delivery with up -to-date information, improving IT infrastructure.</li> <li>Joint-up electronic service delivery target.</li> </ul> | Cabinet Office, (2005); Audit Commission, (2002, 2005); Chen and Gant, (2001); Beynon-Davis and Williams, (2003); Janssen, (2008) |
|               | <ul style="list-style-type: none"> <li>Improvements seen but several IT infrastructure and organisational issues still persist within the different Government agencies.</li> <li>User satisfaction with Local Government agencies remains high but is declining too.</li> </ul>  | Heeks, (2003); Willcocks, (1994); Lam, (2005); Weerakkody <i>et al.</i> , (2009)  |

**Table 2.1: A Timeline Representing IT Implementation In Government Organisations**

While the final form of these programmes is still difficult to foresee, they are likely to involve a greater emphasis than previously on a number of factors. These include, as stated by the report, generating income to complement government funding; internal marketing to drive efficiency and government reform; an ever increased contribution from the private and third sectors; a

greater demand on management to control expenditure; and a major shift towards more services delivered to people in the community or their homes, rather than in institutions.

The literature also indicates that governments have adopted IT applications to integrate and improve their operations and functions, where there are concerns on: (a) outsourcing systems development, (b) provision of quality citizen centred services, (c) automation of processes, and (d) across agencies systems integration and collaboration which still pose the biggest challenge of all. In order to comply with transformational government agenda and meet the requirements of citizens as well as business and harness the full potential of ICT to transform their business service operations, governments have to: (a) restructure their information systems, (b) undergo structural and operational changes to accommodate changing stakeholders need, (c) improve decision-making process, (d) maintain service quality of information across all available channels of the delivery systems organisations and (e) follow an efficient methodical management process. The application of ICT is increasingly seen as an essential enabler of reforms in which public administrations work; with little attention being given to change of management style. It is often seen as an aid to generate operating efficiencies and improve performance (OECD, 2003b)<sup>11</sup>. The issues as discussed earlier mainly accentuate the complexity surrounding transformational government. This further illustrates other additional limitations in the early encountered definitions and models associated with eGovernment leading to transformation.

### **2.3 Innovation of Technology Adaptation and Change in eGovernment**

There are a variety of dynamic capabilities for adapting to changing circumstances have been identified in various domains (Feeny and Willcocks, 1998), innovation (Ebbers and van Dijk, 2007), and eBusiness transformation (Daniel and Wilson, 2003). The innovations in eGovernment were classified and categorized in many ways, and according to Poon and Huang (2002), eGovernment can be classified into five segments according to their application domains, which are: eDemocracy, eServices, eCommerce, eManagement, and eDecision-making. Burn and Robins (2003) have their managerial perspective of eGovernment, where they stated that eGovernment is not just about electronic service delivery, it should provide the opportunities to evaluate and transform the management processes of government organisation,

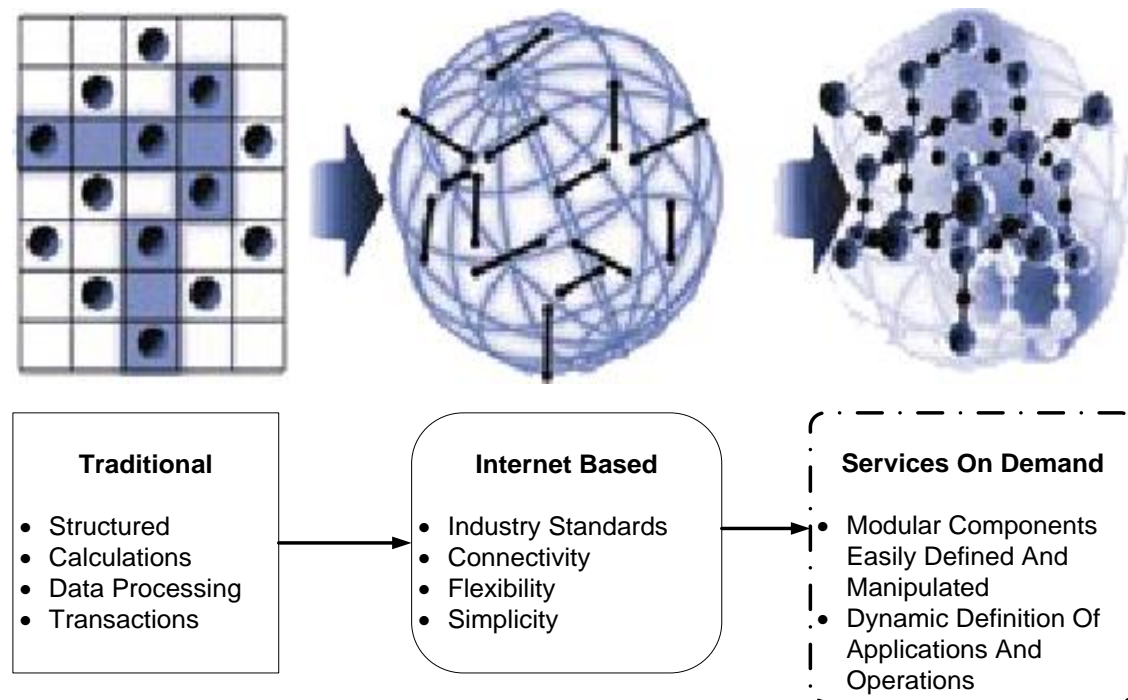
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<sup>11</sup> -- (OECD) is the Organisation for Economic Co-operation and Development which defines government as “the use of information and communication technologies (ICTs), and particularly the Internet, as a tool to achieve better government.”



rethink how government provide services in order to rebuild and link these services in a way that is tailored to the need of citizens, and finally be able to incorporate governance itself and change the way political and social power are organised and used. For example, in 2003 prior to the Ministerial Conference in Manchester (2005) Mary Hanafin, Irish Minister of State highlights the importance of an innovative and modern public service in the development of competitive knowledge-based economies and also establishing the means by which the benefits of eGovernment can be measured.

In the implementation of eGovernment applications, governments are seeking efficiency, effectiveness, and data quality improvement gains (Danziger and Andersen, 2002). After more than thirty years of use of IT in the government organisations, these benefits are, however, self-evident and government should move beyond these benefits focusing more on streamlining core processes and reaching customers in a more efficient manner (Andersen and Henriksen, 2006b). Regardless of organisation design, however, technology visionaries are the inherent drivers of corporate strategy in enterprises that truly experience the pinnacle of success within the IT Value Hierarchy. This is illustrated in figure below in moving from the traditional way of doing business to an internet based channels where services on demand requires a far more reaching change.



**Figure 2.2: The Advancement Of Technology And The Emerging Of On Demand Computing (Source: (IBM, 2005))**

Another challenge is that those channels involve the re-orientation of government to make it more customer-focused. Where leaders are aware of the importance of restructuring organisations and processes in order to maximise value to the user, they must overcome considerable internal resistance when implementing change. While governments have different approaches, most OECD countries agree on the importance of incentives to ensure co-ordination and to promote a sense of ownership and accountability for decentralised initiatives (OECD, 2003a). The following table 2.2 shows the key elements in migrating from eGovernment to tGovernment with a brief description. There are critical variables differentiating eGovernment from tGovernment and the consequent actions that are required for an effective migration process (Irani *et al.*, 2007b).

| Criteria             | eGovernment (eGov)                  | tGovernment (tGov)  | Migration from eGov to tGov        |
|----------------------|-------------------------------------|---|------------------------------------|
| Focus                | Putting government services on line | Making the government transformational through IT         | <i>Transformational leadership</i> |
| Citizen involvement  | Access & Accessibility              | Build Social capital                                      | Citizen focus                      |
| Business involvement | On-line transacting                 | Supply chain integration                                  | Transformational business          |
| Evaluation           | Stage model growth                  | Benefit realisation                                       |                                    |
| Service delivery     | Push-model                          | Pull-model  |                                    |
| Resource management  | Resource allocation                 | Professionalism   |                                    |
| Integration          | Shared service platform             | Shared service culture                                    |                                    |
| Business model       | Technological capability            | Strategic governance                                      |                                    |
| IT role              | Enabling online delivery            | Enabling the transformation of the business of government | Transformational IT                |

**Table 2.2: Differentiate Between eGovernment And tGovernment And Migration Strategy (Source: Irani *et al.*, 2007)**

There is evidence that what is needed is radical change rather than incremental improvement (Weerakkody and Currie, 2003; Weerakkody and Hinton, 1999). Both organisations described in these studies achieved progress by radically changing the organisational structure (i.e. concentrating back-office services and creating a customer-centric organisational structure) and by redesigning their business processes. Major factors in achieving the change are central support, leadership and resistance to change and culture, where the concept of change management is an important part of Business Process Reengineering (BPR). BPR should be viewed as a strategic component of cross-functional change, where change that is driven by the vision of those leaders who are implementing transformational change. It is emphasised that management should facilitate the fundamental change by committing, training, facilitating and empowering staff.

## 2.4 The Significance of Transformational Government: a Global Perspective

The recent United Nations eGovernment Survey (United Nations, 2008) results indicate that governments are moving and progressing forward in eGovernment development around the world. However, given the high demands placed by eGovernment on a multitude of foundational pillars which include prerequisites of infrastructure, appropriate policies, capacity development, Information Communications and Technology (ICT) applications and relevant content that need to be in place to fully implement eGovernment services, the progress is very slow. It was found that only a few governments have made the necessary investment to move from eGovernment applications per se to a more integrated connected government transformed stage (Devados *et al.*, 2002; Irani *et al.*, 2007b; Weerakkody and Dhillon, 2008). Transformational government (tGovernment) is defined as radically changing the way government conducts its business internally and externally (Montagna, 2005; Murphy, 2005a). In essence therefore, tGovernment is about the transformation of internal and external processes of government using information and communication technologies to provide efficient and user focused services to citizens, businesses and others (Basu, 2004; Evans 2003; Gandhi and Cross, 2001; Gupta and Jana, 2003; Stoltzfus, 2005).

In an opening address to the Organisation for Economic Co-operation and Development (OECD-Forum, 2006) Secretary-General Donald Johnston States:

*“Globalisation, propelled by trade and investment liberalisation, and rapid technological change, is believed to have delivered prosperity and reduced poverty for millions of people in recent decades. We have learned, however, that reaping the full benefits of globalisation requires many elements including good public and corporate governance; policies that promote structural adjustment and social cohesion; greater access to education; efficient financial markets; and sound policies for research, innovation and development. Balancing all these elements while promoting globalisation and delivering prosperity require an open inclusive dialogue involving businesses, government agencies, and working groups”.*

In addition, eGovernment strategy change to enable government departments and agencies to interact with private sectors sharing a common concern of security and cost reductions in transactions and speed of delivery (Heeks, 2001; McClure, 2000). Therefore, the complexity surrounding transformational government requires at times drastic measures in order to achieve

its desired output. In the United States, for example, eGovernment was promoted in the mid-1990s at the federal level by Vice President Al Gore as part of the National Performance Review (Fountain, 2001b). In another place, the idea has been associated with similar New Public Management reforms, although the Prime Minister Tony Blair government in the United Kingdom has portrayed Digital Government as a means of increasing political and citizens participation (Chadwick and May, 2003). Realising that vision of digital society the UK Prime Minister, Tony Blair, July 2005 went on, saying:

*“...This is a time to push forward, faster and on all fronts: open up the system, break down its monoliths, and put the parent and pupil and patient and law-abiding citizen at the centre of it. We have made great progress. Let us learn the lessons of it not so as to rest on present achievements but to take them to a new and higher level in the future...”*

All this is in response to globalisation and the changing business of government environment; where governments are turning to business process reengineering (BPR) which is involving significant investments in information technology. The concept of BPR advocates the redesign of business processes enabled by technology to bring about a positive change in value realisation and performance of government services. While reengineering can be done with proper planning, resources and commitment, more research is needed to focus on exploring ways to improve interoperability and integration between different government agencies in the perspective of eGovernment. In this context, the emerging concepts of Service Oriented Architectures (SOA) and Web Services are areas that need further exploration to assist in this transformation domain (Weerakkody *et al.*, 2006).

The transfer of a service to online delivery reduces the demand on these traditional channels and holds out the potential for savings through reduction in the resources required to support them. Therefore, the complete closure of traditional access channel may well be contemplated. The cost benefit assessments such as these depend upon significant assumptions about the number of citizens who will move to an online service delivery channel. For example the UK Inland Revenue service online taxation project estimates a 50% take up with staff savings of 1,300 posts (NAO, 2002). In several cases complete transfer of the service to electronic interaction may not be possible under existing statutory and regulatory frameworks. Notwithstanding European Directives on the validity of electronic signatures (EU, 1999) there are still situations where the agency needs to have physical signatures or to be able to inspect

physical documents (IPS, 2008). As a case in point, Australian's federal government adopted a comprehensive online strategy for the adoption of eGovernment (DCITA, 2000). This strategy specifically excluded closure of traditional access channels (AustralianGovernment, 2005). However, based on the experience of other tax collectors the Australian Taxation Office did expect to make direct cost savings in its planning for there 'ETax' online system. The drivers for eGovernment broadly include improving internal cost and management efficiencies, encouraging citizen participation, promoting economic development and improving overall governance (Gandhi and Cross, 2001; Lee *et al.*, 2005b; Schware and Deane, 2003). In practice the take-up of this service fell behind the projected targets (Chamberlain and Castleman, 2005).

This prompts the debate about the motivation behind citizen take-up of services and the need to create incentives for citizens to switch to online services. Studies in this area identify a variety of barriers perceived by citizens. These include lack of online experience, trust and visual appeal as well as poor information quality and the degree of stress experienced by the elderly (Carter and Belanger, 2003; Gilbert *et al.*, 2004; Horst *et al.*, 2007). However, many of these barriers lead to citizens not even trying to use the service. The extended technology acceptance model (Venkatesh and Davis, 2000; Venkatesh *et al.*, 2003) highlights the importance of social influences and hence the need encourage potential users to try out online services by creating incentives. There are various incentives that have been tried, for example direct cash incentives, focussed advertising of online channels, social networking (Phippen *et al.*, 2006) and co-development of services. However, many of these raise issues of sustainability, appropriate use of public funds and equality of opportunity where citizens cannot gain the benefit through no fault of their own. Most of the evidence remains anecdotal and motivating citizens to adopt eGovernment services remains problematic (Irani and Elliman, 2007).

Engaging citizens and businesses in the transformation phase encompasses redefining the core delivery of government services. This is accomplished by providing a single point of contact to citizens' that makes the government completely transparent to citizens and businesses (Affisco and Soliman, 2006). The transformation stage of eGovernment will only be achieved when the different participating agencies collaborate, streamline their business processes and integrate systems that have been historically fragmented (Hu *et al.*, 2006; Weerakkody *et al.*, 2007). In the UK, for instance, the Transformational Government Strategy was introduced in 2005 and sets out a six-year improvement task for public services (CabinetOffice, 2006). The UK target for reaching the transformational stage of eGovernment is 2011 (*ibid*).

## 2.5 Enactment of Planned Government Organisational Change

A comprehensive literature review showed that the factors influencing eGovernment implementation can broadly be classified under the themes of organisational, technological, political, and social contexts and associated challenges that are surrounding eGovernment systems. There is growing evidence that change agents' leadership characteristics and behaviour influence the success or failure of organisational change initiatives (Berson, 2004; Bommer *et al.*, 2005; Eisenbach *et al.*, 1999; Higgs and Rowland, 2005; Struckman and Yammarino, 2003; Waldman *et al.*, 2004). Recent study also shows that leaders emphasise the mobilising activities that are associated with the implementation process for planned organisational change. When dealing with the role of leadership in change implementation, bringing about change should be considered as a complex multi-dimensional task composed of different activities (Battilana *et al.*, 2010).

Leading authors on change (Boal and Hooijberg, 2001; Gillen, 2000; Weerakkody *et al.*, 2006) tend to argue that transformational leaders articulate a strategic vision that helps guide followers to focus on and learn what is essential to implementing the vision and mission at the highest level, as well as at subsequent levels within the organisation. These leaders encourage questioning assumptions, methods, and the goals to discover better ways to understand and translate them into specific actions and deliverables. By creating an open learning environment, they help foster a climate that promotes a deeper understanding of the goals, mission, and vision, which is likely to foster greater alignment, identification, and strategic focus throughout an organisation. It has also been argued that transformational leaders are more capable of sensing their environment and then forming and disseminating strategic goals that capture the attention and interest of their followers. Followers of transformational leaders have been shown to exhibit higher levels of commitment to their organisational mission, a willingness to work harder, greater levels of trust in their leader, and higher levels of cohesion (Avolio, 1999).

Transformational leadership style was notably related to greater levels of inquisition concerning technical, performance, referent (pertaining to follower role demands), as well as social type of information. Such leaders are more effective in articulating strategic visions and missions, while promoting a learning environment. Hence they would be more effective disseminators of strategic goals (Berson, 2004). This is highlighted in transformational theories of leadership (Bass, 1985); and visionary theories of leadership (Bennis and Nanus, 1985; Kouzes and Posner, 1987). Strategic leadership theory assumes that organisations are basically reflections

of their leaders (Finkelstein and Hambrick, 1996; Hambrick and Mason, 1984). The values and beliefs of the leader set the agenda how issues are interpreted and acted upon. And consequently, the choices that leaders make would then affect organisational performance.

Boal (2000) proposed new theories that focus on charismatic, transformational, and visionary leadership. It is believed that transformational and visionary theories suggest that changes in cognitive and causal maps, values, and strategies themselves ought to be the focus of analysis (Gioia and Thomas, 1996). It is in the vision of the leader and the articulation for change that the past, present, and future are coming together. Thus, it is the vision of the leader that underlay the know-what, know-how, and know-why of change. Nutt and Backoff (1997) suggest that visions should have innovative features that are unique, vibrant, and inspirational, and that offer a new order. Visions should be future oriented enough to reveal opportunities with potentially important consequences.

A public organisation mission for transformation requires style of leadership that fit for long term strategy. Interestingly, the role of the context in which visions are created seems to be missing from much of the eGovernment literature. Many of the new theories of leadership appear to be context free. That is, they do not consider how environmental or organisational context influence the transformational process. Early qualitative research on leadership has been especially at the forefront of investigating new forms of leadership, such as eLeadership (Brown, 2002). Several of the studies are concerned with how leaders and their styles of leadership promote change and how leadership styles themselves change in response to particular changing circumstances. There is a recurring theme in those research of the need for leaders who are leading a change process to: secure commitment to the change process, address multiple constituencies (external and internal), convey a sense of the need for change, and inspire a vision of how change should be implemented and/or what the future state of the organisation will look like. The emergence of new technologies further added novel challenges that future government organisations leaders will be facing in government development. However, there are lessons to be learnt from recent development of eBusiness.



## 2.6 The Shift from eGovernment to tGovernment

The domain of tGovernment encapsulates a wider perspective of change than eGovernment and focuses on achieving changes in comparison with the current structure. In the view of tGovernment stage, the early stages of eGovernment utilized the current structures and way of working and were aimed at making information and services online. Lee *et al.* (2005a) and Norris and Moon (2006) found that local eGovernment efforts remain primarily informational (i.e. offering basic online services) and seldom are they achieving changes like joined up service delivery or the potential positive impacts claimed by its most dedicated advocates. Given this context, authors such as Kraemer and King (2005) argue that eGovernment is not transformational, but is incremental (Carr and Johansson, 1995; Davenport, 1993; Harrington, 1991). However, an increasing number of governments are now starting to get to grips with the much broader and more complex set of cultural and organisational changes which are needed if ICT is to deliver significant benefits in the government organisations. Countries such as the UK, Canada and Australia have all recently published strategies which shift decisively away from 'eGovernment' towards a much more radical focus on transforming the whole relationship between the government organisations and users of public services. This process is termed transformational government (Borras, 2004).

In responding effectively to these established challenges leaders in the public sector need to be capable of delivering radical change which is transformational, not incremental. This is adding a new dimension which is rather focussing on the process of transformation: how a government can build a new way of working that enables it swiftly and efficiently adapt to changing citizen and business needs and emerging global market. Given this context, several transformational government definitions have emerged to reflect this. Acknowledging, that not all governments are the same, this is acknowledging that the historical, cultural, political, economic, social and demographic context within which each government operates is different. However, Kamal *et al.* (2011) propose that the creation of citizen-centric services requires considerable changes at all levels of government which might need radical changes, rather than incremental improvement.

Therefore, it is arguable that many government agencies are focusing on incremental improvements that are wrongly being branded as transformational. Moreover, some argue that more than 70% of eGovernment initiatives have failed to meet the initial transformation

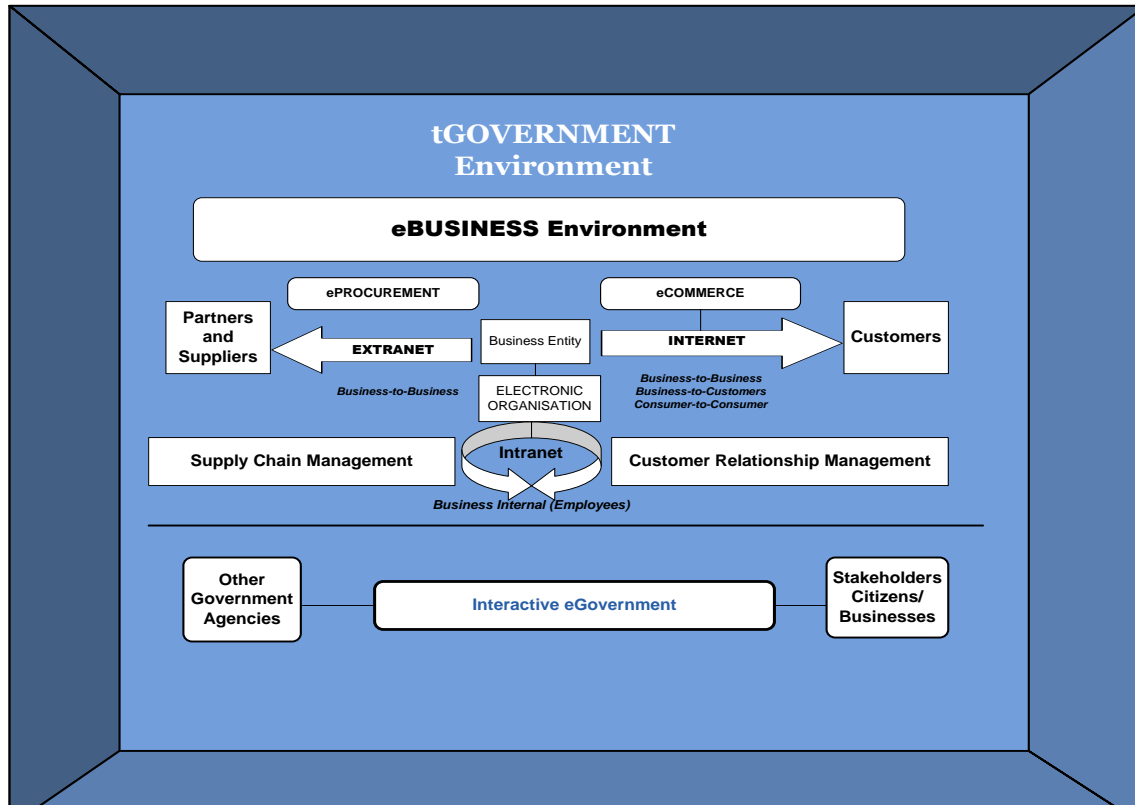
objectives in the early stages of implementation (Beynon-Davies and Martin, 2004; Di Maio, 2006; Gandhi and Cross, 2001), adding further that most of these failures can be attributed to the inability of governments to change business processes in response to the eGovernment model. The transition of eGovernment evolution is neither straightforward nor easy. There is a need for a considerable strategic planning if a fully fledged eGovernment is to be achieved (Davison *et al.*, 2005; Ferlie *et al.*, 2003; Joia, 2004). These early failures have resulted in an even more pressing need to integrate the front-end and back-end systems and processes (Jas and Skelcher, 2005; Kim *et al.*, 2007; West, 2004a).

### *2.6.1 Commonalities of eCommerce and eGovernment*

The domain of eCommerce has been portrayed as private sector siblings and antecedents of eGovernment. At face value, many transactional and informational phenomena observed in private sector eCommerce arena seem to be mirrored in eGovernment, and vice versa (Scholl, 2003b). However, a deeper understanding by government leadership of the complex interconnection of technological, organisational, social factors and processes in both eBusiness and eGovernment will lead to practice relevant cross-fertilisation and reduction of unnecessary duplication of efforts. eGovernment is often referred to as “the eBusiness of the state” (Schubert and Häusler, 2001).

Turban *et al.* (2002) give the following definitions of eCommerce and eBusiness:

- *“eCommerce is an emerging concept that describes the process of buying, selling, or exchanging products, services and information via computer networks, including the Internet.”*
- *“eBusiness refers to a broader definition of eCommerce, not just the buying and selling of goods and services, but also servicing customers, collaborating with business partners, and conducting electronic transactions within an organisation.”*



**Figure 2.3: A comparison of eCommerce-eGovernment and eBusiness-tGovernment**  
(Source: Adapted from (Schubert and Häusler, 2001))

eGovernment has supposedly led to business process change, processes being speeded up, an increase in internal efficiency, improved information sharing and interoperation, greater transparency and accountability, greater proximity to citizens and improved service levels among other effects (Guijarro, 2004; Kaylor, 2005; Scholl, 2005a; Traunmüller and Wimmer, 2002). The literature on measuring the performance or the success of eCommerce in association with eBusiness and eGovernment, however, is not in the scope of this research; however it is an area of emerging interests considering the complexity of transformation taking place in the government organisations. Some propose the extension of existing frameworks (DeLone and McLean, 2004) for measuring the relative performance, while others propose holistic frameworks based on an augmented balanced scorecard approach, which capture the

organisational and strategic dimensions (Bremser and Chung, 2005). Timonen (2002) found that the potential of cost saving was not the main driving force behind adoption of eGovernment. There is a desire to make government more efficient, citizen-oriented, and achieving seamless service delivery. In regard to the adoption context, there are differences between private commercial and government organisations. The organisation structure, organisational culture, and social norms are examples of major differences (Huang *et al.*, 2002). The complexity of business processes, existing management layers, and boundaries across government bodies means that the adoption process of eGovernment in the government organisations takes a long time and passes through complicated stages. Therefore, the strategic framework of eGovernment adoption and its reflection into government organisations is not parallel with adoption of eCommerce in the private sector. In addition, the adoption of eGovernment initiative should be mandatory rather than voluntary. Janssen and Wagenaar (2003) and Warkentin *et al.* (2002b) justified this as citizens and businesses have to deal with government, and law-abiding citizens have no choice but to make tax returns through government entities. Hence, government agencies might be required by law to share information with other agencies or citizens.

The characteristics of IT architecture of eCommerce and eGovernment are almost the same, and therefore the requirements on eGovernment enabling infrastructure, which arise from stakeholders' needs and the enabling technologies, are basically the same as for eCommerce (Greunz *et al.*, 2001). However, from the IT perspective, the development and maintenance processes for eGovernment services' architecture are complicated and difficult, owing to the variety of services that need to be catered for, the vast size of any government's system, the bureaucratic nature of a government, and the complexity of the organisational structure of any government. The following Table 2.3 shows the different dimensions of eCommerce and eGovernment. To achieve success, service requirements at all levels in the evolution process must be analysed, involving staff, domain experts and administration (Devadoss *et al.*, 2002; Vassilakis *et al.*, 2003).

| <b>Dimension</b>                | <b>eCommerce</b>   | <b>eGovernment</b>   | <b>Sources</b>  |
|---------------------------------|--|--|---|
| <b>Adoption</b>                 | <ul style="list-style-type: none"> <li>• Voluntary/ Optional</li> </ul>  | <ul style="list-style-type: none"> <li>• Mandatory</li> </ul>  | <ul style="list-style-type: none"> <li>• Warkentin <i>et al.</i>, 2002a</li> </ul>  |
| <b>Main Motivations</b>         | <ul style="list-style-type: none"> <li>• Quality service to customer</li> <li>• Efficiency</li> <li>• Increase revenue</li> <li>• Competitive advantage</li> </ul> | <ul style="list-style-type: none"> <li>• Cost effective</li> <li>• Quality service to citizens</li> <li>• Citizen oriented</li> </ul>                | <ul style="list-style-type: none"> <li>• Huang, 2006; James, 2000</li> </ul>  |
| <b>Context</b>                  | <ul style="list-style-type: none"> <li>• Private/ Commercial Establishment</li> </ul>  | <ul style="list-style-type: none"> <li>• Government organisations/ Government Agencies</li> </ul>  | <ul style="list-style-type: none"> <li>• Huang <i>et al.</i>, 2002; Warkentin <i>et al.</i>, 2002b; Huang <i>et al.</i>, 2002; Warkentin <i>et al.</i>, 2002</li> </ul> |
| <b>Beneficiaries</b>            | <ul style="list-style-type: none"> <li>• Customers</li> <li>• Businesses</li> <li>• Suppliers</li> <li>• Partners &amp; Shareholders</li> </ul>                    | <ul style="list-style-type: none"> <li>• Citizens</li> <li>• Government Departments</li> <li>• Government Employees</li> <li>• Businesses</li> </ul> | <ul style="list-style-type: none"> <li>• Greunz <i>et al.</i>, 2001; Wimmer and Tambouris, 2002</li> </ul>  |
| <b>Organisational Structure</b> | <ul style="list-style-type: none"> <li>• Flexible</li> </ul>   | <ul style="list-style-type: none"> <li>• Bureaucratic and complex</li> </ul>   | <ul style="list-style-type: none"> <li>• Vassilakis <i>et al.</i>, 2003</li> </ul>  |
| <b>Implementation Process</b>   | <ul style="list-style-type: none"> <li>• Specific time-line &amp; simple</li> </ul>  | <ul style="list-style-type: none"> <li>• Long lead-time and complex</li> <li>• Multiple agencies</li> </ul>  | <ul style="list-style-type: none"> <li>• CabinetOffice, 2000; Devadoss <i>et al.</i>, 2002; Vassilakis <i>et al.</i>, 2003</li> </ul>                                   |

**Table 2.3: Major Dimensions Of eGovernment And eCcommerce From Literature**

### 2.6.2 *The Paradigm Shift of Business to eBusiness*

The evolution of internet technology has redefined the way business is conducted and assisted in changing the internal structure of organisations (Park and Campbell, 2001). For example, in place of traditional hierarchical structures, eBusinesses have tended to adopt flat decentralised structures to provide the speed of response and flexibility required by their business environment. Indeed, it has often been stated that to succeed in eBusiness, leaders in organisations must adopt new ways of working (Kanter, 1999). This rapid development of the Internet and its associated technologies, such as Web2.0, presents a requirement for business leaders to have a greater technical awareness of the capabilities and limitations of information technology (Francalanci *et al.*, 2001). In addition there was universal consensus as to the need for strong communication and strategy analysis skills and the ability to inspire a shared vision with the capability to anticipate new opportunities. Table 4 provides key challenges and their descriptions for benefit realisations. The humanistic focus of 1980s and 1990s management, inspired in part by Peters and Waterman's (1982) influential book 'In Search of Excellence', appears to be shifting towards a more balanced outlook where leaders in all types of organisation, including public organisations, will be valued for their technological competence as well as their motivational and organisational orientations.

Leadership has long been identified as a critical factor to induce major changes in business environments and also in government agencies (Burns and Robins, 2003). It is observed (Swedberg and Douglas, 2003) that the leader's strong commitment to radical change is normally manifest itself through an influential vision, innovative and creative mechanisms for a long term strategy in implementing change. The valuing of citizens as 'customer' is a concept that can be taken from eBusiness and transferred to tGovernment.

| <b>Categorisations of key challenges</b> | <b>Descriptions</b>  | <b>Sources</b>   |
|--|--|--|
| <b>Awareness</b>                         | <ul style="list-style-type: none"> <li>eGovernment tools availability awareness among leaders, end users, and stakeholders</li> </ul>                    | <ul style="list-style-type: none"> <li>Chowdhury <i>et al.</i>, 2006; Altameem <i>et al.</i>, 2006; Wood-Harper <i>et al.</i>, 2004; Themistocleous <i>et al.</i>, 2005; AlAwadhiand Morris, 2009</li> </ul> |
| <b>Trust</b>                             | <ul style="list-style-type: none"> <li>Lack of trust between end users and government, and from one agency to another</li> </ul>                         | <ul style="list-style-type: none"> <li>Sang and Lee, 2009; Sang <i>et al.</i>, 2009; Gilbert <i>et al.</i>, 2004</li> </ul>  |
| <b>Political desire</b>                  | <ul style="list-style-type: none"> <li>Lack of political desire can lead to slow implementation or failure</li> </ul>                                    | <ul style="list-style-type: none"> <li>Chowdhury <i>et al.</i>, 2006; Schwester,2009</li> </ul>  |
| <b>Cooperation/Collaboration</b>         | <ul style="list-style-type: none"> <li>Stakeholders and government agencies positive contribution is important to a successful implementation</li> </ul> | <ul style="list-style-type: none"> <li>Altameem <i>et al.</i>, 2006; Scholl, 2003</li> </ul>   |
| <b>Training</b>                          | <ul style="list-style-type: none"> <li>Training of stakeholders lead to successful implementation</li> </ul>   | <ul style="list-style-type: none"> <li>Sang <i>et al.</i>, 2009; Altameem <i>et al.</i>,2006; Goings <i>et al.</i>, 2003</li> </ul>  |
| <b>Scope</b>                             | <ul style="list-style-type: none"> <li>Managing workflow and process on web-portal and eServices are crucial</li> </ul>                                  | <ul style="list-style-type: none"> <li>Esteves and Joseph, 2008; Layneand Lee, 2001; Heeks, 2003b; Cardosoet <i>al.</i>, 2004</li> </ul>   |
| <b>Resistance to change</b>              | <ul style="list-style-type: none"> <li>Employee resistance to change</li> </ul>  | <ul style="list-style-type: none"> <li>Lam, 2005; Schwester, 2009; Ebbersand van Dijk, 2007</li> </ul>   |
| <b>Fund/cost</b>                         | <ul style="list-style-type: none"> <li>Appropriate funding and use of resources</li> </ul>   | <ul style="list-style-type: none"> <li>Lam, 2005; Esteves and Joseph, 2008; Goings <i>et al.</i>, 2003</li> </ul>  |
| <b>Privacy/Security</b>                  | <ul style="list-style-type: none"> <li>Data protection must be safe from unauthorised access</li> </ul>  | <ul style="list-style-type: none"> <li>Lam, 2005; Altameem <i>et al.</i>, 2006;Goings <i>et al.</i>, 2003; Schwester, 2009</li> </ul>  |
| <b>Technical skills</b>                  | <ul style="list-style-type: none"> <li>Right technical skills is important to develop/use</li> </ul>   | <ul style="list-style-type: none"> <li>Lam, 2005; Esteves and Joseph, 2008; Goings <i>et al.</i>, 2003</li> </ul>  |
| <b>Management skills</b>                 | <ul style="list-style-type: none"> <li>Leaders management skills is important</li> </ul>   | <ul style="list-style-type: none"> <li>Lam, 2005; Sang <i>et al.</i>, 2009; Themistocleous <i>et al.</i>, 2005</li> </ul>  |
| <b>Vision/Strategy</b>                   | <ul style="list-style-type: none"> <li>Senior management vision and strategic alignment are important</li> </ul>   | <ul style="list-style-type: none"> <li>Chowdhury <i>et al.</i>, 2006; Sang <i>et al.</i>,2009; Altameem <i>et al.</i>, 2006</li> </ul>   |
| <b>Willingness/ ability to use</b>       | <ul style="list-style-type: none"> <li>Stakeholders willingness and ability to use is very important and lead to success</li> </ul>                      | <ul style="list-style-type: none"> <li>Goings <i>et al.</i>, 2003</li> </ul>   |

**Table 2.4: Key Challenges And Benefit Realisations In Government Organisations**

The investment in changing infrastructure and eGovernment service development are essential. But services provided that are not going to be used will make it hard to justify investment unless government manages to create transparency and trust (TheWorldBank, 2004). In this study it was found countries such as Germany, the UK and France have problems achieving trust, while the Scandinavian model of governance, which combines a high cost of government with high levels of trust and citizen participation, and delivers quality services, , ‘remains a role model.’ Transparency is essential for building trust and this study cites the Estonian example, where “a citizen can log onto a secure web service and see which civil servant in which ministry has used their data, and for what purposes, on a daily basis.”By the Estonian law every Estonian citizen has the right to know what kind of data the government has collected on the citizen (Leitner, 2006).

### 2.6.3 *The Complex Nature of Stakeholders Relationship and eServices*

The development and implementation of enterprise-wide technologies is a major and complex undertaking (Hazlett and Hill, 2003), and there is usually inadequate support to guide the transformation process (Klievink and Janssen, 2009). Clearly-defined national legislative policies, managerial benchmarking, and academic or peer ranking of organizations' websites (ie. market-business model) provide the incentives that trigger organizations to move towards integrated service delivery (Janssen *et al.*, 2008). Furthermore, Elmagarmid and McIver (2001) identified four levels of citizen's services that can be delivered by the eGovernment. These services include one-way information provision, bi-directional information on demand, complex transactional services, and e-citizen portals. McClure (2001) states that government to citizen should aim to develop “easy to find, easy to use, one-stop points-of-service that make it easy for citizens to access high-quality government services.” Reynolds and Regio (2001) affirm that governments are required to perform resembling commercial entities and employ recent advances in technological development, in order to provide quality services and to meet rising expectations of their citizens. Hirschheim *et al.* (1995) further argue that success in the implementation of an IS project is reliant on the ability of the system to meet the expectations and needs of stakeholders. The developed framework integrates influential factors for eGovernment adoption, namely: (1) IT infrastructure; (2) Competencies which consists of two dimensions: (a) IT skills and (b) Management skills; (3) Strategic partners; (4) Organisation size; (5) Competition pressure; (6) Financial resources; (7) Management behaviour; (8) Political desire; (9) Barriers, and finally (10) Benefits. The reason for this is that case organisations encounter cross-organisational and business boundaries in government (Shang and Seddon, 2002).



Another example is from the Netherlands, where integrated service delivery is primarily realised at the organisational level and is slowly moving towards the national level. Many individual government's organisations provide (online) one-stop shops for their own products and services. Because citizens and businesses still have to manage and coordinate their interactions with the various government organisations, there is a need for more horizontal integration across organisations (Janssen and Shu, 2008). To ensure a joined-up or integrated government service delivery, governments have to deal with the problem of fragmentation of government within the constitutional, legal, and jurisdictional limits to reach the final stage (Scholl and Klischewski, 2007). This final stage is really 'customer-driven', termed joined-up government, in which the original stage of activities has been reversed. However, this requires well-built capabilities to create high levels of interoperability and flexibility to provide customized processes crossing organisations and departments (Bertot and Jaeger, 2008). Whereas online demand, which is customer-driven service delivery processes, may be unique and hard to determine beforehand, as governments do not always know what citizens want from eGovernment.

#### *2.6.4 The Strategic Partnership across Agencies for Transformational Change*

Better understanding and communication based in the modelling can enhance commitment to the needed changes. Public organisations can gain valuable insight into their own processes and those in other organisations. The formulated models can provide an overview of possible implications and consequences of an integrated implementation. The interests and requirements of all the organisations involved can be taken into account more explicitly. Employees of these organisations can participate more directly in the business engineering process, which also enhances their commitment. The creation of commitment would be a negotiation process between different government departments. This is a critical issue that needs to be addressed when introducing integrated platforms, for example, establishing agreements about these allocations of responsibilities among the stakeholders (Janssen and Cresswell, 2005).

#### *2.6.5 Business Process Reengineering (BPR) in eGovernment*

Most governments around the world, in general, and Europe in particular<sup>12</sup> shows that both the British and Dutch policy-makers, for example, are inspiring for transformational change and are

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<sup>12</sup>-- Refer to European conference 2005 in Manchester, where an invitation is received by the British government Office of the Prime Minister to attended.

looking at the business process reengineering movement to learn from its experience in the private sector (Dhillon et al., 2008; Murphy, 2005b). Transformational government is seen in the UK, for example, as the second phase of eGovernment, which focuses upon cost savings and service improvement through back-office process change whereas eGovernment projects have an increasing influence on how business processes evolve and change. Scholl (2005b) reports that while early eGovernment projects focused on government-to-citizen information and interaction, the second and third wave of eGovernment projects also emphasized internal effectiveness and efficiency along with intra- and inter-departmental as well as intra- and inter-branch integration. With such increases in scale of eGovernment projects, existing business processes including core business processes become candidates for improvement and reengineering. In addition, realising a better service provisioning for citizens and businesses is also a big challenge for governments at all levels (Gortmaker and Janssen, 2004). In eGovernment, once the service and application potential of the early catalogue and transaction phases is fully utilised, the next developmental step leads to the integration of services and business processes within and across government organisations (Layne and Lee, 2001). Thus, better service provision requires the integration of business processes across agencies, due to which significant changes to the business reengineering become a necessity (Scholl, 2003a; Weerakkody and Dhillon, 2008).

Now that online presence and online transaction services are in place in the context of eGovernment in most countries (United Nations, 2008), countries the world over are looking for more fundamental ways to achieve demand-driven government. Thus there is a need for radical change and the concept of 'transformational government' can be pushed forward.

In the eGovernment literature, often the focus is on the interaction between government organisations and citizens via web portal, call centres, physical offices and other interacting channels (Janssen and Wagenaar, 2003). Though, in order to exploit these channels in an efficient and effective way, the need to restructure the administrative operation, functions and processes is clearly felt to support coordination and cooperation between different government agencies. As bureaucratic legacy systems within government agencies often restrict the further development of new citizen-oriented processes. As a result, there is a need for management style leading initiatives for integration technological solution that enables seamless communication between front office and back-office across other government agencies (Wimmer and Traunmuller, 2000).

Organisations that have integrated their ICT infrastructures have reported significant benefits (Bass and Lee, 2002). For example, Themistocleous and Irani (2001) gave an explanation of the benefits that derive from the use of integrated technology, classifying the benefits into: (a) organisational (e.g. resulting in organised business processes), (b) managerial (e.g. achieving significant return on investment), (c) operational (e.g. reducing the operational cost), (d) strategic (e.g. increase in collaboration among different partners and suppliers), and (e) technical (e.g. achieving integration at different levels i.e. data, objects and process). Based on integrated organisation-wide architecture, organisations can increase their productivity and provide better services for their customers and improve their relationships with their stakeholders.

This illustrates that prolonging the integration problem is likely to be more costly than an initial eGovernment investment. This is especially true when long-term plans including new technologies are integrated into the whole agency infrastructure for transformation. The reason may be that while not taking integration into consideration, each government agency that is initially developed based on own requirements may have its own meaning of organisational objects (e.g. citizens, businesses). Therefore, every government agency that has its own needs may overlap with others in further regions. eGovernment is based on a different set of integration technologies continually progressing towards maturity, where each agency is characterised by a set of challenges that differs from one another. Thus, during the evolution process in moving from eGovernment to tGovernment, senior leaders in organisations need to appraise their own position and technological requirements to meet their organisational strategic plan.

## **2.7 Overview of eGovernment Maturity Models**

Growth stages, or which some authors refer to as evolutionary models, are popular in organisational research and information systems, and as normative literature indicates they have been applied in various domains (Andersen and Henriksen, 2006a; Janssen and Van Veenstra, 2005; Layne and Lee, 2001). Similar efforts can be found from eGovernment literature maturity models that define the maturity levels of eGovernment (Singhet *al.*, 2007). It is believed amongst academics and practitioners that reference models provide an efficient and effective means for evaluating processes in the eGovernment domain. The maturity models are mainly concerned with technological perspective such as the level of integration of data and applications, extensibility, and flexibility and so lack the citizen oriented perspective in defining the maturity level of eGovernment services and the reference process to measure the maturity

level. However, they have provided a unique contribution to the division of the stages of eGovernment by dividing the integration stage into vertical and horizontal integration phases. Traditionally, government departments and organisations have maintained separate autonomy that are not normally connected to other government departments at the same level or with similar departments at a local or central level (Irani *et al.*, 2006b).

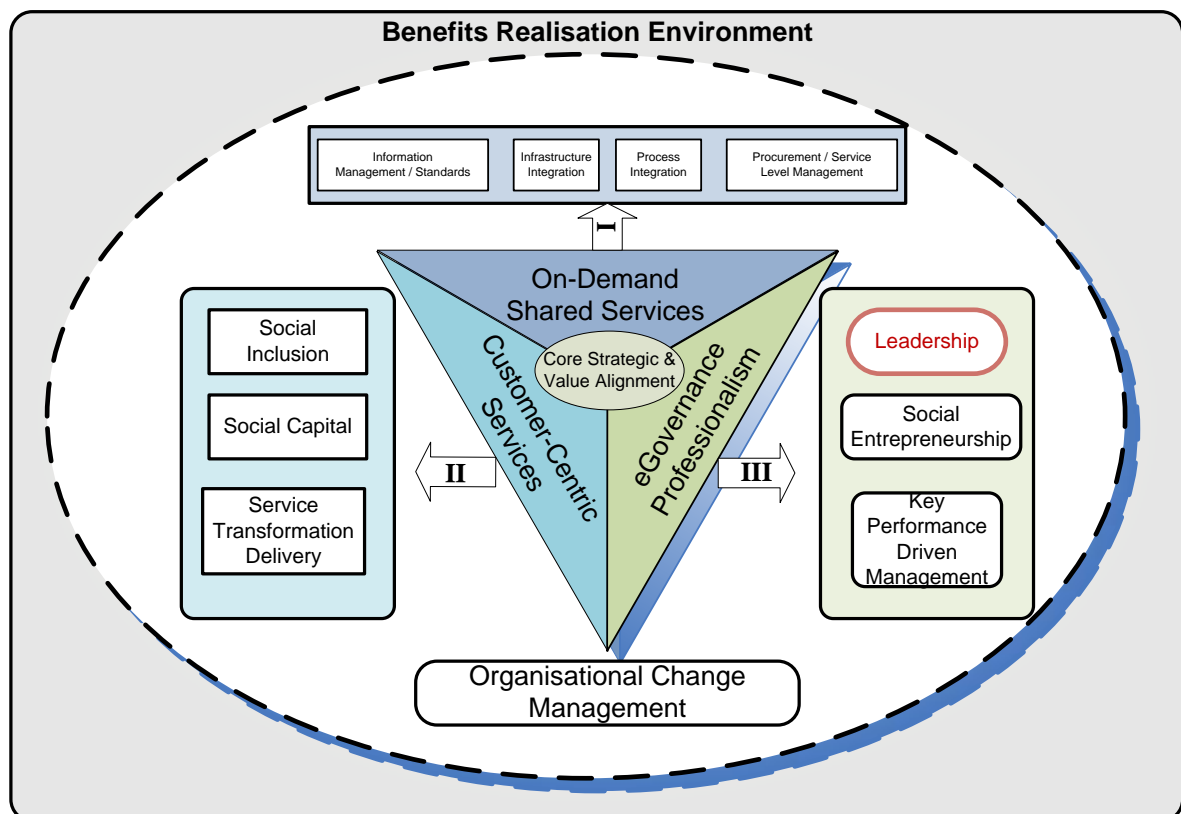
Another development considers stage models for creating joined-up government progressing from local to nationwide integration. This presents a five-stage evolutionary model of digital government that describes the progression from the stove-piped government stage, via the integrated organisations stage, the nationwide portal stage and the inter-organisational integration and demand-driven towards the interconnected government stage. They provide a practical guidance for policy-makers to stimulate development of the necessary capabilities to transform government organisation from one stage to another. The capabilities are described in terms of multidimensional metrics, including interaction types with stakeholders, specific technologies used, whether organisational transformation is needed or not, and the availability and development of demand driven services. This model is validated empirically with the aim to help government agencies benchmark their position against each other, to realise their role in the formation of an interconnected government, develop the necessary capabilities and adopt centrally developed infrastructural facilities aimed at moving to the next stage (Klievink and Janssen, 2009).

Dawes (2009) outlines a conceptual framework for considering the future and the need to take a holistic and multidisciplinary view. The framework can assist policy-makers and public managers in considering policy options and administrative mechanisms in a much wider context. The infrastructure that might be suited to the future of government must consider values and policies, and human, organisational, institutional, and societal factors, in addition to foundational tools and technologies. An infrastructure for transformational government requires an approach that far transcends single government organisations to take in all those rudiments of government administrations as an interrelated complete functioning in a complex socio-economic demanding environment.

### *2.7.1 Existing Tri-Dimensional tGovernment Model*

Realising the potential benefits of tGovernment has apparently led to business process change, increased internal efficiency, improved information sharing and interoperation, greater transparency and accountability, better proximity to citizens and businesses, improved service

levels (Guijarro, 2004; Kaylor, 2005; Scholl, 2005b; Traunmüller and Wimmer, 2002). However, the literature on measuring the performance of eGovernment is still in its early stages of development. Some propose the extension of existing frameworks (DeLone and McLean, 2004) for measuring the relative performance, while others propose holistic frameworks based on an augmented balanced scorecard approach, which capture the organisational and strategic dimensions (Bremser and Chung, 2005).



**Figure 2.4: Tri-Dimensional tGovernment (Source: Irani *et al*, 2007)**

The entrepreneurial model of eGovernment emphasises customer oriented service and efficiency, emulating the use of eCommerce in the private sector (Fountain, 2001b; Ho 2002; Moon, 2002a). There are some key factors as reported in the literature that might facilitate the development of digital government. Some advocates depict eGovernment as being linked to other efforts in order to reform fundamental government processes to produce (1) greater efficiency and customer service or (2) enhanced opportunities for communication and participation (Norris, 2001; Seifert and Peterson, 2002). Atallah (2001) claims that there are two main primary aspects may attribute to the benefits of eGovernment. The first is the

transformation of government operations, which benefits citizens, businesses, and the government itself. This means that the needs of citizens are more likely to be met, and allows businesses to benefit by making them both consumers of government services and providers of services and goods to the government. It also benefits the government through reducing operational costs via increasing the efficiency of internal operations. The second aspect is the transformation of governance positively affecting the relationship between citizens and governments through improving the interactivity between government and citizens and making it smoother, faster and more responsive. To facilitate this role, public service leaders would need to take the initiative to make it happen. It is well known within management science that the behaviour of leaders and managers greatly affects the outcome of those aspects of the enterprise that they are connected with (Sharif and Irani, 2006).

## **2.8 The Strategic Role of Leadership and Vision in Transforming Government**

The transformational government strategy, for example in the UK, aims to place innovative use of technology at the heart of the agenda to change public service delivery and sets out a six-year improvement journey for public services in the UK (Chief Information Officer Council, 2006), where the tGovernment concept tends to describe the process of improving services by leveraging the benefits from technological investment through business process re-engineering and re-design. Whereas in Europe the term is e-inclusion<sup>13</sup> remains one of the three strategic pillars of the i2010 plan — this is a plan for society with overarching goals of growth, employment, and quality of life.

The drive for services on demand and more transparency with citizens as well as businesses have put considerable pressure on governments to adapt to a changing world. Therefore, it is arguable that tGovernment is seen by many in the UK as the second phase of eGovernment, which focuses upon cost savings and service improvement through back-office process and IS/IT change. The tGovernment vision will require three key transformations. One, services enabled by ICT that are designed around the citizen and not the provider. Two, governments must move towards a shared services culture, thus eliminating data duplication and integrating and re-engineering back-office processes (Janssen *et al.*, 2007). Three, there must be broadening and deepening of government's professionalism in terms of planning delivery, management and governance of ICT-enabled change (Palanisamy, 2004).

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<sup>13</sup> -- The terms Digital Divide and e-Inclusion are being used interchangeably; however some still prefer the use of the first term. Although, they are treated as encompassing a single phenomenon in this thesis, a whole section deals with the different ways the phenomenon is conceptualized, thus it is decided to use only digital divide to refer to the many ways it is manifested.

Whilst the early stages of eGovernment focused on electronically enabling customer-facing services, the latter stages of eGovernment are focused towards more transformational change in government organisations agencies. This second stage of eGovernment are often referred to as the transformational stage of eGovernment or as the UK brands it, tGovernment (ChiefInformationOfficerCouncil, 2006). In European countries such as the UK and Netherlands, for example, public agencies are struggling to successfully achieve the levels of radical change that is required to realise fully integrated ‘one-stop’ eGovernment due to various identified social, organisational and technological challenges at both governmental and individual citizen level (Dhillon *et al.*, 2008; Iraniet *al.*, 2007a; Iraniet *al.*, 2008a; Klievink and Janssen, 2009). Those authors share a view that although IT is the facilitation point for cross-functional technology solutions and a catalyst for business process improvements at large; there is the need for integrated information and robust systems that must be deployed across departmental boundaries, such as ERP, CRM, Intranet, and a Web site with eCommerce and Customer Self-Service (Urwiler and Frolick, 2008).

Researchers and practitioners alike have come to an agreement to suggest that if eGovernment is to realise successful transformation of the government organisations (for example, reduce cost and eliminate waste, improve efficiency and effectiveness, transparency in governance and quality of service), public agencies will need radical changes in core processes across organisational boundaries, in a manner that has not seen before in the government organisations (Andersen and Henriksen, 2006a; Dhillon *et al.*, 2008; Kim *et al.*, 2007; Murphy, 2005a). The variety of tasks, integrated systems and other service essentials might be different for each change and may need to change to satisfy different stakeholders. This is because the demarcation between stages is characterised by discontinuity, and government organisations may require different capabilities to reach subsequent stages.

### *2.8.1 Absence of Theoretical based Model for tGovernment*

The transformation process, as described earlier, is a complex phenomenon causing management dilemma to which no universal approach exists and for which different types of models have been used. Public sector managers want models that help them realise the transformation, whereas government leaders policymakers are more interested in models that help them shape the right direction and identify relevant rudiments. A number have described the evolution of government efforts to provide electronic services in a model of growth stages

(Andersen and Henriksen, 2006a; Ghasemzadeh and Sahafi, 2003; Janssen and Van Veenstra, 2005; Layne and Lee, 2001; Moon, 2002b; Rao *et al.*, 2003). There was early empirical research conducted by Andersen and Henriksen (*ibid*) to demonstrate that stage models do provide guidance and argue that the model suggested by Layne and Lee (2001) reinforces the technological bias pushed by organisations that promote eGovernment. They emphasise moving beyond the economics-of-scale benefits and focus more on streamlining processes and improving communications with ‘customers’. The emphasis should be on the strategic use of IT and not just on operational and technical interfacing, a call for “a more reflective and critical use of IT”. As a result of this literature review, many stage models (including the one suggested by Layne and Lee, 2001) lack a clear theoretical foundation, as those growth models are derived without having any empirical and theoretical underpinnings. The reason, perhaps, is that these models were proposed to support the decision-making process in the government organisations from a practical perspective without any theoretical justifications, as is the case with Borrás (2011) who proposes Transformational Framework to be used and implemented in the UK. Hence, gaining insight into the capabilities that are required to move to a next stage and developing them at an early stage can reduce the transition time between stages. The stage model can potentially serve as a planning instrument for policymakers to stimulate the development of capabilities at the right time. Based on the identified capabilities required for each stage, governments would be able to prepare for the next generation of digital government infrastructures to align itself with the rest of the world. However, this framework lacks any theoretical and empirical justification to the various components to support the implementation of this model.

### *2.8.2 Theory of Leadership in the context of Change*

Research into the characteristics of effective leaders to initiate change has generated two contrasting theories namely Universal and Contingency theories of leadership. Contingency theories contest this view arguing that there is no one best way. Rather, effective leadership requires an executive to use a style and behaviour that match the context. The most appropriate leadership characteristics will be dependent upon the unique requirements of each organisation’s personnel, life stage and environmental setting (Goleman, 2000; Tannenbaum and Schmidt, 1973). The debate regarding these contrasting leadership theories has taken on a strong practical relevance with the emergence of eCommerce and the new eBusiness models and organisational forms it has heralded. The premise underlying these observations is consistent with contingency theory in that eBusiness leaders are seen to require a set of characteristics that are tailored to their distinctive environment.



### 2.8.3 Defining Leadership Characteristics in eGovernment Context

Many definitions of leadership have been put forward, although a good number share the common assumption that leadership involves the process of influencing others towards the achievement of defined organisational goals. There is less agreement, however, regarding the characteristics that define a leader. Indeed, leadership has been variously defined in terms of an individual's traits, behaviour or skills. A widely accepted taxonomy for classifying leadership skills suggests that leaders require technical, interpersonal and conceptual skills to succeed (Yukl, 2008). Technical skills are necessary for managers to solve problems, evaluate performance and direct subordinates. Cross-functional experience and international exposure have also been shown to be early discriminators for chief executives, providing skills in general management and cross-cultural understanding respectively. Interpersonal skills, in particular communication skills, are important to build relationships with employees and other stakeholders, to articulate organisational goals and to persuade others to commit to them. Finally, conceptual skills such as analytical ability and industry understanding are argued to be essential for effective planning, problem solving and strategy formation.

Leadership in an eGovernment context is closely tied with the political context as success depends on the level of commitment and innovative vision shown by politicians (or government officials) who govern a country at the time of eGovernment implementation. According to Heeks and Stanforth (2007) leadership in eGovernment projects means a number of things. Murphy (2005) defines leaders as: "People to whom others turn when missions need to be upheld, breakthroughs made, and performance goals reached on time and within budget". EGovernment projects are long-period projects, and thus need a strong leadership in order to avoid most challenges. Empirical research has identified leadership and visionary leadership as main factors for the success of eGovernment projects (Elnaghi *et al.*, 2007; Ke and Wei, 2004). In this respect, innovative leaders provide innovative solutions for citizens and businesses (Hunter and Jupp, 2001). Similarly, Denison (1995) asserts that effective leaders express far more complex and contradictory behaviour. Zairi (1999, p.215) asserts that:

*"The word leadership crops up in all discussions related to organisational issues and indeed study after study, experience after experience, have all acknowledged that leadership is always the key driver for change, effective performance and organisational access."*

Nowadays leadership is considered as a must for survival. It comes from the level of inspiration, commitment generated and corporate determination to perform. Moreover, Jaeger and Thompson (2003) argue that leadership is one of the key challenges to implementing any eGovernment project.

#### *2.8.4 Research on Leadership in Transformational Government*

Earlier research agrees with the findings that governments are complex organisations and have developed their own structures and basic service delivery systems according to their requirements (Senyucel, 2005). Traditionally, government agencies are based on a bureaucratic model that emphasise de-centralisation and specialisation in an automatic and pre-planned approach. Where, in fact, service delivery and administration tend to be organised in the same old vertical bureaucratic manner. Due to this bureaucratic nature and culture, government agencies have been experiencing from what may be termed as 'institutionalisation'. This shows that government agencies are laggards in adopting new technology solutions for initiating organisational change.

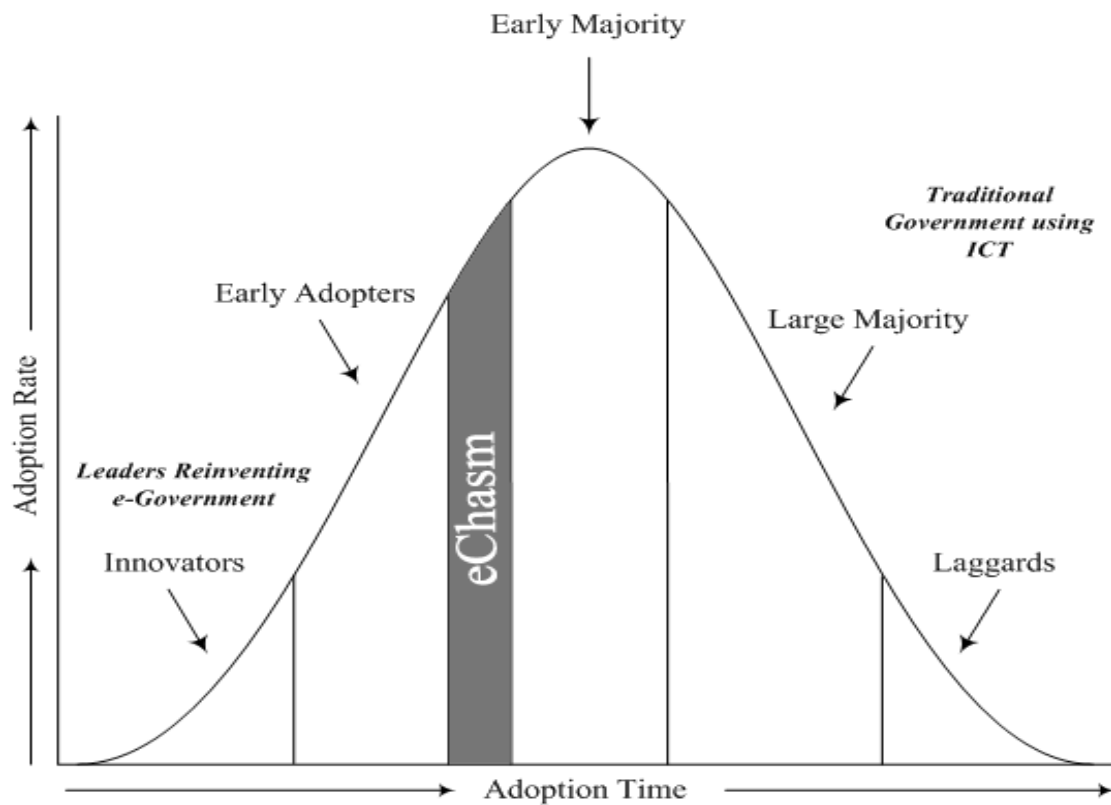
Those organisations that achieve the highest levels of IT added value are those that generally have a higher level of technology savvy and a culture of operational innovation reaching all levels. Tolbert *et al.* (2008) conducted an empirical study in the United States of America which showed States that have moved ahead with eGovernment are those that tend to be first adopters when many policies are examined over time. As the more innovative applications of IT are acquired, the culture of the organisation and technological sophistication of the organisation's management team must be considered, emphasising in their studies that Information Officers cannot achieve the more innovative levels of the IT Value Hierarchy on their own. Success at these high levels requires a very strong corporation with other organisational leaders and a widespread vision for creative information technology enablement within the establishment. This, it is claimed, may fundamentally change a generally accepted business model.

Literature indicates that laggard organisations can be characterised as those who adopt technology(s) only when they have no choice. Several laggards do not explicitly adopt IT at all, but rather acquire them accidentally when a particular IT is a component of a packaged solution (Rogers, 1995). Laggards' innovation-decision process is relatively lengthy, with adoption and use lagging far behind the awareness-knowledge of a new idea. Resistance to new IT on the part of laggards may be entirely rational from the laggards' viewpoint, as their resources are

limited, and they must be certain that a new idea will not fail before they adopt it. The adopters in the late majority group not only like to be certain that the new IT works, they also like to wait until it has been widely adopted and standardised. They do not consider that the IT offers them any competitive advantage, even though they recognise that they cannot continue without it once their partners or competitors have adopted it. The pressure of peers is necessary to motivate adoption. In this context, sometimes government agencies are forced to adopt new IT strategy, as other government agencies may require them to adopt as well (Bingham, 1976). There might be an exceptional case where government agencies be considered as innovators, i.e. cases where government agencies that have proactively adopted advanced or sophisticated IT structure to boost their economy (Devadosset *al.*, 2002).

Despite widespread academics debates on technological determinism i.e. the ability of technology (versus people) to cause change, the belief that advanced technology can make a big difference is widely held, both in academic and practitioner circles. It is undeniable fact that many organisations have achieved great success from properly aligning IT strategy with their business strategy (Galliers, 2004). The success of fully implementing eGovernment requires a careful adoption and full understanding of the technology that is being applied. Moore (1999) begins with the diffusion of innovations theory and argues there is a chasm between the early adopters of the technology product (the technology enthusiasts and visionaries) and the early majority (the pragmatists). It is noted that visionaries and pragmatists have very different expectations. Furthermore, an attempt was made to explore those differences and suggest techniques to successfully cross the ‘eChasm.’ This could well be applied to government adoptions of technology in its quest for eGovernment where leaders have a critical role in the transformation process (Elnaghi *et al.*, 2007). Crossing the eChasm, as will be mentioned later, can be thought of in close relation to Technology Adoption Lifecycle where five main segments are recognized; innovators, early adopters, early majority, late majority and laggards. Therefore, it is argued that those leaders who possess the quality of innovators and early adopters would be able to move successfully into the last stage of the eGovernment maturity model.

The following section will explain the importance of understanding of the technology lifecycle, and how government leaders play an important role alongside technology in making a complete transformation of eGovernment. Figure 2.5 shows the position of those leaders that will cross the “eChasm” and serve in the transformation of government.



**Figure 2.5: Technology Adoption Lifecycle as applied to eGovernment**  
(Adapted: Moore, 1999)

Innovators are those technology enthusiasts, whereas the early adopters are the visionaries. It is proposed that these two groups are the pioneers in moving the concept of eGovernment forward. It is the Innovators and Early Adopters Leaders that drive the eGovernment agenda and progress through various stages of eGovernment. Those leaders who are innovators and early adopters will live up to expectations of fully integrated services that citizens and businesses want from their government (Elnaghi *et al.*, 2007; Tolbert *et al.*, 2008). Indeed, what has brought into focus is that, at the time when one has just achieved great initial success in launching a new eGovernment initiative, creating what he calls early market wins, one must undertake an immense effort and radical transformation to make the transition into the final stage of the eGovernment and that is the seamless integration.

The gap that exists in the maturity model of transition is what it refers to as the “eChasm” (Figure 2.6). Moreover, the technology use by governments is not new, however, putting an “e” into government indicates a major shift in this information age and the way citizens and businesses look at government. The majority of literature since late 1990s focuses on technology and its applications to government services, by which, narrowing the opportunity

government has to transform its business offering. Government is in the business to govern, to create prosperity and wealth. However, leadership in eGovernment is currently receiving considerable attention. Denhardt and Denhardt (1999) suggest that public managers interested in leading change must:

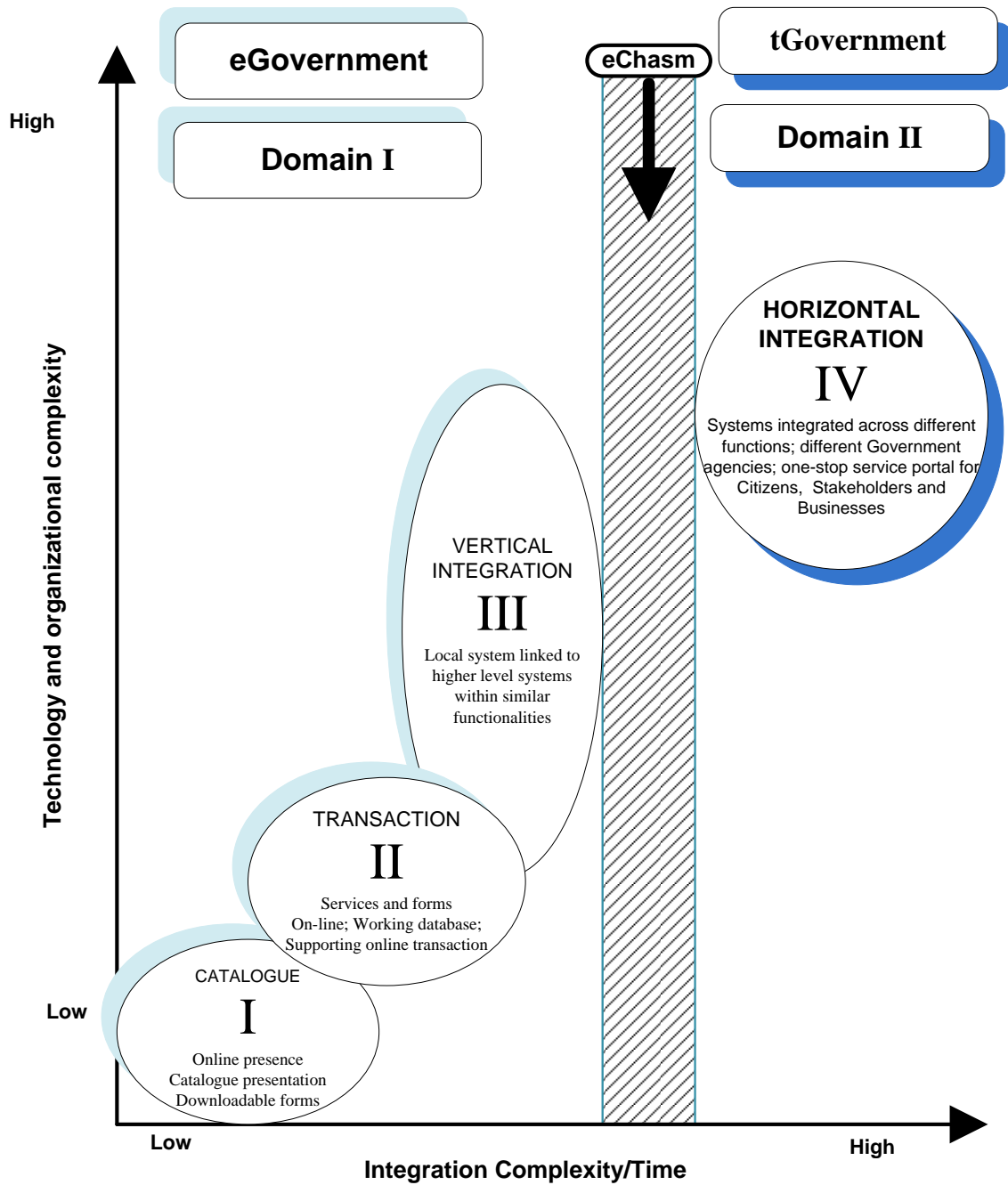
- assess the organisation's environment and the need for change
- plan strategically, though pragmatically, for change
- build support for the change process both through conversation and through modelling the change process in their own behaviour
- implement specific changes, but in doing so encourage a broader positive attitude toward change and innovation
- institutionalise the change

Often the implications for 'other' government agencies are not clear, consequently these 'other' Government agencies do not want to invest or change their processes to benefit from evolved technology. Surely, these barriers may hamper on full implementation and adoption of transformational government. The phenomenon of transformational leadership is important to understanding much of organised social activities, but the approach to understanding this phenomenon is not fully explained. The study of leadership is inspired by what has become known as the institutional school of organisational analysis. Leadership is a relationship among persons embedded in a social setting at a given historic moment. Strategies of leadership must consider the normative basis of the relationship and the setting, and the distinctive performance abilities of the actors involved (Biggart and Hamilton, 1987). Over time, leaders can change social structure, even while social structure constrains individual action (Giddens, 1979).

The critical analysis of literature review highlights the strategic direction that would expect visionary leaders in governments with orientations towards radical reform. Whereby, more likely are to develop the organisational structural and leadership capacity to support transformational government that ICT-enabled to commit fully to the transformational agenda: "...the vision is not just about transforming government through technology. It is also about making government transformational through the use of technology – creating and retaining the capacity and capability to innovate and use technology effectively as technology itself develops."<sup>14</sup>

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<sup>14</sup>-- See the UK Government's white paper "Transformational Government – enabled by technology", Cabinet Office, 2005



**Figure 2.6: Model For The eGovernment Gap “eChasm” In The Stages Towards tGovernment (Source: adapted from Layne and Lee, 2001)**

It is now commonly recognised that exceptional leaders (and by definition these are the only type of strategic significance) are those that are able to provide their organisations with a strong sense of vision and mission (Leavy, 1996). Perhaps integrative public leadership can become a broad umbrella term to describe boundary-crossing leadership and serve as a unifying, interdisciplinary framework for reflection and action into the future. “Integrative” is a particularly appropriate adjective for boundary-crossing leadership because the process of integration lies at the heart of successful cross-sector collaboration (Morse, 2010). The literature on strategic management, strategic human resource management, and organisational change provides additional insights about the influence of top executives on firm performance. Therefore, it is difficult to achieve cooperation and coordination across levels and subunits in an organization unless the managers have shared ideals and values to guide their decisions process and initiate change (Yukl, 2008). Analysis of a range of eGovernment efforts suggests that incorporating lessons learnt from the BPR era can provide an insight into what is needed to achieve organisational change (Fagan, 2006). Also, significant social, organisational and technical challenges will need to be considered and overcome in those efforts that strive towards achieving governmental transformation (Affisco and Soliman, 2006; Horton and Wood-Harper, 2006). Consequently, success will require the ability to rethink processes in a cross-functional way as championed by BPR approaches; while this has proven difficult in the private sector, research suggests that government entities face even greater challenges (Fagan, 2006; Tan and Pan, 2003a).

### *2.8.5 Universal and Contingency Theories of Leadership*

Theories which purport to explain the nature of leadership can be divided into two broad categories. ‘Universal’ theories of leadership which argue that the characteristics required of leaders will remain the same regardless of the stage of development of the organisation, the environment in which it exists, or the people who work in it. Effective leaders possess a generic set of personality traits and behaviour, which remain appropriate for all organisations and business environments. In contrast, ‘contingency’ theories contest this view, arguing that leadership requires a person to use a style of behaviour that matches the environmental and organisational context. This suggests that an overemphasis of the personal attributes of leaders may underestimate the unique requirements of each organisational setting and life-stage. Contingency theorists argue that there is no such thing as ‘one best style’ of leadership and research is focused on identifying situational variables that could make one style more appropriate than others. The underlying assumption is that effective leadership requires a style of behaviour that matches the conditions in which the leadership is exercised.

### 2.8.6 Theories Justification for Understanding tGovernment

Despite ever increasing research interest on eGovernment, the field currently lacks sound theoretical frameworks that can be useful in addressing two key issues concerning the implementation of tGovernment systems: a) a better understanding of the factors influencing the adoption of tGovernment systems, and b) the integration of various eGovernment tools and applications for the next stage of transformation. It is argued that what is needed is a base foundation towards the development of a theoretical framework for the implementation and adoption of tGovernment systems via an extensive literature review of eGovernment. Such a framework and/or conceptual model may result in a better synthesis of existing empirical findings and theoretical perspectives related to eGovernment and would reflect the complex multi-level and multi-dimensional nature of eGovernment systems' implementation and adoption. It is argued that without a proper theoretical framework, however rudimentary, public management research will be susceptible to the pressures and politics of the day and will not be able to create meaningful acceptable findings which are of wider relevance, across services, sectors and countries (Ferlie *et al.*, 2003). Good theory is essential for several reasons. First, good established theory provides guidance for practical action. Second, without such theory in any particular field, practitioners must borrow theories from other academic disciplines.

Chapter 3 of this thesis presents those theories that incorporate a logic proposition in which change occurs as a result of the interplay of various forces and the interdisciplinary nature of transformational government (Scholl, 2003c). Despite the prominence of the official discourse on tGovernment, academic and practitioner based research is still struggling with coming to grips with eGovernment, let alone tGovernment.

## 2.9 Conclusions

The review of the normative literature in the area of transformational government identifies a gap, namely, the absence of theoretical models for transformational government adoption in general. The explanation and rationale for this is that tGovernment is a relatively new research area. Although, there are present in the current literatures few eGovernment adoption models, research on transformational government adoption in the government organisations domain remains in its infancy. What exists is relevant but there is a need for further studies to broaden our limited knowledge base.



Government organisations transformation is a complex phenomenon that differs somewhat from private and other non public organisations. Whilst there has been much research carried out in private and other non public organisations, a void exists regarding tGovernment implementation and adoption models in the government organisations and in tGovernment implementation infrastructures.

The main objective of the research carried out and described in this thesis is to understand the strategic leadership challenges in the transformation process and evaluate those factors that can support the overall decision-making process for tGovernment in the context of different government agencies.

Additionally, the research carried out and described, in its aim to enhance the decision-making process for tGovernment adoption, attempts to understand the strategic leadership challenges in the transformation process and evaluates those factors that can support the overall decision-making process for tGovernment in the context of different government agencies. In further identifying different technology adoption lifecycle phases, it critically reviews the eGovernment and tGovernment literature and sets out the transformational domain with a particular focus on government agencies for development and those factor(s) and emerging themes that may influence tGovernment Implementation, as well as the importance of those factors at the critical phase of transition from eGovernment to tGovernment.

The main research issues derived from the normative literature review are summarised in Table 2.5.

| <b>Research Issues Derived from Literature for Further Investigation</b> |   |
|--|---|
| <b>Research Issues</b>   | <b>Description</b>  |
| Definitions of tGovernment   | <ul style="list-style-type: none"> <li>Existing definitions of eGovernment revisited and redefined. Furthermore, only limited research on transformational government was conducted, especially in the Arab World.</li> <li>Strategic leadership challenges in initiating organisational change that lead to transformation</li> <li>Learning lessons of business leadership in implementing radical change from eCommerce and eBusiness that help to understand the phenomenon of transformation.</li> </ul>                           |
| Lifecycle adoption Phases<br><br>Factors on tGovernment                  | <ul style="list-style-type: none"> <li>Existing technology adoption theory could be utilized to explain early leader's adopters of eGovernment. Also describe the various stages of development in the adoption lifecycle.</li> <li>Derive those factors that affect transformation and especially the call for a new style of strategic transformational leadership.</li> <li>Regaining confidence in the use of Business Process Reengineering for leaders conducting an effective implementation of organisational change</li> </ul> |
| Lack of theories to support tGovernment                                  | <ul style="list-style-type: none"> <li>Conceptual models developed without due consideration for theoretical support.</li> <li>Justification of use of theories from other discipline that share a common feature with government organisations transformation.</li> </ul>  |
| tGovernment Adoption Models  | <ul style="list-style-type: none"> <li>Lack of transformational models in government authorities to assist decisions makers in dealing with this complex tGovernment phenomenon.</li> </ul>   |

**Table 2.5: Specifying and Highlighting the Research Issues**

Chapter 3 presents the conceptual model which follows from the above analysis.



## **Chapter 3: Developing a Conceptual Model for Transformational Government**

### **Summary**

As discussed in Chapter 2, this research identifies that tGovernment adoption in public sector organisations is a vital research issue for which there is currently little literature given the newness; as a result, there is as yet no theoretical model for tGovernment implementation and adoption. Furthermore, attention is growing amongst academics and practitioners for the understanding of transformational phenomenon of eGovernment but little attention has been paid to management theories that underpin the evolution process of eGovernment implementation and adoption in the government authorities. This chapter critically reviews the stages of growth models that have been applied and which can be mapped onto tGovernment adoption. In addition, the chapter considers some theoretical literature that identifies the most significant parameters that support innovations and change in organisations. All of this results in the proposed stage of growth model to conceptualise a strategic model for tGovernment implementation. The proposed conceptual model requires an empirical validation, which is reported in Chapters 5 and 6 of this thesis.

### **3.1 Introduction**

The aim of this chapter is to develop a conceptual model for tGovernment implementation and adoption in public sector organisations. This section demonstrates the impact of the diffusion of innovation theory on tGovernment adoption, and it also differentiates between adoption and diffusion concepts. In the next section it describes the underlying principles for public transformation and the strategic role of leadership in the transformation process eGovernment in public sector organisations, and discusses the reasons why such implementation is still in its infancy stage. In doing so, we draw on various theories associated with organisational change such as Systems Thinking Theory, Institutional Theory, and Structuration Theory. This perspective directs attention to the ways in which organisations adopt certain procedures and practices (including specific leadership approaches), which serve to enhance their legitimacy in the eyes of important constituents within their environments (Bryman, 1999). Employing insights from institutional theory, for example, suggests that leadership styles differs and are affected not only by the leaders' personal characteristics and the situational/contingency factors, but also by the institutional environment, in which governmental regulatory agencies, professional associations, and educational and culture-producing establishments enforce, prescribe, and inculcate specific attitudes and behaviours.

The research undertaken and described in this thesis specifies institutional context as an organisational field where leadership plays a critical role in the transformation process (see institutional definition of an organizational field later in this chapter). The specific organisational field that focuses on in this study is tGovernment implementation in public sector organisations within Dubai government, United Arab Emirates (UAE).

### **3.2 Leadership and Government Reform in Context**

The institutional transformation of any organisational domain necessitates a change in the values and beliefs that structure cognition of organisational actors in the field e.g., (Fligstein, 1990; Greenwood and Hinings, 1993; Thornton, 2001). Public sector reform that is taking place in the UAE offers a good illustration of the importance of such change. To engineer the transformation of the principles and methods of operation of public sector organisations, Dubai government policy has been focused towards the development of a new system of beliefs and

practices resonant with ‘modernising’ public services, so that these services are more responsive to the needs of stakeholders and delivered effectively and efficiently. One important element of the wide program of reforms across public sector has been the emphasis on organisational change and the role of government leaders in ICT-enabled transforming organisations.

### *3.2.1 Government Transformation and Leadership*

The change from eGovernment to tGovernment requires a major shift in paradigm<sup>15</sup> thinking and strategic direction (Baker, 1992). It requires a new style of leadership that will be able to foster this transformation and provide the appropriate management and ICT-enabled infrastructure to support that dynamic and critical change. The assessment of the literature illustrates that tGovernment needs a strong leadership with technological solution to overcome their seamless infrastructure integration limitations. This is confirmed in the literature and it is well known within management science that the behaviour of leaders and managers greatly affects the outcome of those aspects of the enterprise that they are connected with (Sharif and Irani, 2006). For example, in developed countries, literature indicates that public sector leaders have made several efforts to achieve full integration and reach government modernisations at various levels of the government in the last decades. (Irani *et al.*, 2008b) also support research in that government initiatives still need better understanding for benefit realisation. The need for full integration strategy may be attributed to several government projects that were either never implemented or abandoned immediately after implementation. Due to this rate of failure many problems such as data integration and security interoperability that are technical in nature, remain most apparent at developmental and functional levels (Heeks, 1999).

It can be argued that public services projects developed for a specific area and solving particular problems may not comply with the integration needs in different areas. The focus in these initiatives is limited to vertical integration with defined functions and not concern with cross boundary development. This may be due to differences in: (a) size and nature of the government organisations in different geographical areas, (b) organisational integration needs, (c) organisational culture, (d) strategies, (e) structure and functionalities etc. Literature also

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<sup>15</sup>-- Baker (1992) in ‘Paradigms: The Business of Discovering the Future’ defines a paradigm as “a set of rules and regulations (written or unwritten) that does two things: (1) it establishes or defines boundaries and (2) it tells you how to behave inside those boundaries in order to be successful.”

indicates that there are cultural and structural differences in the private and public sector organisations (Ward and Mitchell, 2004). Thus, although the undertaken projects have not achieved the level of integration needed, they have contributed to better understanding in the limitations of connected government.

Due to the tGovernment challenges and infrastructure limitations reported earlier, Government agencies are constrained and face difficulties to: (a) overcome their organisational and integration problems, (b) provide quality services to citizens, residents and businesses and (c) improve their performance and productivity. Literature also indicates that governments are increasingly challenged to respond more flexibly to issues confronting local businesses and communities (Lam, 2005b). Thus, there is a need for a visionary leadership which has awareness of emerging innovative technology that provides a solution that attempts to meet their organisations requirements and integration problems. Clearly, the issues and limitations presented indicate the need for the fundamental understanding in adopting tGovernment for development. Since tGovernmentdomain is a new research area within the public sectors initiative, the review on the eGovernment implementation and adoption area indicates gap in the literature. For this reason at this point the absence of theoretical models and organisational perspective research regarding its implementation and adoption is identified as a research issue for further investigation.

As eGovernment advances towards maturity towards tGovernment, the role of management executives and public sector leaders continue to evolve and change. Public sector leaders are beginning to appreciate that eGovernment is more about modernisation and reform than about simply applying technology. Other challenges included looking beyond electronic service delivery to ensure links with other service delivery channels, with overall public sector modernisation efforts and with the legislative and regulatory frameworks in which eGovernment changes are taking place. Hence, tGovernment initiatives should refocus attention on a number of issues: how to collaborate more effectively across agencies to address complex, shared problems; how to enhance customer focus and involvement; and how to build relationships with private sector partners. Public administrations and municipalities must address these issues if they are to remain responsive. Notwithstanding the fact that is that front office and back office operations need to be seamlessly integrated into one system for effective transformational government.

It is worth noting at this point when a well known author (Heeks, 2000b) asks the question “will ICT help reinvent government? It might, but only if it is correctly managed.” Hence, management became central to the debate for a successful implementation of eGovernment and reaching seamless integration, i.e. the highest level of maturity. Therefore, providing a presence on the World Wide Web (WWW) is not enough and gives a limit to the whole objective of eGovernment. This issue has raised the argument further that eGovernment is not just about creating portals. Adding that, it is about transforming the whole government into a complete entity where citizens and businesses seamlessly interact with government services. In moving through the stages of development model (Layne and Lee, 2001), which is adapted for this research, which argues that it is imperative to have a strong management team with a strong visionary leadership that is capable of cross boundary implementation of eGovernment. This study suggests that a new style of leadership which has certain characteristics is required in order to advance the agenda of eGovernment, and reach the highest level of maturity. Furthermore, the development should be sign posted where it can encapsulate the whole aspect of eGovernment. For this reason, Caldow (2001) p.2, proposed seven eGovernment leadership milestones and the author argues that:

*“leaders who define eGovernment in a narrow sense -- simply moving services online - miss larger opportunities which will determine competitive advantage in the long run.”*

To demonstrate this, it was suggested that a broader grasp of eGovernment is needed for leaders to be able to position their government, citizen, businesses and communities at large for sustainable strategic advantage. Table 3.1 illustrates the summary of the main milestones and highlights the main area of achievement with brief descriptions of each milestone.

| <b>Milestone</b> | <b>Area of achievement</b>      | <b>Brief description</b>   |
|------------------|---------------------------------|--|
| <b>One:</b>      | <b>Integration</b>              | Process and technology integration through a portal. The government use of the Internet is vital.  |
| <b>Two</b>       | <b>Economic development</b>     | Digital age economic development generally has five dimensions—leveraging small and medium-sized businesses, education, attracting high tech industry, access to technology infrastructure, and a business- friendly government. |
| <b>Three</b>     | <b>eDemocracy</b>               | The manifestation of eDemocracy stretches across the spectrum of democratic process. It is to inform and engage citizens.  |
| <b>Four</b>      | <b>eCommunities</b>             | Government is intrinsic to community in fundamental ways. Public health and safety, parks and recreation, elderly and youth services. Electronic technologies offer government ample opportunities to enhance communities.       |
| <b>Five</b>      | <b>Inter-governmental</b>       | The inter-governmental phenomenon is a core ingredient of eGovernment. At the global level, quasi-governmental bodies are emerging to pool knowledge and resources. Higher performance would be achieved.                        |
| <b>Six</b>       | <b>Policy environment</b>       | Creating a new legal framework to cope with the digital age. Such as digital signature, digital divide, and hackers law.   |
| <b>Seven</b>     | <b>Next Generation Internet</b> | This is the capstone of a competitive eGovernment strategy. eGovernment will be defined in tomorrow's environment to gain advantage.   |

**Table 3.1: Sevene Government Leadership Milestones (Source: Caldow 2001)**

These seven milestones encapsulate what eGovernment is all about and provide government leaders with a framework to conduct that transformation process and reach the highest level of eGovernment maturity. As discussed earlier, the process of implementing an eGovernment transformation passes through different stages until it reaches the maturity level, which is the



seamless integration of government services with citizens and businesses from a single portal. There are also other models that suggest three to six stages of development, but all agree that reaching the last phase is what governments should, and it is the hardest to achieve. Generally, the normative literature is in complete agreement about the evolution process that eGovernment passes through, and the complexity surrounding the implementation and transformation. For the purpose of this research, this research proposes to use the model that was developed by Layne and Lee (2001), which shows four phases of development to eGovernment implementation (I to IV). It is worth noting that the work done to explain the transaction stage of eGovernment system, its location and importance is well documented by Irani *et al.* (2006a). Their work provides an insight into the complexity surrounding the attainment of Phase IV, as it represents the biggest challenge to government leaders since it requires cross-boundary integration. It is the transition from phase III to phase IV which provides the biggest challenge of all and call for different type of leadership. At this stage, leadership will have to adopt a new technology and employ new techniques for cross boundaries integration, which is refer to as horizontal integration. In order to capture the dynamic transformation of government, this thesis will consider the theory of diffusion coupled with the eGovernment stages of development to indicate the new style of leaders that are required for the final stage of seamless integration of eGovernment.

### *3.2.2 Crossing the Barriers of Institutions*

Theory and research on eGovernment suggest that there is a need for institutional change as well as new administrative bodies. Researchers have identified progressively more sophisticated stages for eGovernment, involving administrative restructuring at higher stages of development (Moon, 2002a). So far, it is agreed that transformation of public organisations to date has been limited in deploying current technology basically to reinforce current institutional structure i.e. automation. However, to realise adaptive, transparent, accountable, efficient and agile government that provides on-demand service provisioning at low cost, more radical changes are needed. In this respect therefore, transformational government has been identified as the next challenge following eGovernment (Janssen *et al.*, 2008).

Effective implementation would require agencies to collaborate across organizational boundaries in order to present information and service delivery in a way that it is seamless rather than fragmented across departments (Fountain, 2001b). The reality is that integration

across agencies is a complex phenomenon, there is a greater need for all-inclusive understanding of the state of affairs, and the many stakeholders involved. In fact, practitioners are finding it difficult to understand and manage the necessary transformation (Tan and Pan, 2003b).

Although this problem of coordinating cross-agency service-delivery processes is not specific to the public sector; businesses in general are looking for ways on how to coordinate effectively their inter-organisational processes. In dealing specifically with the public sector is, however, the matter is far more complex where strong emphasis is placed on transparency, accountability consistency, reliability, security, and non-discrimination of the service-delivery processes. This is the case as many public service-delivery processes are largely determined by legal framework, and these aspects are considered of vital importance (Janssen, 2010). Ensuring and maintaining secure and transparent processes is particularly important when service-delivery processes run across multiple, semi-autonomous agencies.

Greater transparency of information may require rethinking the ways in which government communicates with its citizens and stakeholders (Tolbert and Mossberger, 2006). This is to conclude that leading and managing the transformation for cross-agency collaboration is very important as it requires dealing with complex policies. This necessitates new way of dealing with administrative reform as well as complex infrastructures for implementation. Hence, it is confirming that tGovernment, in addition to strong visionary leadership, entails a significant amount of equipments, professional expertise, well managed coordination, and continued maintenance (Moon and Norris, 2005; Norris and Moon, 2005; West, 2001). Therefore, innovation in this particular domain of public transformation requires the use of established theories and principles from across discipline in the filed of organisational change to deal with the complex phenomenon of tGovernment and specialised administrative restructuring.

### **3.3 Theories in the context of tGovernment**

The influence of external pressures in shaping and institutionalising ICT-enabled change, in particular in the public sector in the context of implementing transformational government and/or electronic government initiatives. In this respect, institutional theory can offer a good conceptual lens to study new ideas such as open systems and interoperability; networked

innovations; knowledge sharing; and shared services as applied in the public sector context (Weerakkody and Dhillon, 2009).

There are theories that may assist in understanding the complexity surrounding tGovernment and which contribute to the proposed conceptual model to explain the barriers to tGovernment implantation and adoption. The Systems Thinking approach and its relevance to theory building and research in Information Systems and Management have been identified. Conversely, the Institutional approach and Structuration have also been identified as of some relevance to the public domain discipline. These identified different approaches are outlined in the following sections and their theoretical basis and foundations are mapped to correspond with this research.

The incorporation of these theories will help to explain how enablers ultimately create conditions to progress towards tGovernment. Based on this rationale, a theoretical framework acts a lens through which this can be explored. Its theoretical underpinnings are based on system thinking theory, institutional theory, and structuration theory, expressed through a process-output model (see Figure 3.1). The following sections describe how these theories informed the theoretical framework.

### *3.3.1 Systems Thinking Theory*

System Thinking had a major impact on the management sciences and other discipline (Jackson, 2001; Seiffert and Loch, 2005; Ziegenfuss *et al.*, 1998). The proposed integrative transformational government model of this research will be, in part, based on system thinking theory. It provides systematic mechanisms for how key enablers identified in eGovernment can add value to the transformational process of public organisations and for studying connections between eGovernment processes and transformational government. There is an agreed recognition amongst academics and practitioners that reaching the horizontal integration stage in the eGovernment service delivery structure, i.e. transformational government, is a cross-functional and multifaceted discipline (Fahey *et al.*, 2001; Galliers, 1994a; Janssen, 2010; Kamal *et al.*, 2011; Mitra and Gupta, 2007; Yukl, 2008). A variety of components bridges the gap between eGovernment and transformational government making the understanding of their interaction critically important; hence a holistic view of the whole process may prove very useful (Galliers, 2004). To this end, an integrative research model is necessary; i.e., the

relationships among key enablers, processes, and transformational government should be identified within the framework of systems thinking. Systems thinking theory considers issues, dimensions and problems in their entirety.

Problem solving and analysing processes in this way includes pattern finding to enhance understanding of, and responsiveness to, the problem. System thinking theory examines relationships between the various parts of the system. It is championed on the premise that there are emergent properties of systems that do not subsist when systems are decoupled into smaller parts (Senge, 1990). It is acknowledged that applying this theory might provide a better ability to describe complex and dynamic characteristics of transformational government in a systematic way. For example, public leaders (in charge in implementing change), the culture sharing, organisational structure, and the technological infrastructure for eGovernments should all be considered for effective realisation of transformational government. This approach emphasises the concern raised by Borrás (2004), Iraniet *al.*(2007c) and Weerakkody and Dhillon (2008) regarding the lack of an integrative framework in transformational government to provide a general sense of direction for benefit realisation. Systems thinking theory is important for transformational government because the theory can ensure that the same important components are addressed and compared by transformational government endeavours.

### 3.3.2 Stakeholder Theory

Stakeholder's theory encompasses all the important consistencies of the firm (organisation) in its governance mechanisms and stresses their fundamental importance. There are many definitions of 'stakeholder'. Stakeholders can be defined as group or individuals who can affect or be affected by the actions of an organisation (Freeman, 1984). And they can include a variety of government and other non-profit organisations that exist within the community. Carroll (1996, p. 74) states that stakeholder is

*“any individual or group who can affect or is affected by actions, decisions, policies, practices or goals of the organisation.”*

Clarkson (1995) in defining stakeholder theory stated that:

*“Firm is a system of stakeholders operating within the larger system of the host society that provides the necessary legal and market infrastructure for the firm’s activities. The purpose of the firm is to create wealth for its stakeholders by converting their stakes into goods and services”.*

Clarkson (1998) defines a stakeholder as “those persons or interests that have a stake, something to gain or lose as a result of its (organisation’s) activities” (p.2). Stakeholders are consumers, suppliers, government, competitors, communities, employees and stockholders (Carroll, 1996). Stakeholder management takes into consideration the interests and concerns of various groups and individuals in order to achieve a decision that satisfies all parties (Buchholz and Rosenthal, 2005). Since stakeholders (i.e. employees, owners, suppliers, customers, government, community etc.) of the organisation provide the essential inputs and infrastructure in order to be achieved, it follows that they should be included in the government centre that is responsible for the organisation’s destiny. Their inclusion, however, in the governance mechanisms should provide the extent that their interests are not threatened because they usually lack the managerial knowledge and long-term experience to take strategic decisions making process. Hence, those government leaders that are in charge of transformational implementation would benefit from such inclusion to create citizens’ centric services for full benefit realisation.

Stakeholder management involves taking the interests and concerns of these various groups and individuals into account in arriving at a management decision in order to reach a desirable outcome (Carroll, 1996). In a recent land registration mapping system project, it was reported that the national representative of the surveyors to their professional syndicate complaining by saying:

*“You have a World Bank project team run by non-departmental surveyors. How can these people know what is needed in our work process...the maps...conditions on the ground...I would have done this project differently, if I could.”*

This lack of social power in getting the surveyors to use the system was not lost on the national project coordinator who explained the outcome of negotiations as follows Azad and Faraj (2008, p. 11):

*“I have implemented a lot of IT projects. I know from experience that if you do not have the power to get the users to use the system then you must get somebody on your side to so who has the power. But it cannot be just part of the project setup. In order to have sustainability, the person's power needs to be positively channelled to enable a change of the procedure and make it stick- i.e., sustainable. This is only possible if you have somebody with procedural and administrative power who is willing to rearrange the existing work rules and compel the users to comply.”*

Stakeholder's involvement at the early stages of eGovernment project development forms a critical element of success to avoid implementation and adoption failure. Also the case of land registry shows the process of institutionalisation as institutionalising work and practices is rational approach to analyse the pragmatism of certain eGovernment inter-organisational institutional contexts especially those characterised by a difficult and complex institutional setting. Azad and Faraj (2009) believe that institutionalising work theoretical formulation in support of institutionalisation research, especially through the lens of practices, can be fruitful and rewarding for those interested in a better understanding of the processes of institutionalising eGovernment systems and how they become assimilated within the organisational environment of the public sector.

### *3.3.3 Institutional Theory*

A review of the research reveals that institutional theory has been applied to study the implementation and adoption of information systems across many institutions and different contexts (Greenwood *et al.*, 2008; Scott, 2001; Weerakkody and Dhillon, 2009). Characterized by epistemological pluralism and conceptual ambiguity, institutional theory has emerged as an important set of concepts and ideas for practitioners across the disciplines. In the past decade, there has been a growing interest in institutional theory with many studies using institutional concepts as a lens to interpret and analyse data (Currie and Swanson, 2009).

An institution is a social structure that is made up of a collection of individuals or organisations within which collectives exercise action or orientations in a constrained environment that will continuously be altered over time (DiMaggio and Powell, 1983; Meyer and Rowan, 1977; Scott, 1987). The ‘institutional perspective’ as such has been used by various researchers to explain why certain organisational structures and ideals endure, and to study the internal and external influences on organisational patterns. According to Robey and Boudreau (1999, p. 176), “organizations acquire institutional properties by drawing from abstract ideals in a society, such as competition, progress and efficiency.” Institutional theory posits that structural and behavioural changes in organisations are determined less by competition and the desire for efficiency, and more by the need for organisational legitimacy (AustralianGovernment, 2005). From a socio-organisational perspective, there was attempt to develop taxonomy of organisations within an institutional environment in order to conceptualise how organisations respond to violations of institutional norms and the resultant implications these actions have on the potential for change (Kondra and Hinings, 1999).

There is a mediating effect of institutional pressures on ICT assimilation in large-scale enterprise systems (Chatterjee *et al.*, 2002; Purvis *et al.*, 2001). This is drawn from institutional theory as a conceptual lens to examine the impacts of specific institutional factors (such as top management advocacy, strategic investment rationale and coordination) on the extent of assimilation of Web technologies into eCommerce strategies and activities in firms. In particular, the authors test the relationships among these factors using quantitative measures and the extent of the impact they have on organisational assimilation of Web technologies, whereas authors such as Marks (2007) and Currie (2007) have used institutional theory to evaluate the National Programme of Information Technology (NPfIT) in the UK, the world's largest public sector IT programme. In this context, they have used institutional theory to evaluate the wider organisational factors that influence the NPfIT programme. On the other hand, of course, there is no theory application in any domain without its due criticism. And to that effect, for example, Marks (2007) also examined the appropriateness and applicability of the method chosen (institutional theory) by Currie and Guah (2007) in the light of the complex and dynamic process that is involved in the transformation of the National Health System (NHS) in the UK.

The relevance of institutional theory is particularly notable in the context of understanding the impact of internal and external influences on organisations that are engaged in various change programmes, particularly those that involve ICT-enabled change in government organisations.

Thus far, while many studies have applied an institutional perspective to study social and political phenomena in an organisational context, few have focused on using the theory to understand the implementation or the impact of technology enabled change in organisations (Weerakkody and Dhillon, 2009). Institutional theories, then, suggest that the creation of supportive institutions may have broad implications for the capacity to innovate over time in other policy areas as well.

More recently, institutional theory has been used to study the effects of internal and external influences on large-scale IT implementations. For instance, a study by Liang *et al.* (2007) focused on the influence of top management. This work further focused on the application of institutional theory to examine the adoption of IS in organisations. That research was further developed and tested a theoretical model to investigate the assimilation of enterprise systems in the post-implementation stage within organisations. They also use the research model to explain how top management mediates the impact of external institutional pressures on the degree of usage of Enterprise Resource Planning (ERP) systems. Another study, in a similar context, (Robey and Boudreau, 1999) is also relevant in that the authors combine institutional theory with three other methods (organisational politics, organisational culture and organisational learning) to study the organisational consequences of information technology (i.e. the transformational effects of IT).

As described earlier, there were a few attempts made to use institutional theory with other relevant alternative theories. Examples include network-based model for technology and structure alignment (Davidson and Chismar, 2007). In this healthcare environment setting institutional theory was used to examine the interaction of institutional and technology change triggers in alignment processes during the implementation of a computerised physician order entry system in an acute care hospital. Similarly, Lee-Partridge *et al.* (2000) use institutional theory as a conceptual lens to understand the factors that enable the adoption of inter-organisational systems; the authors empirically examine the institutional pressures faced by various management executives to adopt financial electronic data interchange systems. Others study for example: the relational view of the firm, organisational inertia theory (Bala and Venkatesh, 2007); neo-institutional theory (Hu *et al.*, 2006); decision-making theory for the challenging the notion that the evaluation-and-selection of enterprise technologies by firms has been largely rational and deterministic (Tingling and Parent, 2004); shaping up eCommerce (Chatterjee *et al.*, 2002) where it was drawn from institutional theory as a conceptual lens to examine the impacts of specific institutional factors (such as top management advocacy,



strategic investment rationale and coordination) on the extent of assimilation of Web technologies into eCommerce strategies and activities in firms. In particular, the authors test the relationships among these factors using quantitative measures and the extent of the impact they have on organisational assimilation of Web technologies. In another research in the public sector (Cavalluzzo and Ittner, 2004) with discussion on how government organisations implement management control systems to meet legislative requirements; they do not use these systems for internal improvements but instead use institutional theory to conjecture how the limited perceived benefits realised from mandated organisational changes in government organisations tend to be symbolic, but have little effect on internal operations. Accordingly, institutional theory, as discussed so far, argues that organisations are constrained by social rules, which shape the form and practice of organisations. By this context confirming the role of management in response to institutional pressure, is focused on indoctrinating the organisation by interpreting the external environment and maintaining the status-quo.

The use of the theory in public sector contexts is also becoming quite popular. For instance, Dill and Anderson (2003) explore the diffusion of ethics-related technology policies in US schools using neo-institutional theory as a means to explain why some schools are establishing such policies while others are not, whereas Haugton (2006) uses institutional theory to analyse what institutional isomorphic pressures might be influencing the Canadian customs brokers' ICT projects. In doing so, the author reasons that the motives for an organisation's decision to undertake an ICT project transcend belief in the project's inherent utility. Another (Sawyer *et al.*, 2005) draws on institutional theory to study computerisation in the US residential real estate industry, and Soares-Aguiar and Palma-Dos-Reis (2008) use the theory to study the adoption of e-procurement systems in a Portuguese context. Continuing the public sector theme, another popular use of institutional theory is in the context of healthcare. The role of senior management in the transformation of existing institutions and fields is important within institutional research where the style of leaders and ability, particularly those with some key strategic resources or other forms of power will have significant impacts on the evolution of government.

According to Marks (2007) the consequent recursive nature of structure and the action of agents that results from this, as set out by Giddens's (1979) structuration theory, which can provide further insight, as Scott (2005) acknowledges. This is showing through interactive and recursive model a replacement for former more determinist approaches. This is in fact Giddens' approach, according to Scott (2005), which is to provide a balanced conception which establishes the

relationship between freedom and order. Structuration theory thus also provides further perspectives on the process of the interplay between parts in ways that institutional theory has yet to fully resolve.

### *3.3.4 Structuration Theory*

The complexity of dealing with organisational change and especially the public sector requires a completely new different theoretical approach. This is achieved through what Giddens (1984) describes as the instantiation of the new context.

Structuration theory is based more on the 'humanist' strands of sociology rather than 'scientific' strands. Giddens' (1979) structuration theory is an attempt to 'put sociology back together again'. Its starting point is that the division between structural and social action approaches is essentially false. It attempts to reconcile structural and interpretive sociology and subjectivism and objectivism. It distinguishes between 'system' and 'institution'. Social systems refer to reproduced practices. Institutions refer to reproduced rules and resources. 'Systems' and 'institutions' do not exist independently of individual activity rather they only exist in so far as they are continually produced and reproduced via the duality of structure Layder (1998, p. 140). Structure exists only at the instances where rules and resources are employed in social activity-instantiation. According to Giddens (1984), structure refers to the visible patterning of social relations; it is the rules and resources that actors draw upon as they produce and reproduce social activity. 'Structure is not external to action rather it is internal to the flow of action which constitutes social practices'. Also, the structures both enable and constrain action. 'Sociology should be concerned first and foremost with reworking conceptions of human being and human doing, social reproduction and social transformation'. It rejects determinism; the notion that structural forces externally constrain and determine behaviour. It rejects objectivism; here are no 'objective' 'social facts', 'structures', 'systems' or 'institutions' rather peoples reasons and motivations are central to sociologic analysis. Subjective understandings and relationship between 'observer' and 'observed' are central. It rejects functionalism; social systems cannot be analysed independently of actors. Also, it rejects reification of the social system; social systems do not have sets of needs (i.e. adaptation/ integration/ equilibrium as in functionalism) that are independent of the needs of social actors. It rejects dualism but accepts a duality of structure. According to structuration theory, the individuals constantly monitor their actions, they are aware and conscious of what they do but, but they may not do things

purposively. They sometimes do things without intending to do them, and things they do intend to do have unintended consequences. In the duality of structure, agency is both structured, and reproduces and revitalises the structure. It occurs through time and unintended consequences of actions modify future intended actions. One of the criticisms of structuration theory is that it cannot address the emotional “constitution” of society.

### **3.4 Benefit of Combining Different Theories**

To fully understand the tGovernment implementation and adoption in the context of a developing country such as Dubai, system thinking, institutional and structuration theories are used to underpin the conceptual model presented. Institutional theory provides explanations of the outcomes of institutional pressures and logics on the implementation of government changes by having its main focus on the macro-level.

System thinking theory directs attention at the micro-level processes and how organisational actors' cognition and situated actions are made collective and reified through social construction processes. Institutional theory clearly offers strong explanations for addressing the case study used in the research undertaken and described in this thesis at the organisational domain level, providing constructs such as isomorphism created by institutional pressures and logics (DiMaggio and Powell, 1983), as well as rationalised belief (Meyer and Rowan, 1977).

What is more, it is interesting to note that many have combined institutional theory with other theories to study the effect of information systems on organisations. For instance, Bala and Venkatesh (2007) combine institutional theory with two other theoretical perspectives, the relational view of the firm and organisational inertia, to explain the assimilation of inter-organisational business process standards in organisations. Similarly, institutional theory is combined with organisational ecology by Cannon and Woszczyński (2002) to explain the difficulties faced by organisations as a result of the Y2K problem, the associated pressures placed by them by constituents who were aware of the Y2K issue, and how this impacted the decision-making process of IS managers during this period. Robey and Boudreau (1999) propose Institutional Theory together with organisational politics, organisational culture, and organisational learning to explain information technology's role in organisational change. Tingling and Parent (2004) combine Institutional Theory together with Decision Theory in order to study the organisational evaluation and selection that impacts decision-making process

of enterprise systems. Further, Hayes (2008) draws on the social constructivist literature on institutional theory to explore the ways in which ICTs are inextricably interlinked with institutionalisation processes. On the cultural dimension using Institutional Theory and an in-depth case study of an ICT-led change project, Hayes (2008) examines how and why the values of one institutional group became dominant across an organisation.

There are other studies that also use institutional theory to examine how external pressures influence human behaviour. For example, Ituma and Simpson (2007) draw from institutional theory to describe how human behaviour is shaped and regulated by social structures in examining the trajectories of careers of Nigerian workers. In a recent study Miranda and Kim (2006) examine the premise that organisations' structures constitute disparate institutional contexts, which differentially constrain the application of decision-making rules in the context of IS outsourcing. Another use of institutional theory (Nevo *et al.*, 2007) was to explore the tension between internal and external IT capabilities in the realisation of enhanced IT productivity in firms. In this context, the authors examine how external consultants or suppliers of technology may not always share the same norms and beliefs held by the employees of an organisation. This may consequently undermine the efforts in achieving organisational goals and the whole benefit being compromised. Although some limitations of the theory was noted in examining IS-related issues (Marks, 2007), no effort is seen to modify and adapt institutional theory for the IS context. However, there is only a few studies (Chiasson and Davidson, 2005; Robey and Boudreau, 1999) that have looked at it from a theoretical advancement perspective, and clearly there is a need to undertake further conceptual/theoretical or non-empirical research in relation to the theory. Another notable issue is that very few research methods have been utilised by IS practitioners when applying institutional theory. The findings obtained from analysis of literature from referenced disciplines suggest that even an experimental approach can be used to investigate micro/individual-level issues in combination with institutional theory. However, no such study has yet utilised 'case study' with combined theories as a theoretical lens; this clearly indicates potential avenues to undertake such research.

Combining theories offers a good conceptual basis for studying transformational change in new environments (Currie, 2007; Davidson and Chismar, 2007; Haughton, 2006) where such studies were conducted in the public sector. These studies offer insights into relatively new and large-scale change initiatives that are complex and difficult to study. The lessons that emerge from these studies offer many practical guidelines for decision makers and implementers of change, as well as theoretical implications that merit further study. Most practitioners who have used

institutional theory have drawn from the theory to study the adoption of IS/IT in organisations and the impacts of adoption on organisational change. In this respect, various studies of adoption, ranging from internal ERP systems to inter-organisational systems such as web-based applications systems, are discussed. Nevertheless, the use of institutional theory is comparatively narrow and limited in the IS domain when considering its wider use in organisational studies. In some cases, in order to develop a better understanding of the empirical context under consideration, institutional theory may need to be combined with other theories and research models. As revealed in the literature, this will enable practitioners to use it more effectively to cover a wider breadth of organisational issues and behaviours (Weerakkody and Dhillon, 2009).

Table 3.2, below, provides an overview of the four theories used as the lens through which the case study used in the research undertaken and described in this thesis:

| Theories           | Relevance of Theories to this Research  |
|--------------------|---|
| Stakeholder Theory | <p>The interaction between government organisations and its stakeholders needs to be transparent and offered in both a traditional manner and also through the internet. Double process front-end Time required for reengineering and radically changing the internal business processes of the government organisation. Stakeholder's theory encompasses all the important consistencies of the organisation in its governance mechanisms and stresses their fundamental importance.</p> <p>Stakeholder management takes into consideration the interests and concerns of various groups and individuals in order to achieve a decision that satisfies all those have interest with government. Those government leaders that are in charge of transformational implementation would benefit from such inclusion to create citizens' centric services for full benefit realisation. Stakeholder's involvement at the early stages of eGovernment project development forms a critical element of success to avoid implementation and adoption failure.</p> |

|                                      |  |
|--------------------------------------|--|
| <p><b>System Thinking Theory</b></p> | <p>To reengineer the transformation of the principles and methods of operation of public sector organisations, Dubai government policy has been focused towards the development of a new system of beliefs and practices resonant with ‘modernising’ public services, so that these services are more responsive to the needs of stakeholders. It provides systematic mechanisms for how those key enablers identified in eGovernment can add value to the transformational process of public organisations and for studying connections between eGovernment processes and transformational government. A variety of components bridges the gap between eGovernment and transformational government making the understanding of their interaction critically important; hence a holistic view of the whole process. The relationships among key enablers, processes, and transformational government should be identified within the framework of systems thinking. Systems thinking theory considers issues, dimensions and problems in their entirety. It is acknowledged that applying this theory provides a better ability to describe complex and dynamic characteristics of transformational government in a systematic way.</p>  |
| <p><b>Structuration Theory</b></p>   | <p>The complexity of dealing with organisational change and especially the public sector requires a completely new different theoretical approach. Structuration theory thus provides further perspectives on the process of the interplay between parts in ways that institutional theory has yet to fully resolve. It distinguishes between ‘system’ and ‘institution’. Social systems refer to reproduced practices. Institutions refer to reproduced rules and resources. ‘Systems’ and ‘institutions’ do not exist independently of individual activity rather they only exist insofar as they are continually produced and reproduced via the duality of structure. Structure refers to the visible patterning of social relations; it is the rules and resources that actors draw upon as they produce and reproduce social activity. It rejects functionalism; social systems cannot be analysed independently of actors. According to structuration theory, the individuals constantly monitor their actions, they are aware and conscious of what they do but, but they may not do things purposively. In the duality of structure, agency is both structured, and reproduces and revitalises the structure. It is useful to identify the impact of institutionalisation in changing organisational norms that lead to transformation.</p> |

|                             |  |
|-----------------------------|--|
| <b>Institutional Theory</b> | <p>Dubai Government agencies comprise a social structure that is made up of a collection of individuals or organisations within which collectives exercise action or orientations in a constrained environment that will continuously be altered over time. Institutional theory posits that structural and behavioural changes in organisations are determined less by competition and the desire for efficiency, and more by the need for organisational legitimacy. The institutional transformation of organisational domain necessitates a change in the values and beliefs that structure cognition of organisational actors in the field. The ‘institutional perspective’ as such has been used in this research to explain why certain organisational structures and ideals endure, and to study the internal and external influences on organisational patterns. The relevance of institutional theory is particularly notable in the context of tGovernment in providing understanding the impact of internal and external influences on organisations that are engaged in various change programmes, particularly those that involve ICT-enabled change in government organisations. Thus far, while many studies have applied an institutional perspective to study social and political phenomena in an organisational context, few have focused on using the theory to understand the implementation or the impact of technology enabled change in organisations. In the context of this thesis further focussed on the application of institutional theory to examine the adoption of IS in government organisations. Accordingly, institutional theory, as discussed so far, argues that organisations are constrained by social rules, which shape the form and practice of organisations. By this context confirming the role of management in response to institutional pressure, is focused on indoctrinating the organisation by interpreting the external environment and maintaining the status-quo. Government leaders in the transformation of existing agencies is important within institutional research where the style of leaders and ability, particularly those with some key strategic resources or other forms of power will have significant impacts on the evolution of government. Institutional theory provides explanations of the outcomes of institutional pressures on the government changes implementation by having its main focus on the macro-level. Institutional Theory together with organisational politics, organisational culture, and organisational learning to explain information technology's role in organisational change.</p> |
|-----------------------------|--|

**Table 3.2: Theories used as Lens for Case Organisations Analysis and Added Value**

### 3.5 Theoretical Framework

In order to understand the evolution process of eGovernment and to capture the varying focus of eGovernment from the literature and empirically, Kamal *et al.* (2011, p. 321), as outlined in the literature review, propose a new definition for tGovernment:

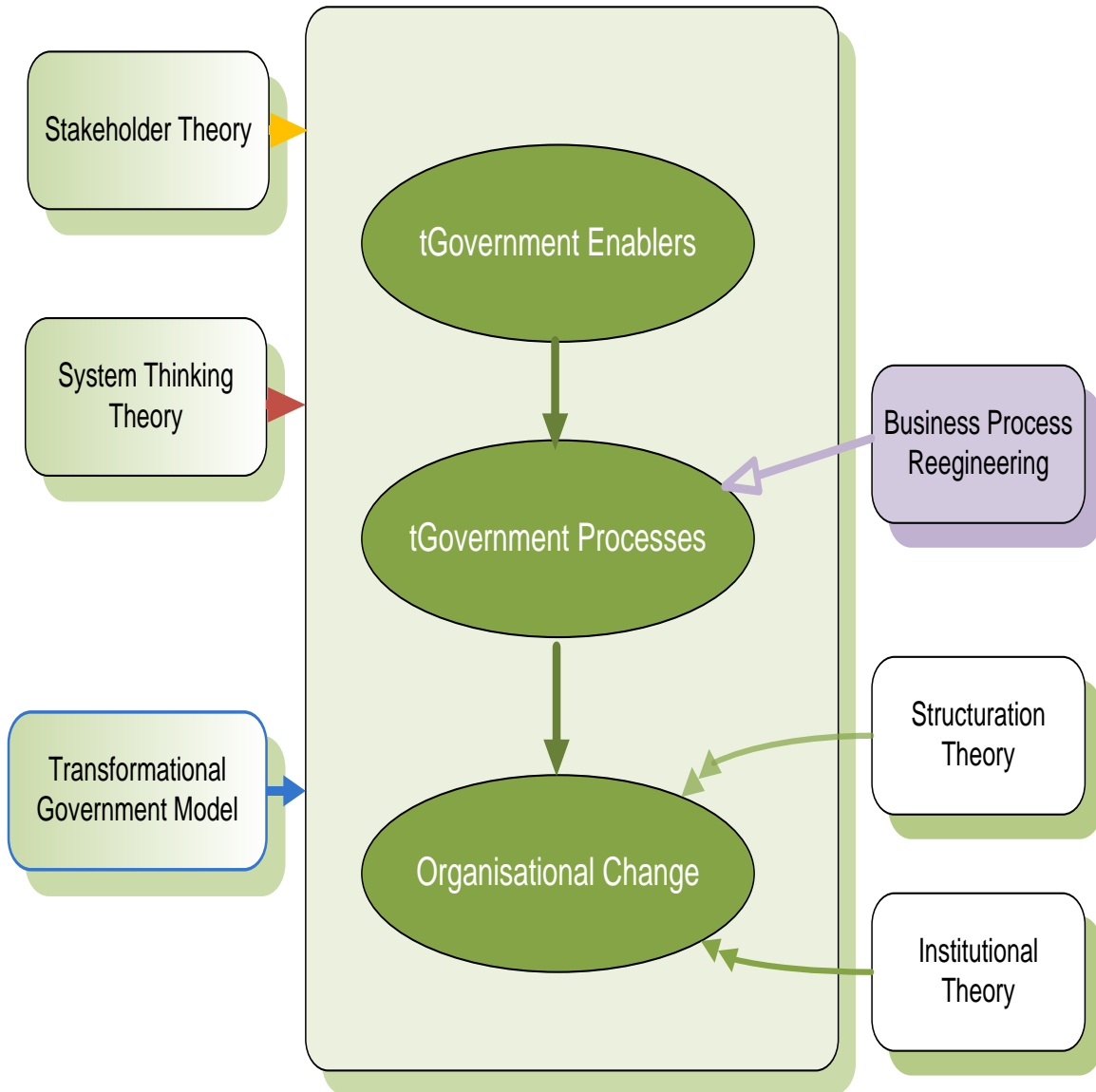
*“tGovernment is the ICT-enabled and organisation-led transformation of government operations, internal and external processes, structures and culture to enable the*

*realisation of citizen-centric services that are transparent, cost effective and efficient.”*

This definition captures the various elements that are given attention and focus organisational change on eService delivery.

As a result of the four theories listed and described in Table 3.2 and taking into account the literature, the following theoretical framework is proposed (Figure 3.1) to act as a guide and a lens for the research undertaken and described in this thesis. This theoretical model provides an integrative view of relationships amongst transformational government key components. The tGovernment phenomenon can be conceptualised as a set of three distinct, but interrelated components. These are categorised as follows: tGovernment enablers, tGovernment processes, and organisational change performance with associated theories.





**Figure 3.1: Theoretical Framework Of This Empirical Research**

As it is shown tGovernment management enabler (e.g. eGovernance, organisational structure and culture) affects organisational performance (e.g., technological, financial and non-financial) through business processes reengineering (e.g. creation, redesigning, sharing, and using of services). In particular, these management processes can either be dependent variables for tGovernment management enablers or independent variables that form antecedents for organisational change and performance. This is the stage where a clear distinction is posed to eliminate the confusion in the literature with regard to domains of eGovernment and tGovernment where the former is concerned with agency-based services and more emphasis on

technology; whereas the later, is more concerned with cross-agency based services with more emphasis on management and complexity of technology for increased value added to citizens and businesses (see Figure 3.2).

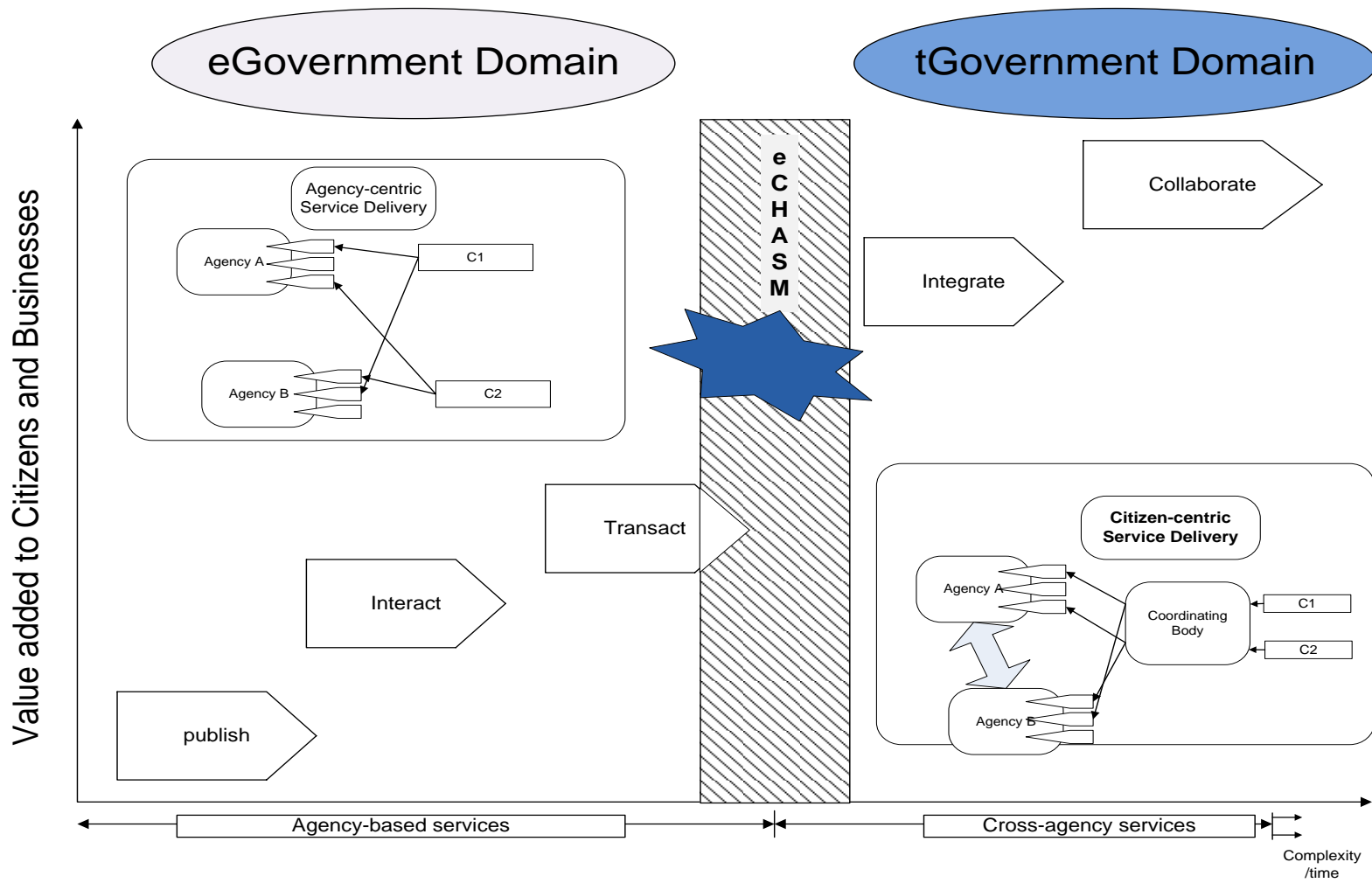


Figure 3.2: The 'eCham' Split Between eGovernment And tGovernment Domains

### 3.6 Proposed Conceptual Model

The success of fully implementing and adoption of eGovernment requires a careful adoption and full understanding of the technology that is being applied. Moore (1999) begins with the diffusion of innovations theory, and argues there is a chasm between the early adopters of the technology product (the technology enthusiasts and visionaries) and the early majority (the pragmatists). Moore (1999) believes visionaries and pragmatists have very different expectations. Furthermore, attempts were made to explore those differences and suggest techniques to successfully cross the ‘chasm.’

Crossing the gap between the two domains from eGovernment to tGovernment, which in the research carried out and described in this thesis is termed ‘eChasm’ is in part closely related to the Technology Adoption Lifecycle reported in Chapter 2, where five main segments are recognized; innovators, early adopters, early majority, late majority and laggards. Therefore, it is argued that those leaders who possess the quality of innovators and early adaptors would be able to move successfully into the last stage of the eGovernment maturity model. The following section will explain the importance of understanding of the technology lifecycle, and how government visionary leaders play an important role alongside technology in making a complete transformation of eGovernment.

Innovators are those technology enthusiasts, whereas the early adopters are the visionaries. It is proposed that these two groups are the pioneers in moving the concept of eGovernment forward. It is the Innovators and Early Adopters, the Leaders that drive the tGovernment agenda and progress through various stages of eGovernment.

The gap that exists in the maturity model of transition is what the research in this thesis refers to as the “eChasm” (Figure 3.2). The technology used by governments is not new. However, putting an “e” into government indicates a major shift in this information age and the way citizens and businesses look at government. The majority of literature since the late 1990s focuses on technology and its applications to government services, and in so doing narrows the opportunity government has to transform its business offering. Government is in the business to govern, to create prosperity and wealth. It is unsurprising, then, that leadership in eGovernment is currently receiving considerable attention. The argument in this thesis begins with a description nature of government and builds a case for a new kind of leadership that must emerge to meet the expectations and challenges of tGovernment. The competencies of this new kind of leader are the foundation to develop cross-boundary leaders to meet the challenges of tGovernment, by which to reach horizontal integration, phase IV. There appears to be a major

shift in government organisations to be more citizen-focused. This is in line with eBusiness to satisfy customers.

The fact that tGovernment has multiple dimensions is a complex issue. Each dimension demands strong leadership, strategy, cross-coordination, and know-how, all combined with a technology strategy to take vision to reality. With goals to facilitate easier, less time-consuming, and more interactive engagement with the government departments, and to make the business more effective and efficient through the use of technologies, government leaders are embarking on a wide range of tGovernment initiatives. The following are some of the reasons, to mention a few, why there is a need for a new visionary style of leadership:

- **Task is complex;**  
Awareness of new technology, Overcoming Barriers, Organisational Change
- **Transformation is highly costly;**  
Budget allocations, System Development and management, Infrastructure Change
- **Requires a long term commitment; and**  
Risk factors, Change of Technology
- **It also needs to have understanding of the whole government strategy**  
Formulating new strategy, Awareness of cross boundary barriers and policies

At this stage it can be argued that a new type of leaders is required to manage the complexity surrounding tGovernment with associated key enablers for successful crossing the “eChasm” and bridging the identified gap that exist between Domain I and Domain II (see Figure 3.3).

Two distinct dimensional domains phases (Domain I) and (Domain II) exist that are outlined in the following section.

- **The first Domain I** (eGovernment) includes the three first stages-Catalogue, Transaction and Vertical Integration asserting of IT-organisation interaction, the bureaucratic organisational structure based on a system of values that emphasises hierarchy, tradition and compliance. The vertical functionality describes the “Reengineering of processes though IT” trend, which may be prove a transitional period. The supporting structure remains the same but a new set of values forces new organisational interpretations: efficiency and quality are considered to be crucial for surviving towards the extent of Domain II which is used as a tool for organisational optimisation.

- **The second Domain II** (tGovernment) presents the “government reinvention” phase that is just entering where technological innovation can no longer be seen as a fabrication derivative nor even as a tool but rather as the catalyst for non-linear and unpredictable public change. Organisations have to survive in a rapidly and constantly changing environment. Leaders have to be flexible, appropriate technology needs to be reconfigurable, open and semantic. This is to be based on interoperable systems which are indispensable at the technological level and new working ethos and practices compatible with the new transformed environment are tested at the organisational level.

The primary research focus is on the Inter-relationships between eGovernment and tGovernment by elaborating on the significance of ‘eChasm’ key enablers for tGovernment implementation and inter-related issues (see Figure 3.3) for tGovernment implementation as the foundation of government transformational change that is derived from literature. As discussed before in this chapter and in chapter 2, the main components within the established gap can be categorised into three main domain groups namely eGovernance Domain, Organisational Domain, and Technology Domain as follows:

- **eGovernance Domain:** Visionary Leadership, Strategy Formulation, Citizen-Centric, and Funding Constraint.
- **Organisational Domain:** Culture, Organisation structure, Change Management, Organisation Culture, Marketing and Awareness, Policy and Legal Issues, and Business Process Reengineering.
- **Technology Domain:** ICT Infrastructure, ICT Standard, Integration/ Cross Agencies Collaboration, and Security

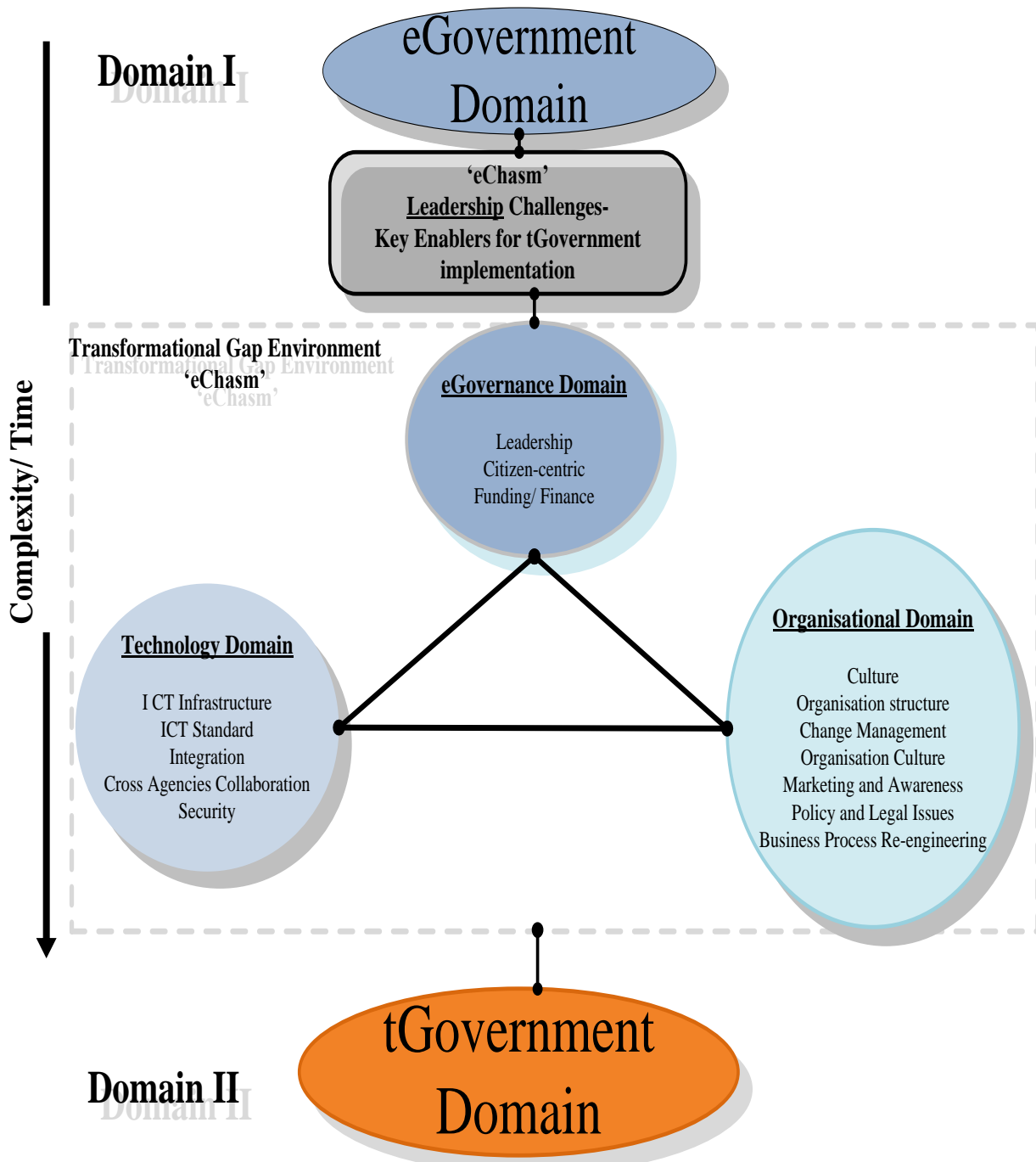


Figure 3.3: The Conceptual Model For “eChasm” Key Enablers For tGovernment

### 3.7 Conclusions

tGovernment migration is a complex process involving technology, business process reengineering, strategy and organisational change. It is an iterative process that takes place over long time and changes that affects both organisation functions and stakeholder culture. Throughout the ongoing change process, government leaders must reassess those changes in the appropriate available technology, the internal structure and culture of the organisation to assure an effective value added outcomes. The real challenge is to manage this requisite multidimensional change in a way that will encompass all those key enablers needed to allow an effective tGovernment effort for value realisation. The proposed model presented is a step towards better understanding the complexity of transformational change and in enabling this migration to occur more successfully.

The research carried out and described in this thesis has identified a gap in the literature dealing with the absence of a theoretical model for tGovernment implementation and adoption in public organisations which ascertains and identifies benefits and barriers associated with transformational government. Various models have been proposed and discussed in the literature to provide an understanding of the principles behind the evolution of eGovernment but the research carried out and described in this thesis is the first to bring together transition in the adoption of various integration technologies as well as the organisational and managerial approach in the area of transformational stage model for the implementation of tGovernment in the context of developing country organisations. Therefore, the research described in this thesis will be using the stage model and the underlying related theories explained in previous sections as the basis for this research for the reasons:

- tGovernment is a new emerging phenomenon and as such has not been widely studied, thus the existing model is the only available source of reference in this area.
- The factors of this model are empirically tested through various case studies in private organisations as well as in the public sector;
- These identified factors help in analysing the implementation of tGovernment public sector organisations;
- The slow progress of eGovernment in moving through the stages requires an innovative approach dealing with organisational change.



In addition, a comprehensive literature review on eGovernment/tGovernment is carried out. In doing so, this research has reviewed a variety of stage models and has attempted to analyse the factors of these models that can support the transformation of ICT-enabled organisations in public sector organisations.

## **Chapter 4: Research Methodology – A Qualitative Case Study Approach**

### **Summary**

This chapter describes the research methodology of the empirical study presented in this thesis. In this chapter, this research describes how the current thesis ‘research issues’ will be resolved and the aim and objectives will be achieved. In doing so, the description is within the context of research methods that is frequently used in the area of management and information systems. Initially, the first three Sections review (a) positivism, (b) critical theory, (c) post-positivism and (d) interpretive epistemological stances and results in the justification of interpretive as the research approach adopted. It explains why qualitative research is used and further explains its benefits and limitations. Justification for the adoption of a case study research strategy is provided.

## 4.1 Selecting an Appropriate Research Approach

The word methodology in the social sciences refers to the procedures used by a theorist in seeking to find out about social reality. Also, it sometimes used to refer to methods for exploring and gaining knowledge about systems. According to Kock *et al.* (1997), the growing importance of IS research in the 1980s and 1990s has led to a number of different research approaches and methods, usually adopted from other disciplines such as sociology, natural sciences, and business studies. As a result, a number of different IS research taxonomies have been proposed (Galliers and Land, 1987). Since IS in management is multi-disciplinary with many of its aspects related to specialised subjects, the identification of an appropriate research approach is not a simple task (Land, 1992). In addition, there is no single framework that includes all the domains of knowledge needed for the study of IS (Galliers, 1992). It is acknowledged (Walsham, 1995) that selecting an appropriate research approach is a major task of the research design process. The reason is that there is plethora of methodologies that can be selected from, or what might be called, the methodological pluralism (Galliers, 1994b). On the other hand, Orlikowski and Baroudi (1991) report that IS are not rooted in a single theoretical perspective, but there is a wide range of philosophical assumptions regarding the underlying nature of phenomena under investigation. Thus, there is a range of research approaches available to IS practitioners, not simply the more traditional ones with each research approach having its own strengths and weaknesses (Galliers, 1985).

Interpretive research aims at the “*understanding of the context of the information system and the process whereby the information system influences and is influenced by the context.*” Walsham (1993, p. 4). In interpretivism, researchers tend to allow concepts (constructs) to emerge from field data, rather than entering the field with pre-conceived theories (Glaser and Strauss, 1967, Miles and Huberman, 1994). This issue was explained further (Walsham, 1995a) in reporting that whilst it is important to access existing theory in a particular subject domain, it is equally important not to assume that it represents final truth in that area.

## 4.2 Underlying Theory and Philosophical Assumptions

Considering the complexity surrounding the research under investigation, it is essential to comprehend the philosophical assumptions underpinning the appropriate approach selected. This is because it facilitates the development of a strong case to select a research approach (e.g. qualitative or quantitative) for a particular study (e.g. investigating tGovernment implementation). Several philosophical research approaches are available for IS research. Guba and Lincoln (1994) suggest four underlying ‘paradigms’ for qualitative research: (a) positivism (or scientific); (b) critical theory; (c) post-positivism and, (d) constructivism (or interpretivism). These approaches rely on different assumptions about the nature of knowledge, and demand different approaches to research, with Irani *et al.* (1999) having discussed their respective characteristics affirming also what Myers (1997) reports, namely, that while these research epistemologies are philosophically discrete, in the practice of social research these distinctions are not always so specific.

There is considerable disagreement as to whether these research paradigms or underlying epistemologies are necessarily opposed, and there is further debate about whether they can be accommodated within one study (Myers, 1997). Evidence from literature reports that among all, positivism has been the dominant epistemology in IS research (Miles and Huberman, 1994; Yin, 1994). Orlikowski and Baroudi (1991) suggest that IS research can be classified as positivist if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and drawing of inferences about a phenomenon from a perspective sample to a stated population. Galliers (1992) also reports that positivism assumes that observations of phenomena under investigation can be made objectively and rigorously (by measurement). Nonetheless, positivism approach has arisen from scientific tradition and thus, is characterised by repeatability, reductionism and refutability.

IS research can be classified as critical if the main task is seen as being one of a social critique, whereby the restrictive and alienating conditions of the status quo are brought to light (Hirschheim *et al.*, 1995). Critical research assumes that social reality is historically constituted, and that it is produced and reproduced by people. Myers (1997) asserts that although people can consciously act to change their social and economic circumstance, critical practitioners recognise that their ability to do so is constrained by various forms of social, cultural and political domination. It is also important to mention here the post-

positivist approach that is positioned between positivism and critical theory in the literature, as it has been introduced as a need to change direction from positivism and to transcend its limitations (Lincoln and Guba, 2000). Post-positivism challenges the tradition that knowledge is actually apodictic, instead knowledge claims are simply those accepted by the community. Therefore, from a methodological stance, an interesting part of post-positivist thought is its belief in what might be termed “methodological pluralism” – the claim that there is no one correct method of science, but many methods (Galliers, 1992).

Literature indicates that positivism, critical and post-positivist are not the only relevant approaches to IS. An alternative to positivism, critical and post-positivist is interpretivism. Interpretivism assumes that the knowledge of reality is gained only through social constructions such as consciousness, shared meanings, language, documents, tools and other artefacts. The philosophical base on interpretive research is hermeneutics and phenomenology. Saunders *et al.* (2002) and Ritchie and Lewis (2003) report that the phenomenological philosophy of the social world of business and management is too difficult to be theorised by definite laws similar to physical sciences, and would reveal the details of the situation to comprehend the reality, or perhaps a reality working behind them. Hermeneutics can be treated as both an underlying philosophy and a specific mode of analysis (Bleicher, 1980). As a philosophical approach to human understanding, it provides the philosophical grounding for interpretivism, whereas, as a mode of analysis, it suggests a way of understanding textual data. Interpretive studies are mainly conducted in an endeavour to understand phenomena through the meanings that people assign to them.

According to Kaplan and Maxwell (1994), interpretivism research does not predefine dependent and independent variables but focuses on the complexity of human sense as the situation emerges. Walsham (1993) further explains that interpretivism research aims at the “understanding of the context of the IS and the process whereby the IS influences and is influenced by the context”. In interpretivism, practitioners tend to allow factors (concepts) to emerge from field data, rather than entering the field with pre-conceived theories (Glaser and Strauss, 1967; Miles and Huberman, 1994). Further explanation on this issue (Walsham, 1995a) reporting that whilst it is important to access existing theory in a particular subject domain, it is equally important not to assume that it represents final truth in that area.

### 4.3 Selecting Interpretive Research Approach

The interpretive approach has been selected as an appropriate underlying research assumption for investigating tGovernment implementation and adoption in Dubai. The reasons for this choice are threefold.

- Acquiring background knowledge, literature review and analysis presented in Chapters 1, 2 and 3 indicates there are several organisational, institutional pressures, financial and technological issues related to transformational government. These issues appear to be complex and interrelated. According to Wood-Harper and Wood (2005) there is continuing uncertainty over exactly how to study the complex, emerging interrelationship between technology and the social context within which it is both developed and used. Thus, the study of investigating transformational government and the style of leadership may not therefore be easily separated from its organisational, institutional pressures, financial and technological context. In addition, understanding the importance of leadership through the lens of those outlined theories (System Thinking, Stakeholders, Institutional and Structuration) within the identified gap leading to transformation. For the rationale of enhancing the strategic decision making process while navigating through the complexity domain in moving from eGovernment to tGovernment. Moreover, assist this research in providing a critical global view for those themes through empirical results.
- According to the analysis of tGovernment overview and analysis reported in Chapters 1 and literature review in Chapter 2, it is in some respect that public sector organisations are a different entity of organisations in comparison to private sector organisations. The characteristics of government departments mean that human actions and behaviour within them is different from other sectors. Moore and Read (2006) claim that practitioners need to adopt an approach that allows them to get close to participants, penetrate their internal logic, and interpret their subjective understanding of reality, especially when there are considerable differences between different sectors (Peppard and Ward, 2004).

- As the societal world cannot be reduced to isolated elements, it must be observed in its entirety and natural environment. According to the literature, findings produced by positivist approaches are generalised only to the extent that the conditions under which data are collected exist in the social world (Shaw, 1999). Therefore, it is argued that to investigate transformational government implementation and adoption in public sector organisations, there is a need for a research approach that may allow government agencies to be viewed in their entirety and which permits practitioners to get close to participants, penetrate their realities, and interpret their perceptions. Interpretive research is therefore considered to be more appropriate for the research reported in this thesis for the reasons explained.

Having justified the use interpretive research approach, Section 4.4 describes the nature of the qualitative research approach.

#### **4.4 Justifying the Use of Qualitative Research Method**

Qualitative research can be described as a type of research that involves interpreting non-numerical data (Miles and Huberman, 1994). For example, Van (1983) reports that qualitative method is an array of interpretive techniques which seek to describe, decode, translate and otherwise come to terms with the meaning, not the frequency of certain more or less naturally occurring phenomena in the social world. It was further proposed (Denzin and Lincoln, 1994) that qualitative research is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. These definitions here imply that the qualitative practitioners study things in their natural surroundings, and they comprehend events in terms of their real meanings. Furthermore, Holloway and Todres (2003) stress that qualitative approaches are incredibly diverse, complex and nuanced.

Literature indicates that the term ‘interpretive’ research is frequently used interchangeably with ‘qualitative’ research (Galliers, 1992). Adding further Hakim (1992) that qualitative research tends to be used most heavily in disciplines where the emphasis is on description and explanation (such as psychology, sociology and social anthropology), rather than on prediction (as in economics). However, some researchers such as Denzin and Lincoln (1994) support qualitative research as cross-cutting disciplines, fields and subject matter. There are a number of concepts, traditions and assumptions related to qualitative research. These include

traditions such as positivism, post-positivism, and many perspectives and methods connected to cultural and interpretive studies.

Myers (1997) strongly supports the view that qualitative research may or may not be interpretive, depending upon the underlying philosophical assumptions of the research, adding further the suggestion that qualitative research can be positivist, interpretive, or critical. In order to gain a clear understanding of qualitative research, it is necessary to compare its basic purpose and focus to those of quantitative research. The differences as reported in Table 4.1 mainly result from the positivist perspective of quantitative research (the belief that the world can be measured, understood, and generalised about) versus the non-positivist perspective of qualitative research (i.e. the belief that the world cannot be generalised about).



| Research Approach   | References  | Research Approach   | References                                      |
|---|---|---|---|
| <b>Quantitative</b> <ul style="list-style-type: none"> <li>Use of mathematical and statistical techniques to identify facts and causal relationships. Samples can be larger and representative. Results can be generalised to larger populations within known limits of error.</li> </ul> | Kaplan and Maxwell (1994); Lincoln and Gub (2000).                | <b>Qualitative</b> <ul style="list-style-type: none"> <li>Determining what things exist rather than how many there are. Thick description. Less structured and more respectful to needs and nature of research situations.</li> </ul>     | Bogdan and Taylor (1975); Nissen (1985).        |
| <b>Positivist</b> <ul style="list-style-type: none"> <li>Belief that the world conforms to fixed laws of causation. Complexity can be tackled by reductionism. Emphasis on objectivity, measurement and repeatability.</li> </ul>   | Hirschheim <i>et al.</i> (1995); Hirschheim <i>et al.</i> (1995). | <b>Interpretivist</b> <ul style="list-style-type: none"> <li>No universal truth. Understand and interpret from practitioner's own frame of reference. Uncommitted neutrality. Realism of context important.</li> </ul>                    | Bogdan and Taylor (1975).                       |
| <b>Confirmatory</b> <ul style="list-style-type: none"> <li>Concerned with hypothesis testing and theory verification. Tends to follow positivist, quantitative modes of research.</li> </ul>  | Ives and Olson (1984).  | <b>Exploratory</b> <ul style="list-style-type: none"> <li>Concerned with discovering patterns in research data and to explain/understand them. Lays basic descriptive foundation. May lead to generation of hypothesis.</li> </ul>        | Trauth and O'Connor (1991).                     |
| <b>Deduction</b> <ul style="list-style-type: none"> <li>Uses general results to ascribe properties to specific instances. Associated with theory verification and hypothesis testing</li> </ul>   | Popper (1963); Mintzberg (1979).                                  | <b>Induction</b> <ul style="list-style-type: none"> <li>Specific instances used to arrive at overall generalisations. Criticised by many philosophers of science but plays an important role in theory/ hypothesis conception.</li> </ul> | Popper (1963); Hirschheim <i>et al.</i> (1995). |
| <b>Laboratory</b> <ul style="list-style-type: none"> <li>Precise measurement and control of variables, but as expense of naturalness of situation, since real-world intensity and variation may not be achievable.</li> </ul>   | McGrath (1984).   | <b>Field</b> <ul style="list-style-type: none"> <li>Emphasis on realism of context in natural situation, but precision in control of variables and behaviour measurement cannot be achieved.</li> </ul>                                   | McGrath (1984); Van Horn (1973).                |

**Table 4.1: Differences in Qualitative and Quantitative Approach (Source: Kamal, 2008)**

Qualitative researchers value the deep understanding permitted by information-rich cases and quantitative practitioners value the generalisations to larger populations permitted by random and statistically representative samples. Determining an adequate sample size in qualitative research is ultimately a matter of judgment and experience in evaluating the quality of the

information collected against the uses to which it will be put the particular research method and sampling strategy employed, and the research product intended (Sandelowski, 1995).

The qualitative research approach is selected in this thesis since a main assumption of this approach is that qualitative practitioners study things in their natural settings, attempting to understand complex phenomena in terms of the meanings that people bring to them (Denzin and Lincoln, 1994). The qualitative paradigm recommends that practitioners observe human behaviour and action as it occurs in mundane everyday life (Schutz, 1967). The research presented in this thesis focuses on tGovernment implementation and adoption in government authorities. As reported in previous section that the study of human actions and behaviour in government agencies is distinct from other sectors Therefore, the principle of scientific methods, e.g. quantitative methods applied to the study of people, is questioned, and hence a qualitative approach is suggested. Additionally, Marshall and Rossman (1999) have reviewed several research studies that are related to qualitative research method and what would it be appropriate for. Some of those examples of similar types that also correspond to the requirements of the current research (transformational government) are detailed below:

- Research for which related (a) adoption lifecycle phases, (c) categories and themes highlighting the importance of factors that have to be identified;
- Research that examines in-depth complexities and processes;
- Research on less acknowledged phenomenon i.e. eGovernment evolution leading to transformation;
- Allows practitioner considerable flexibility during interviews, observations and documents analysis;
- Research that cannot be carried out experimentally for the practical or ethical reasons;
- Research on informal and unstructured linkages and processes in organisations;
- Practitioner can study tGovernment in a natural setting (different government authorities) and generate theories from empirical studies and practice.

Remenyi and Williams (1996) suggest that when an area of science is involved with human and organisational idiosyncrasies, qualitative research methods should be used. Irani (1998) supports this argument by further indicating that events which form a phenomenon are

conditioned by interacting variables, such as time and culture. This denotes that no two situations are identical. The type/nature of tGovernment in the research described in this thesis is more concerned with the variability that is inherent in human behaviour. The research presented in this thesis focuses on the factors influencing the decision-making of human beings (e.g. senior managers, director of services, head of IT, project managers, systems developers etc.) while implementing tGovernment.

As a result, the principle of scientific methods to the study of people suggests the suitability of a more qualitative approach. It appears from the objectives of this thesis, that the issues under investigation are confidential and subjective, with much context to the data needed. This suggests that the selected research methods must be able to take account of those issues and recognize that many management decisions are idiosyncratic and therefore guided by circumstances that is pertaining the organisation. The use of qualitative research methods allows for an in depth examining of those processes.

#### **4.5 Selecting an Appropriate Research Strategy**

The most used strategies include; case study, survey, experiment, grounded theory, field study, action research, longitudinal studies, ethnography, exploratory, descriptive, and explanatory studies (Cavaye, 1996; Saunders *et al.*, 2002). This is further characterised by Yin (1994) who believes that in choosing and/or differentiating between research strategies, three criteria must be looked at carefully; (a) the type of the research question(s) posed, (b) the extent of control the practitioner on actual behavioural events, and (c) the extent of focus on present events, in comparison to historical events. In the context of the present research, the following section justifies the appropriateness of case study based research strategy.

##### *4.5.1 Justifying the Use of Case Study Research*

Case study research is an influential research strategy in the IS research community (Galliers, 1992; Hirschheim *et al.*, 1995; Orlikowski and Baroudi, 1991), particularly in the development of new theory and theory testing (Benbasat *et al.*, 1987; Yin, 1994). In addition, case study research has also been a common research strategy in other disciplines such as

psychology, sociology, political science, business, community planning and economics research (Ghauri and Grønhaug, 2002). Yin (2009) and Cavaye (1996) state that in all disciplines the distinctive need for case study research represents a way to systematise observation and aims for in-depth understanding of complex social phenomenon. The term ‘case study research’ is not a monolithic one, in fact this research strategy is versatile and open to a lots of variation, and can be carried out taking a: (a) positivism, interpretivism and or critical stance; (b) can take deductive or inductive approach; (c) can use qualitative or quantitative methods and, (d) can investigate single or multiple cases, depending upon the underlying philosophical assumptions taken in this research(Myers and Avison, 2002).

Yin (2009) suggests that a case study is an intensive examination of a phenomenon in its natural setting, employing multiple methods of data to gather information from one or more entities (e.g. people, groups). Data is collected via interviews, observation, and questionnaires and written materials. Cavaye (1996) further explains that case study research can be highly structured, positivist, deductive investigation of multiple cases; it can also be an unstructured, interpretive, inductive investigation of one case study; lastly, it can be anything in between these two extremes in almost any combination. All such explanation signify that case study based research can be employed in a number of ways however; may lead to different research output.

Saunders *et al.* (2002) further describes exploratory studies as a valuable means of finding out what is happening; to search for new insights; to pose questions and to assess phenomenon. This is achieved through a literature search, interacting and discussing with experts in the subject, or conducting focus group interviews. Furthermore, explains that the aim of descriptive studies is to describe a precise profile of persons, events or situations, and is generally used as extension to explanatory research. Explanatory studies establish casual relationships between factors (Saunders *et al.*, 2002), and are employed in quantitative studies where data is subjected to statistical tests such as correlations. Yin (2009) also adding that there are different case study types such as exploratory, descriptive and explanatory depending on whether they are used to answer what, how, and why research questions.

Based on this taxonomy, the case study approach adopted in this research can be classified as exploratory. The reason is that the research focuses more on questions of ‘what’ type (e.g. what are the factors/themes that influence or characterised the evolution process of transition

from eGovernment to tGovernment). Exploratory case studies as presented in this research are useful for theory building as they are valuable in developing and refining those fundamental concepts for further research. To substantiate this approach (Roethlisberger, 1977) reports that the case study research is distinctively appropriate for a selection of problems e.g. those in which research and theory are at their early formative stages, as the case of transformational government.

#### 4.5.2 Single and Multiple Case Study Research

Case studies can be single or multiple and the foremost decision whether to analyse one or multiple cases is a central one to case study design. Each case study can be holistic (e.g. single unit of analysis) or embedded (multiple unit of analysis). A single case study may enable this research to investigate a phenomenon in depth, getting close to the phenomenon, providing rich primary data and revealing its deep structure within the organisational context (Cavaye, 1996). In the context of this research, it may enable the research to develop a 'complete view' of the organisational idiosyncrasies and allow this research to investigate transition change from eGovernment to tGovernment. Nevertheless, a single case may not provide sufficient insight into the complex phenomenon of tGovernment. The reason is that most research efforts require multiple case studies, but single cases are only useful in specific instances. Accordingly, Yin (2009) suggests single case study is appropriate if:

- It is a *revelatory* case, i.e., it is a situation previously inaccessible to scientific investigation.
- It represents a *critical case* for testing a well-formulated theory.
- It is an *extreme* or *unique* case.

In order to clarify matter further Bonoma (1985) claims that single case study projects are most useful at the outset of theory generation and late in theory testing, which is clearly not the case for this research. A further clarification by Benbasat *et al.*, (1987) who suggest a single case used for exploration may be followed by a multiple case study. Therefore, in the light of those characteristics of this research, a single case study may not be appropriate. Instead of a single case study approach, the research carried out and described in this thesis

argues that multiple cases is more appropriate. Conducting multiple cases, it is hoped, would enable this research to examine and ‘cross-check’ the findings. Also, the analysis of data across case organisations may be possible with this strategy (Cavaye, 1996).

Multiple cases may provide the research with a more ‘robust and credible’ investigation of causes and effects in relation of the units of analysis (Herriot and Firestone, 1983), as this may enable the investigation to move from one organisational context to another, thus isolating idiosyncrasies that contribute to explaining the phenomenon and the number of case studies that maybe conducted depend on how much is known about the phenomenon, and how much information that can be uncovered for conducting additional cases (Dyer *et al.*, 1991). In the context of this thesis, a multiple case study strategy has been adopted to study tGovernment implementation in government authorities.

Yet, inadequate sample sizes can undermine the credibility of research findings. Additional considerations in matching sample size to method are within-method diversity and the multiple uses of a method. Phenomenology offers a good illustration of how within-method diversity and the particular use to which a method is put can alter the requirements for sample size (Sandelowski, 1995). After a series of such studies has been completed, a larger synthesis of findings can be undertaken in which this research can more adequately address the question of whether and how leadership is important in understanding a transformational phenomenon.

#### **4.6 Empirical Research Methodology**

According to Rudestam and Newton (1992), one way of thinking about the phases of the research process is with reference to the so-called research wheel. The wheel metaphor suggests that research is not linear but a recursive cycle of steps that are repeated over the period of time, for the purpose of validating the empirical stages with the theory from where the theoretical concepts stems out. Flick (1998) also suggests that the usages of a set of procedures that are open-ended and rigorous at the same time are important of a qualitative research design. These procedures do justice to the complexity of the social setting under investigation. Jankowicz (2000) developed an empirical research methodology, which is also based on three stages, namely: (a) research design, (b) data collection, and (c) data analysis.

The analysis of the literature indicates that this research methodology phases are based on the following three stages of the qualitative research design: (a) warming-up and preparation, (b) stretching exercises, and (c) cooling-down (Janesick, 2000). Based on the research designs as aforesaid, this research has developed an empirical research methodology that acts as the blue print for the research process, to evaluate the proposed conceptual model (Figure 3.3) and the research issues related to tGovernment implementation and adoption in local government authorities.

#### *4.6.1 Research Design*

The first independent phase of the empirical research methodology is the research design. Essentially, it starts with acquiring background knowledge of the area under study, reviewing the literature and identifying the problem area. Literature review indicates several research issues. This leads to a specific research area and identifies a research need. Thereafter, a conceptual model is developed to represent the intended empirical research, and the aspects of the model will be investigated through empirical studies. As demonstrated in Figure 4.1, based on literature analysis, the development of a conceptual model is conducted to represent the intended empirical research. Some aspects of the model were investigated through empirical studies. Based on the needs of the empirical study, it was decided that the research design would utilise a multi-case study strategy through the employment of qualitative research methods. The research design was then transformed into a plan of action or protocol. This research protocols (action plans) are an essential investigation tool for various reasons, including:

- To ensure participants were given assurance regarding ethical considerations for data and information provided;
- To put the task of gathering the data in an understandable and manageable format;
- To ensure that all the required data is collected (irrelevant data can be discarded if not needed);
- To ensure that the research follows a specific schedule and meets the target dates;
- To track the path at which knowledge was developed; and,

- Acts as a map that others may follow to achieve similar conclusions. This is needed were the issues under investigation are subjective, and the research depends on qualitative methods.

Within the protocol, a qualitative research method was developed to gather data as required by the units of analysis. The method is in the form of an interview agenda (see AppendixB), which is a series of questions relating to the units of analysis, and designed to guide this research, during the unstructured interviews. In addition to the interviews, data was collected through several sources like archival documents, minutes for meetings, consultancy reports, and the website of the organisations. The use of multiple data collection methods makes the triangulation possible, which provides stronger substantiation of theory (Eisenhardt, 1989). The design for the research process for this study is presented in Figure 4.1.



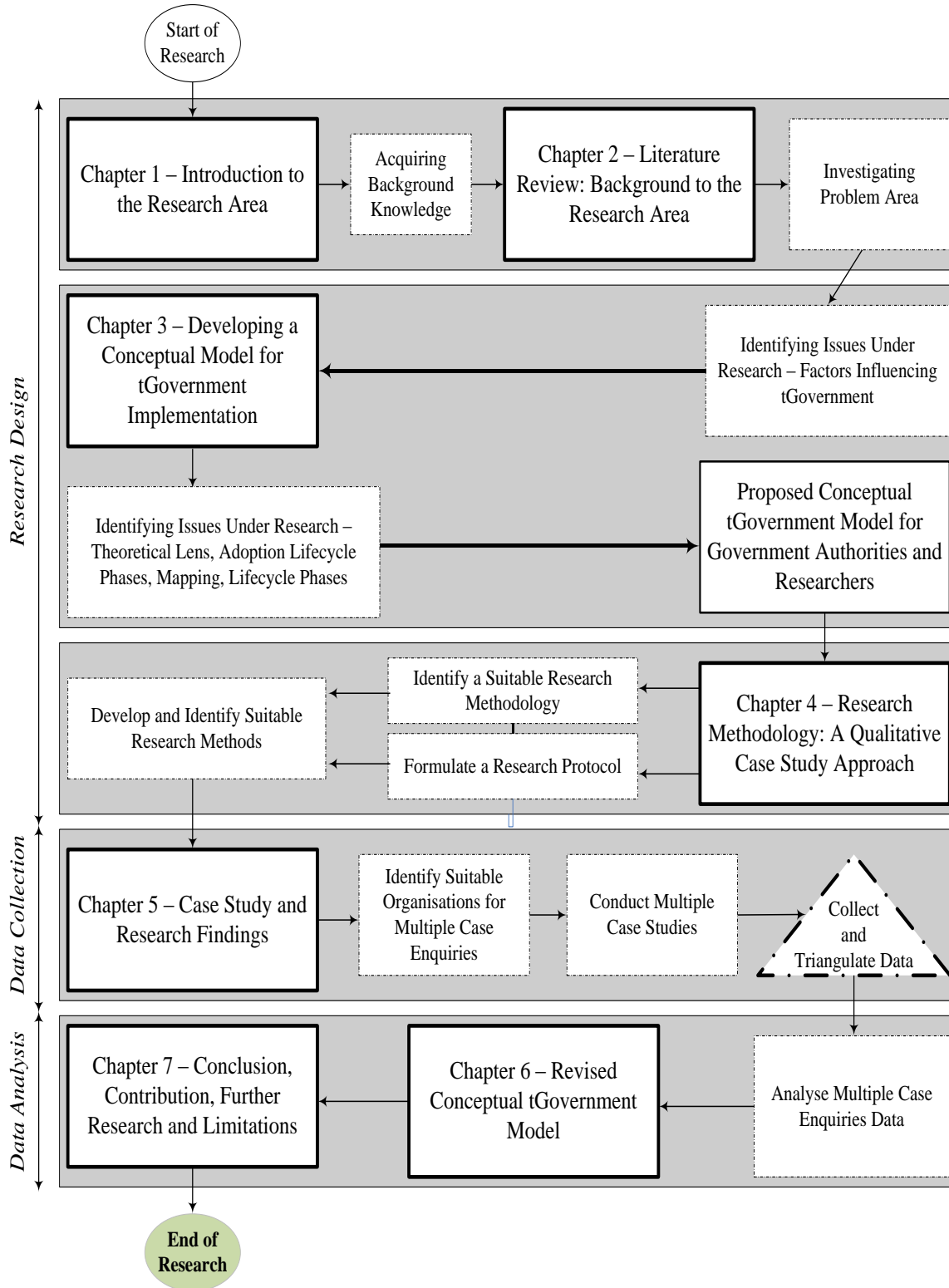


Figure 4.1: Empirical Research Framework Of The PhD Process

#### **4.7 Data Collection**

Yin (1994) identifies several sources of evidences used in case studies. These sources include: (a) documentation; (b) archival records; (c) interviews; (d) direct observation, (e) participant observation, and (f) physical artefacts. Table 4.2 summarises: (a) strengths; and weaknesses of the main sources of evidence in case studies (Yin, 1994) and, (b) provides examples of the use of these methods in this research.

Literature indicates that interviews allow the best access to the: (a) interpretations that the participants have regarding the actions and events, which have or are taking place and, (b) the views and aspirations of themselves and other participants (Walsham, 1995).

There are various types of interviews in existence that can be deployed. In categorising those types Denzin and Lincoln (1994) state that there are three major types namely: (a) structured; (b) semi structured and, (c) unstructured. Interviews can also be undertaken in various forms like personal interviews, face-to-face group interviewing, conducting telephone surveys etc. The duration of an interview is not specific, as it could last as a five minutes conversation on telephone, or it could take place over lengthy, multiple sessions.

In the context of this thesis, interviews constituted one of the main data source in the case organisations. At least four senior executive managers or officers in each organisation under investigation were interviewed using structured (and semi-structured or unstructured) interviews. Structured interviews were based on the interview agenda presented in (Appendix B). Using the interview agenda, the interviewees replied in specific questions regarding eGovernment implementation and adoption. Semi-structure interviews took place without the use of an interview agenda. Using this type of interviews this research attempted to clarify some issues that derived from structured interviews. All interviews (structured or semi-structured interviews) took place at interviewees' office. Unstructured interviews dealt with discussions that had been conducted with interviewees but without using a structured or semi-structured type of interview. The research had unstructured interviews during lunches, coffee breaks, and even out of office hours.

Semi-structured interviews are conducted with a fairly open framework which allow for focused, conversational, two-way communication. They can be used both to give and receive information. Unlike the questionnaire framework, where detailed questions are formulated

ahead of time, semi structured interviewing starts with more general questions or topics. Relevant topics are initially identified and the possible relationships between these topics become the basis for more specific questions, which do not need to be prepared in advance. Not all questions are designed and phrased ahead of time. The majority of questions are created during the interview, allowing both the interviewer and the person being interviewed the flexibility to probe for details or discuss issues. Semi-structured interviewing is guided only in the sense that some form of interview guide, such as the matrix described below is prepared beforehand, and provides a framework for the interview.

| Sources of Evidence     | Strengths  | Weaknesses  | Use of Sources in this Research   |
|-------------------------|--|---|---|
| <b>Documentation</b>    | <ul style="list-style-type: none"> <li>• Stable—can be reviewed repeatedly.</li> <li>• Unobtrusive – not created as a result of the case study.</li> <li>• Exact—contains exact names, references and details of the events.</li> <li>• Broad coverage—long span of time, many events and settings.</li> </ul> | <ul style="list-style-type: none"> <li>• Retrieving—can be low</li> <li>• Biased selectivity, if collection is incomplete.</li> <li>• Reporting bias-effects (unknown) bias of author.</li> <li>• Access—many be deliberately blocked.</li> </ul> | <ul style="list-style-type: none"> <li>• Reports from the case organisation under study.</li> <li>• Reference material from the relevant case organisation and other websites.</li> <li>• Newspaper and magazine articles.</li> </ul> |
| <b>Archival Records</b> | <ul style="list-style-type: none"> <li>• [Same as above for documentation]</li> </ul> Precise and quantitative   | <ul style="list-style-type: none"> <li>• [Same as above for documentation]</li> <li>• Accessibility due to privacy reasons</li> </ul>   | <ul style="list-style-type: none"> <li>• Deliverables on previous interconnectivity projects within the case organisation under study.</li> </ul> Case organisations records.   |
| <b>Interviews</b>       | <ul style="list-style-type: none"> <li>• Targeted—focuses directly on case study topic.</li> <li>• Insightful—provides perceived casual inferences.</li> </ul>   | <ul style="list-style-type: none"> <li>• Bias due to poorly constructed questions.</li> <li>• Response bias.</li> <li>• Inaccuracies due to poor recall.</li> <li>• Reflexivity—interviewee gives what interviewer wants to hear.</li> </ul>      | <ul style="list-style-type: none"> <li>• Structured interviews.</li> <li>• Semi-Structured interviews.</li> <li>• Unstructured interviews</li> </ul>  |

Table 4.2 (Continue next page)

| <b>Table 4.2-continue</b>      |   |   |   |
|--------------------------------|---|---|---|
| <b>Sources of Evidence</b>     | <b>Strengths</b>  | <b>Weaknesses</b>   | <b>Use of Sources in this Research</b>  |
| <b>Direct Observation</b>      | <ul style="list-style-type: none"> <li>• Reality-covers events in real-time.</li> <li>• Contextual-covers context of events.</li> </ul>                     | <ul style="list-style-type: none"> <li>• Time consuming.</li> <li>• Selectivity-unless broad coverage.</li> <li>• Reflexivity-event may proceed differently because it is being observed.</li> <li>• Cost-hours needed by human observers.</li> </ul> | <ul style="list-style-type: none"> <li>• Formal and informal meetings with the interviewees of the case organisation for gaining additional insight.</li> </ul> |
| <b>Participant Observation</b> | <ul style="list-style-type: none"> <li>• [Same as above for direct observation].</li> <li>• Insightful into interpersonal behaviour and motives.</li> </ul> | <ul style="list-style-type: none"> <li>• Same as above for direct observation].</li> <li>• Bias due to investigator's manipulation of events.</li> </ul>  | <ul style="list-style-type: none"> <li>• Simple participation.</li> </ul>   |
| <b>Physical Artifacts</b>      | <ul style="list-style-type: none"> <li>• Insightful into cultural features.</li> <li>• Insightful into technical operations.</li> </ul>                     | <ul style="list-style-type: none"> <li>• Selectivity.</li> <li>• Availability.</li> </ul>   | <ul style="list-style-type: none"> <li>• Hardware and software equipment.</li> </ul>  |

**Table 4.2: Six Sources Of Evidence: Strengths And Weaknesses And Their Appropriate Use In This Research (Source: Yin, 2009)**

In all the three case studies (at Dubai Municipality, Dubai Police and Dubai Naturalisation Department), interviewees selected for structured interviews included: (a) head of IT or ICT, (b) project manager and (c) government services, all of whom have been directly involved in the eGovernment projects. Such stakeholders had an important role during the decision making process for eGovernment implementation. Therefore, it was considered important to select a cross section of roles in the eGovernment projects to obtain the views of stakeholders at different levels in the organisations in order to have a better understanding of the phenomenon of eGovernment adoption. Some of the interviews were tape recorded and transcripts prepared as soon as possible after each individual interview. Others were confidential; only notes were taken which later followed up by emails and further meetings for data integrity. Tape recording supported this research in collecting data, specially allowing the interviewee to speak freely, and interpreting them without time pressures. The availability of interviewees was, in certain instances, a problem during the case studies, since

they were too busy and therefore, there was limited time for interviews. Taking notes during the interviews simply reduces the time of interviews since notes taking requires more time. But this approach has to be adopted considering the sensitivity of the cases. Thus, this research considered whenever possible, tape recording was used, as this is recognised as a more effective way of conducting interviews. The interview agenda summarised in detail in (Appendix B) focuses on collecting data from the following areas:

- **Section a – General Background:** This section attempts to collect general information related to the case organisations under study. Such data include for example: (a) the status of the case organisation in the overall government hierarchy, (b) organisational chart, (c) the citizen strength in their community; (d) the number of citizen queries faced; (e) the number of businesses faced on daily basis (for details see Appendix B).
- **Section b – General Interviewee Information:** This section covers the basic details of the interviewee such as their name, address details, age, position in the organisation etc (for details see Appendix B).
- **Section c – Discussions on tGovernment Adoption Factors:** This section aims at collecting the data related to the factors influencing tGovernment implementation. Data collected in this section (management and business information).

Such an interview agenda covers factors such as adoption lifecycle phases, and the importance of those factors influencing tGovernment implementation and adoption in public sector organisations on different phases of the adoption lifecycle.

#### **4.8 Data Analysis And Synthesis**

Data analysis is the third and final part of the empirical research methodology, as presented in Figure 4.1. Empirical data derived from the case studies were triangulated, and then were analysed to draw empirical conclusions. While the interview is the main data collection method in this research, so the data analysis involved examining the meaning of people's words and actions. Each comment provided by the interviewees was coded and cross-referenced to the proposed conceptual framework to enable analysis of all the factors across

organisations and interviewees. Some interviews were tape-recorded, transcribed in Arabic, and then translated into English prior to analysis. On average, analysis of about 30 pages of transcripts for the Dubai Municipality case organisation as a major one, 10 pages for the DNRD Immigration case study and none for the Dubai Police case study; since it is not allowed to tape or record interviews. These were subjected to detail analysis to support the classification and categorization, as well as to construct meaning from the data, as illustrated in the interview agenda description presented in Appendix B.

Interviews and field data were coded (observations and written material) by relying on established methods of handling qualitative data (Miles and Huberman, 1994). First, the researcher carried out a close reading of the observations, field notes, and written documents to sort out important from unimportant data not related data. Second, a closer look was considered necessary at the relations and contradictions within the data. Then sorting was carried out at identifying general themes and at categorising them along the questions that guided this research. Finally, the researcher reviewed those emergent themes for each transcript and was able to construct a storyline presenting the process of the tGovernment implementation at three levels: the organisational field level, the organisational/group level, and individual/socio-cognitive level.

Empirical data derived from case studies were triangulated and then analysed to draw empirical conclusions. During this study, data analysis has involved examining meaning of people's words and actions. Empirical evidence was then used to draw conclusions and resulted in the formulation of themes incorporated in a model for tGovernment implementation and adoption.

#### *4.8.1 Defining Themes and Thematic analysis*

A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set. As this is a qualitative analysis, there is no hard-and fast answer to the question of what proportion of your data set needs to display evidence of the theme for it to be considered a theme. So, practitioner judgement is necessary to determine what a theme is (Braun and Clarke, 2006).

Thematic analysis is used to analyze the data collected in this research. Braun and Clarke (2006) report, that in qualitative thematic analysis, the data is analysed following a step-by-step set of rules and procedures whereby the data is categorized into themes, which are carefully founded and revised within the analysis process. It is the first qualitative method of analysis that practitioners should deploy, as it provides core skills that will be useful for conducting many other forms of qualitative analysis. Indeed, Holloway and Todres (2003, p. 347) identify '*thematizing meanings*' as one of a few shared generic skills across qualitative analysis. For this reason, Boyatzis (1998) characterises it not as a specific method but as a tool to use across different methods. Similarly, Ryan and Bernard (2000) locate thematic coding as a process performed within 'major' analytic traditions (such as grounded theory), rather than a specific approach in its own right.

#### *4.8.2 Data Triangulation*

Validity and reliability of the empirical research findings is another vital issue that concerns all research, whether interpretive or any other. According to Denzin, (1978) the term that is related with such issues is that of triangulation as a means of validating the results. Denzin (1978) suggested that there are four types of triangulation namely: (a) data, (b) investigator, (c) theory and, (d) methodological, whereas Janesick (2000) added a fifth type called interdisciplinary triangulation. Data triangulation means the use of variety of data sources in a study (Denzin, 1978). The second type of triangulation is the investigator triangulation, which is the use of several different practitioners or evaluators (Janesick, 2000). Theory triangulation refers to the use of multiple theoretical perspectives to interpret a single set of data (Denzin, 1978). Methodological triangulation means the use of multiple methods to study a single problem. Finally, interdisciplinary triangulation is related with the investigation of issues related with more than one disciplines (Janesick, 2000). From these definitions, it can be concluded that data, methodological and interdisciplinary triangulation are being used in this research and these results are summarised in Table 4.3.



| <b>Government Authority</b>                                 | <b>Type of Triangulation Applied</b> | <b>Sources</b>  |  |
|---|--------------------------------------|---|--|
| <b>Dubai Municipality (DM)</b>                              | Data                                 | <ul style="list-style-type: none"> <li>• Reports,</li> <li>• White papers</li> <li>• Interviews</li> </ul>          | <ul style="list-style-type: none"> <li>• Deliverables</li> <li>• Organisational records</li> <li>• Observations</li> </ul> |
|   | Methodological                       | <ul style="list-style-type: none"> <li>• Documentation</li> <li>• Archival records</li> <li>• Interviews</li> </ul> | <ul style="list-style-type: none"> <li>• Observations</li> <li>• Physical entity</li> </ul>                                |
|   | Interdisciplinary                    | <ul style="list-style-type: none"> <li>• Information Systems</li> </ul>   | <ul style="list-style-type: none"> <li>• Management</li> <li>• Culture</li> </ul>  |
| <b>Dubai Police (DP)</b>                                    | Data                                 | <ul style="list-style-type: none"> <li>• Reports,</li> <li>• White papers</li> <li>• Interviews</li> </ul>          | <ul style="list-style-type: none"> <li>• Deliverables</li> <li>• Organisational records</li> <li>• Observations</li> </ul> |
|   | Methodological                       | <ul style="list-style-type: none"> <li>• Documentation</li> <li>• Archival records</li> <li>• Interviews</li> </ul> | <ul style="list-style-type: none"> <li>• Observations</li> <li>• Physical entity</li> </ul>                                |
|   | Interdisciplinary                    | <ul style="list-style-type: none"> <li>• Information Systems</li> </ul>   | <ul style="list-style-type: none"> <li>• Management</li> <li>• Culture</li> </ul>  |
| <b>Dubai Naturalisation and Residents Department (DNRD)</b> | Data                                 | <ul style="list-style-type: none"> <li>• Reports,</li> <li>• White papers</li> <li>• Interviews</li> </ul>          | <ul style="list-style-type: none"> <li>• Deliverables</li> <li>• Organisational records</li> <li>• Observations</li> </ul> |
|   | Methodological                       | <ul style="list-style-type: none"> <li>• Documentation</li> <li>• Archival records</li> <li>• Interviews</li> </ul> | <ul style="list-style-type: none"> <li>• Observations</li> <li>• Physical entity</li> </ul>                                |
|   | Interdisciplinary                    | <ul style="list-style-type: none"> <li>• Information Systems</li> </ul>   | <ul style="list-style-type: none"> <li>• Management</li> <li>• Culture</li> </ul>  |

**Table 4.3: Types Of Triangulation Used In This Research**

Initially, questions relating to the role of individuals, organisational background and general facts about the project were asked. These questions were open-ended, as the practitioner wanted to obtain as much information as possible and not limiting the respondent in any way. In some cases this has led interviewees to report issues that had not taken into consideration by this research (e.g. support factors) during the designing of interview-agenda.

### 4.8.3 Research Credibility

A common concern about any research is its degree of credibility (Krathwohl, 1997). The credibility of any research is usually based on the validity and reliability of the research findings, as well as the findings' capability of providing basis for scientific generalisation, if necessary, based on the three concepts developed by Krathwohl (1997) as shown in the table 4.4.below.

| Credibility Concept    | Related Questions   |
|------------------------|---|
| <b>Validity</b>        | <ul style="list-style-type: none"> <li>• Does an instrument measure what is supposed to measure?</li> </ul>   |
| <b>Reliability</b>     | <ul style="list-style-type: none"> <li>• Will the measure yield the same results on different occasions (assuming no real change in what is to be measured)?</li> </ul>                     |
| <b>Generalisations</b> | <ul style="list-style-type: none"> <li>• What is the probability that patterns observed in a sample will also be present in the wider population from which the sample is drawn?</li> </ul> |

**Table 4.4: Types Of Questions Used In This Research Based On The Concepts Of Validity, Reliability And Generalisations (Source: Krathwohl, 1997)**

One of the major advantages of the case study approach, adopted in this research, is its capability to support research validity and reliability through the methodological pluralism concept that emphasizes the use of multiple methods of measures (Hirschheim *et al.*, 1995); such an approach is also known by most research as triangulation. According to Janesick (2000) there are five types of triangulation, namely data, investigator, theory, methodological and interdisciplinary triangulation. Table 4.5 highlights the four types of triangulation applied in the present research. Furthermore, as discussed in Chapter 5, to ensure the validity and reliability of the research findings, all of the construct's measures used in the present research are drawn with cross referencing to literature where they are reported reliable measures to the construct they suppose to assess.

| <b>Triangulation Type</b>              | <b>Description</b>   | <b>Application in the current Research</b>   |
|--|--|--|
| <b>Data Triangulation</b>              | The use of variety of data sources in a study  | Data is collected through different sources, such as: <ul style="list-style-type: none"> <li>• Three case studies</li> <li>• Literature review</li> <li>• Secondary data</li> </ul>  |
| <b>Theory Triangulation</b>            | The use of multiple theoretical perspectives to act as a lens in order to interpret a single set of data | Stakeholder Theory, System Thinking Theory, Institutional Theory human and Structuration Theory where all theories are combined to study the strategic leadership role on transformational government.   |
| <b>Methodological Triangulation</b>    | The use of multiple methods to study a single problem  | Various data gathering techniques are used such as: <ul style="list-style-type: none"> <li>• Semi-structured interviews</li> <li>• Unstructured interviews</li> </ul> Various data analysis techniques are used such as: <ul style="list-style-type: none"> <li>• Thematic Analysis</li> </ul> |
| <b>Multidisciplinary Triangulation</b> | The use of investigation of issues related to more than one discipline                                   | This thesis is multidisciplinary in nature where it constitutes a hybrid research in the field of organisational change, strategic management, ICT innovation and eGovernment. The research is built on investigation of methods and approaches from these three disciplines.                  |

**Table 4.5: Types Of Triangulation And Their Application In The Research**

#### 4.9 Case Study Protocol: An Operational Action Plan

In studies where the empirical inquiry is subjective and based on irregular data collecting tools, then, this research discusses the importance of having a case study protocol, as a scientific path of the research that needs to be developed to allow other research to follow the same pathway of data collected, and ultimately, conclusions can be derived. As such, the case study protocol represents an official document that an investigator uses to schedule data gathering dates, to specify the means by which it will be gathered, and to detail the objectives and procedures of the analysis. Yin (2009) describes a case study protocol as a tool that would make research operational, acting as an action plan, and setting rules and regulations by which data would be gathered. The protocol acts as a data collection tool, where data are derived from case studies.

A set of interview questions were developed prior to the empirical enquiry (Appendix B). The questions were broad and aiming at open answers, following the intent of the research questions. Yin (2009) proposes that case studies may have questions at five levels as presented in Table 4.6. Adding to this further, that a case study protocol will outline: (a) the case study overview, (b) fieldwork research procedures, (c) questions addressed by the research, and, (d) the research output format. As such this research will adopt the outline suggested by Yin (1994), and this chapter will address level 1, 2 and 3 questions, with other parts of the research addressing the remaining level of questions.

| Question Level | Research Questions  |
|----------------|---|
| Level 1        | Questions asked of specific interviewees.   |
| Level 2        | Questions asked of an individual case study.                                      |
| Level 3        | Questions asked across multiple case studies.                                     |
| Level 4        | Questions asked of entire study   |
| Level 5        | Questions about the recommendations and conclusions beyond the scope of the study |

**Table 4.6: Questioning Levels In A Multiple Case Enquiry (Source: Yin, 2009)**

#### *4.9.1 Case Study Overview*

It is suggested that it is not the intention of this research to offer prescriptive guidelines to tGovernment adoption but rather, describe case study perspectives that allow other practitioners to relate their experiences to those reported findings. Hence, this thesis offers a broader understanding of the phenomenon of tGovernment adoption in public organisations. In the section of the case study protocol, the research issues under investigation are detailed, to assist the practitioner in focusing on the main questions that need to be studied. These are factors, adoption lifecycle phases, and the importance of factors on different phases of the adoption lifecycle that this research needs to focus on, to generate data that is required to investigate tGovernment adoption. The consideration of these issues are crucial, to retain focus during the interviews. These issues are the following:

- To identify the tGovernment adoption decision-making process used by the case study organizations and leadership challenges facing them,
- To identify organisational, technological, support, pressure, and financial factors associated with tGovernment adoption,
- To identify the phases of the adoption lifecycle and how each factor may influence tGovernment adoption in government agencies on different phases of the eGovernment adoption lifecycle,
- To identify the suitability of these factors for inclusion in a conceptual model for tGovernment implementation and adoption in public organisations.

#### *4.9.2 Fieldwork Research Procedures*

In conducting a case study research, Yin, (2009) reports that the fieldwork research procedures should be properly designed, since in this research will be collecting data from people and organisations in their everyday situations i.e. natural (real-life) setting, not within a laboratory, or through a rigid questionnaire. This means that this research needs to take into consideration and cope with 'real world' events such as respondents for interviews not willing to participate, documents related to the project not being available on time etc. It is understandable that the appointments with interviewees will be scheduled before time, and

documents can be requested ahead of time, but this cannot be guaranteed in practice. Furthermore, interruptions during the interviews are expected, and documents may not be available, but that should not stop the practitioner from data collection. Thus, a fieldwork research procedure needs to be designed to deal with such events. This section of the protocol presents those procedures that will be employed during the multi-cases study investigation. These procedures are: (a) to identify case organisations that have adopted tGovernment, (b) to identify which and how many respondent within the organisation needs to be interviewed, (c) identify appropriate data gathering research methods and establish line of inquiry, (d) develop an interview schedule and (e) discussed on the confidentiality of the information provided and identity of the case organisation.

#### **4.10 Research Issues Addressed and Output Format**

The questions are set for the practitioner and not for the interviewees and act as a reminder for the interviewee, concerning the data. Interviewees are not exposed to these questions, but were used for consultation before and during the interviews to maintain some form of structure to the interview. Four issues are developed to be asked from interviewee. The following Table 4.7 summarises these research issues and their relevant description.

| <b>Proposed Research Issues and their Relevant Questions for Further Investigation</b> |   |
|--|---|
| <b>Research Issues</b>   | <b>Description</b>  |
| <b>tGovernment Adoption Factors</b>  | <ul style="list-style-type: none"> <li>• What are the factors that influence the decision-making process for tGovernment adoption in government organisations?</li> </ul> |
| <b>Lifecycle Phases</b>  | <ul style="list-style-type: none"> <li>• What are the different phases for tGovernment implementation process?</li> </ul>   |
| <b>Evaluating Factors</b>  | <ul style="list-style-type: none"> <li>• What factors influence tGovernment implementation and adoption at the transition stage to tGovernment?</li> </ul>                |
| <b>Importance of Factors</b>   | <ul style="list-style-type: none"> <li>• What is the important of those factors in the adoption lifecycle for tGovernment implementation process?</li> </ul>              |

**Table 4.7: Research Issues Addressed By The Empirical Inquiry**

This research addressed issues associated with large amounts of data likely to be generated through aligning each question within the interview agenda (Appendix B).

#### **4.11 Conclusions**

A rationale for the use of an appropriate research methodology for this thesis was proposed and the research methodology described. A discussion of the epistemological stances and their suitability was provided. Justification was provided for the use of an interpretive stance for the research presented in this thesis. Quantitative and qualitative research approaches were discussed, and reasons given as to why these were selected. Such reasons include that qualitative approach can be used to: (a) investigate little known phenomena like tGovernment adoption in government agencies; (b) examine in depth complex processes (tGovernment adoption); (c) examine the phenomenon in its natural setting and, (d) learn from practice.

This chapter further discusses the research credibility issue, through elaboration on the triangulation used in the research. Several types of triangulation, including data, theory, methodological and multidisciplinary triangulation, were used. The types of research strategies that are available and reasons for selecting particular ones were provided. The use of case study strategy in this research was justified and explained. Multiple case studies are

used within this research to explore and understand the phenomenon of tGovernment adoption. The use of research methods was outlined and discussed and arguments for the suitability of particular methods were provided. Data collection methods used in this research are: (a) interviews, (b) documentation, (c) observation, (d) archival records and physical artefacts. The empirical research methodology is reported as well as data triangulation and the the case study protocol used.

Finally, the chapter justified the design of the transformational leadership case study approach adopted for this thesis. In the next chapter, chapter 5, a detailed description and analysis of the three exploratory case studies of this research is presented. The findings of these investigational studies, together with the suggestions reported from relevant literature, led to raising research revised model and framework. Subsequently, the design of research revised conceptual model is discussed in chapter 6.



## Chapter 5: Case Study and Research Findings

### Summary

In chapter 4, this research justified the research methodology adopted in this thesis. This chapter applies the selected research methodology to validate the proposed conceptual model (Figure 3.3) for transformational government implementation and adoption in a developing country context, such as the United Arab Emirates (UAE). In doing so, the research presents and analyses the empirical data collected from three identified government authorities within Dubai Government in the UAE, namely Dubai Municipality (DM), Dubai Naturalisation and Residency Department (DNRD) and Dubai Police (DP). This research covers three case organisations, as this was found to provide sufficient information (i.e. one major project within the first case organisation and several projects each within the other two case organisations) that assisted the practitioner in justifying the research presented in this thesis. It was considered satisfactory as selecting of a fourth case organisation would have given marginal benefits to the conclusion of this work. However, as discussed at the end of this chapter, this was seen to be unlikely. The objective was to present the preliminary research findings obtained while observing phenomena in the organisational settings.

The data collected are used to analyses: (a) the proposed conceptual model for transformation key enablers (Figure 3.3), (b) the evolutions phases from Domain I- eGovernment to Domain II-tGovernment in crossing what this research termed the 'eChasm' (Figure 3.2). Nonetheless, the analysis of the empirical data should not be seen as a comparison among different cases. Instead, this chapter offers an empirical analysis of different case study perspectives that describes human and organisational behaviour and perceptions during the

implementation and concerned agencies adoption of eGovernment leading to transformation. Consequently, rather than generalising the results of these reported cases, this research proposes to examine each case in its own right by describing respective approaches to eGovernment implementation that is resulting in tGovernment adoption. In doing so, allowing other practitioners to draw similarities and constructs in the outcome.

This chapter commences by providing background to the establishment of eGovernment in the UAE, in general, and Dubai in particular. The chapter then moves to a detailed presentation of the three case organisations namely DM, DNRD and DP. The empirical results and themes as well as sub-themes derived from the case organisations have confirmed the validity of key factors within the conceptual model presented in Chapter 3.

### **5.1 Historical background of eGovernment from a UAE perspective**

Government authorities in the UAE, as with other governments around the world, provide direct support to meet a diverse range of citizens and businesses need including housing, social services, education, company licenses, visas and the management of a complex service infrastructure that supports the wider communities and businesses. The diversity of the local government domain can be traced to a complex legacy of institutional and political arrangements within which the local public services, as in the UK (e.g. social services) are embedded and within which they need to evolve. Traditionally government agencies have been responsive to the needs of their citizens through the process of democratic accountability; as they continue to exist through the consent of elected representatives in parliament. However, as central government in different government model setting, in this case the Emirate of Abu Dhabi, cannot directly exercise control over local services in an effective way, local governments, which has its own ruler as well, and municipalities have come to provide a range of services which include three most important functions of: security and safety (e.g. police service, fire services, etc), welfare (e.g. personal social services, residents visas etc), and business services (e.g. building licenses), convenience (e.g., parks management, recreation management, collection of refuse etc.). Historically, these functional services emerged in response to requirements of accountability to the localities in which they existed, and in some respect the initial autonomous of Dubai Government. Their provision, in

line with federal government guidance, required the need to adopt services in different ways to different localities.

The history of government authorities therefore reflects the need to respond to special situations. For example, during the late nineteenth century and with the discovery of oil, the focus on urban areas was on 'infrastructure improvement' with the desire to transform the quality of life of UAE citizens as well as the consideration of the urban population. Influenced by social, economic and political changes in the late nineteenth century dramatic changes to the structure of government authorities began to occur. This illustrates that whilst being a significant part of the UAE public sector; government authorities, as the next section illustrates, that Dubai is independent in some respect from central government and most its authorities have long histories with considerable autonomy under a variety of governance arrangements. The result is that each Emirate, which makes up the UAE which is united as early as 1971, has developed its own organisational, bureaucratic and more recently own web solutions to match their domestic needs. It is not surprising that government authorities display enormous variations in the way that their processes to provide public services are implemented. This variety presents a unique and potential challenge for providing government services electronically as reported in the literature (Johnson and King, 2005).

If we take for example a developed country, where over the past two decades, the transformation and reform of government services has been a key feature of the political programs of the UK Government (Johnson and King, 2005; Kamal, 2004). The UK Government's Modernisation and Improvement agenda aims to develop government agencies that are more dynamic, entrepreneurial, efficient, effective and in touch with their citizens (Newman *et al.*, 2001). For example, total spend on eGovernment was £12.2 billion in 2003/4 of which £2.9 billion was by local authorities (KableNet, 2005). This spending on eGovernment by government authorities has been largely under the auspices and leadership of the Office of the Deputy Prime Minister (ODPM), which believes that eGovernment is indeed helping to transform government authorities the quality of local services making them 'more accessible, convenient, responsive, and cost-effective' (ODPM, 2002). This level of senior executive support and visionary leadership from the ODPM funded a range of innovative projects to explore many of the practical aspects of eGovernment under the Pathfinder and National Projects program. However, the primary mechanism for controlling the investment in eGovernment has been based on linking funding to each local authority

self-completed declarations of progress towards a target of becoming '100% e-enabled'. Due to the deadline, the definition was modified to '100% capability in electronic delivery of priority services' (ODPM, 2004) and there was a growing recognition even if technical compliance with the targets is achieved this will be insufficient to deliver the deeper process of transformations that are at the heart of the eGovernment agenda.

The UAE Government authorities, where eGovernment agendas is set to be focused more clearly on carefully designed approaches that will deliver a more complex set of outcomes. This is to help in moving beyond information provision through websites to enable citizens to interact and transact with government agencies via multiple channels. The government's strategy unit appears to recognise the need for a paradigm shift in eGovernment thinking – noting limited government services are available electronically but that beyond this there is a need to set out a robust strategy for the transformation of the delivery of key public services. In the UK for example, these strategic views are echoed in the influential Independent Review of Public Sector Efficiency (Gershon, 2005), which recommends that: (a) there is a need for reinforcement of planning and implementation processes to achieve high levels of adoption of electronically enabled transformational services and (b) there needs to be a stronger focus on the delivery of services.

There appears to be recognition at international and national level that the major benefits of eGovernment will only be realised when it matures to include deeper and more radical process transformation – moving from a legacy of bureaucratic delivery mechanisms to faster, simpler and more flexible technology-facilitated delivery processes. In this respect, the UAE which is playing a crucial part of the global economy recognised the benefit of transformation. This is fully realising that it involves a deeper understanding of the organisational, human, process-oriented and technical challenges involved in the successful process transformation than has so far been evident.

There is a wide range of reasons of why governments around the world want to go digital. Each government has its own agenda for implementing eGovernment. In looking at various statements and definitions of those countries it can be seen why some they see a need to establish a digital economy. As a point in case, the United Arab Emirates in general and the government of Dubai in particular has embarked on a modernization program that has never been witnessed before. In a dialogue with the nation outlining his strategic ambitious plan and

what he is aiming to achieve (Alnaqi, 2004), the Ruler of Dubai Sheikh Mohammed Bin Rashid Al Maktoum states:

*“our aim is for Dubai to be recognized as a leading centre in the new economy involving close co-operation with leading edge companies specialized in the development and creative applications of technology. To accomplish our aim, we need to redefine and transform our understanding of the role of government. Our e-wisdom is an asset and I shall personally lead this transformation.”*

He further added:

*“I want Dubai to develop a unique commercial economy in this digital age. Just as Dubai was a unique example with its trade in those bygone days when our traders have achieved fame far and wide.”*

This is in line with the UAE national strategy, where Dubai Government strategic directive and ambitious plan have been derived. This caused all government departments and agencies to embark on the digital route with the intention to move all of its services online and via a single channel.

## **5.2 Dubai Cultural Dimension and Innovation for Change**

Historically speaking, in some public works decision times to get from concept to start of construction can run into several decades. For example in the late 1980s London Transport and British Rail advocated, on economic grounds, the construction of a new rail link in London – Crossrail. In 1990 the project was formally discussed in parliament (Hansard, 1990) and restraints were placed on property development along the proposed route. Although the company to manage the development was established in 2001 (Crossrail 2006), parliament has only just given approval to proceed with the work on 22 July 2008 (Hansard 2008). The decision making process has taken 30 years and completion is not expected until 2017.

In contrast, the proposal to equip the city of Dubai with over 50 miles of fully automated light rail transport system was raised in 2000 and by 2006 construction had commenced (Anon 2006). Dubai, of course, is smaller than a city like London but this alone cannot account for the vast differences in the time scale decision make process to adopt a major public project. To gain some insight, perhaps there is a need to shed some light into this aspect of cultural dimension. The results of Hofstede's studies of cultural differences around the world show that the Asian region is very much different from the US or UK (Hofstede, 2003). For example, the power distance index of 80 for the UAE compared with 35-40 in the US and UK indicates a society that expects and accepts the authority of those in power. Combined with a high uncertainty avoidance index of 68 for the UAE (compared with 35-46 for the West) there is an expectation of an organised society with rules and regulations that are, in the main, obeyed. The individualism index, which is a low (38) for UAE when compared to about 90 for the West, also leads to a more collective behaviour with a high degree of loyalty. Thus, the nature of culture and the governance of Dubai permit decisions to be taken more rapidly and with greater certainty that they will be carried out. There is no need for the debate and consensus building that occurs in the UK or US and much less willingness to challenge the public authorities<sup>16</sup>. This is to adding the motivation that since the mid 1990s ICT has played an important role in incrementally changing and shifting traditional and bureaucratic government models into the current eGovernment model where services are delivered according stakeholders' needs, citizens focus, and business focus (Burn and Robins, 2003; Wimmer, 2004).

Table 5.1 below shows the eGovernment readiness for Western Asian 17 countries with the position of the United Arab Emirates (ranking 32, index 0.6301), where the Emirate of Dubai, where Dubai Municipality is located, is the second largest amongst seven Emirates that constitute the United Arab Emirates.

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<sup>16</sup> -- It is not the purpose of this chapter to comment on the merits or morality of these cultural factors but simply to recognise that these differences exist. Some researchers believe that they significantly impact what can be achieved in organisational change leading to transformation.

| Country                     | Index         |               | Ranking   |           |
|-----------------------------|---------------|---------------|-----------|-----------|
|                             | 2008          | 2005          | 2008      | 2005      |
| <b>United Arab Emirates</b> | <b>0.6301</b> | <b>0.5718</b> | <b>32</b> | <b>42</b> |
| Cyprus                      | 0.6019        | 0.5872        | 35        | 37        |
| Bahrain                     | 0.5723        | 0.5282        | 42        | 53        |
| Jordan                      | 0.5480        | 0.4639        | 50        | 68        |
| Qatar                       | 0.5314        | 0.4895        | 53        | 62        |
| Kuwait                      | 0.5202        | 0.4431        | 57        | 75        |
| Saudi Arabia                | 0.4935        | 0.4105        | 70        | 80        |
| Lebanon                     | 0.4840        | 0.4560        | 74        | 71        |
| Turkey                      | 0.4834        | 0.4960        | 76        | 60        |
| Oman                        | 0.4691        | 0.3405        | 84        | 112       |
| Azerbaijan                  | 0.4609        | 0.3773        | 89        | 101       |
| Georgia                     | 0.4598        | 0.4034        | 90        | 83        |
| Armenia                     | 0.4182        | 0.3625        | 103       | 106       |
| Syrian Arab Republic        | 0.3614        | 0.2871        | 119       | 132       |
| Iraq                        | 0.2690        | 0.3334        | 151       | 118       |
| Yemen                       | 0.2142        | 0.2125        | 164       | 154       |

**Table 5.1: The ranking eGovernment Readiness For Western Asia (Source: UN, 2008)**

The pace of change in the UAE over the last decade in general and Dubai in particular is rather impressive (Figure 5.1). This small emirate, which is mainly a barren desert, is establishing itself as a business hub in the Gulf region. Perhaps the unique nature of Dubai historical trading culture and the government ruling systems have contributed to its success in this digital age.



**Figure 5.1: The UAE And Dubai Map With New Development**

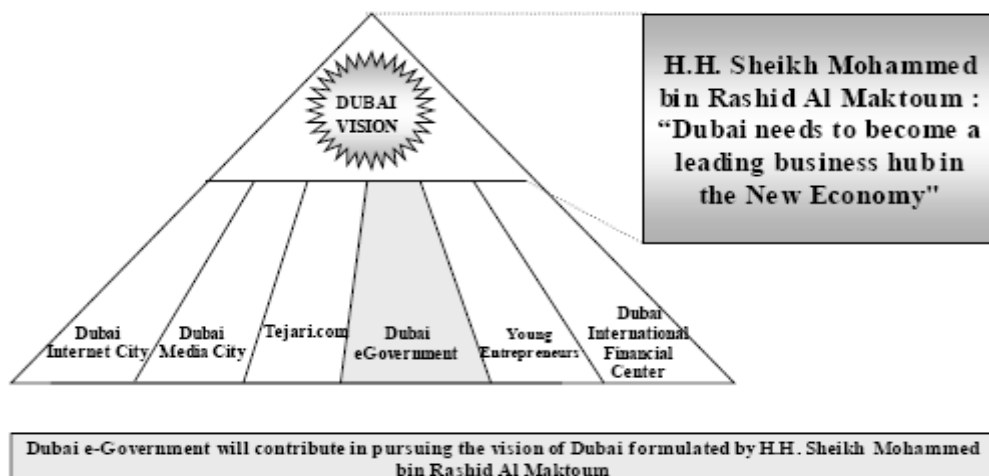
Modern Dubai traces its origins to the 1830s to a small fishing village on the Shindagha peninsula at the mouth of the creek where the tribe of Bani Yas, originally from the Liwa oasis to the south, was settled. The only commonality between then and now is that the well known Maktoum family still rules Dubai. Pearl and fishing, this was the mainstay of the city's prosperity for many years, succumbed to the development of the cultured pearl in the



1940s. But Dubai's enterprising merchants bounced back, developing a thriving trade in gold and other commodities. In 1966, oil was discovered and the economy kicked into spiraling development. In 1971, the Emirate of Dubai became the seventh emirate of the newly formed UAE. As a global business and tourist capital, Dubai is home to world-class tennis tournaments, boat and horse races, desert rallies, and one of the largest air shows in the world.

### 5.3 The eGovernment initiative in Dubai

The drive of eGovernment started in the year 2000, with the official announcement of the eGovernment initiative by Vice President and Prime Minister of the UAE and Ruler of Dubai His Highness Sheikh Mohammed Bin Rashid Al Maktoum, who said: ‘The notion of Government has to be re-invented if we want Dubai to become a leading business hub in the new economy.’ And with this statement, was born a new era for the Government and people of Dubai. To make this initiative a reality, an Executive Committee was formed with lady Sheikha Lubna Al Qassimi, as the Chairperson. With the full meaning of an initiative literally means 'to initiate and immediately embark on a course of action'. No time to waste, the ruler of Dubai initiated this course of action with direct responsibility and involvement. Where to this extent one executive member has described him as ‘the knight who continues to blaze the way forward for the entire team at Dubai eGovernment.’



**Figure 5.2: The Government Of Dubai Has Launched The Dubai Egovernment Initiative To Support And Reinforce Dubai’s Vision**

As a forward looking and insightful leader, H.H. Sheikh Mohammed was quick to understand the crucial importance of the Knowledge Economy. He therefore decided to personally lead the new transition to the new economy, through a series of pioneering initiatives, to lay the foundation for a strong ICT infrastructure to attract businesses into Dubai. He stated:

*“Our objective is the positioning of Dubai as a leading hub of the new economy through the involvement of leading companies specialized in the development and creative applications of technology. To accomplish this, we have to re-define and change our concept of the role of government. **I will personally lead this transformation.**”*

The Dubai executive committee inspired the local and government departments to start work on offering their services online and to achieve this goal in less than 18 months. To many, the goal seemed over-ambitious, if not unachievable. However, the dedicated government teams lived up to their promise and delivered on time, as per the expectations of their leader. He hailed their determination and devotion by saying: *“A human being is full of potential. These men and women have proved that, when given a chance, they can channel their capabilities in a creative way”*.

On the country level, a steering committee of the UAE Federal Government was set up under a cabinet resolution (1/631/2001) to provide the road map of eGovernment. This committee which is facilitated by the Ministry of Finance and Industry under the chairmanship of the Finance Minister himself. The committee emphasises that ‘Information Technology’ should be used as a tool to re-invent and reform the current ‘management’ of the government. The eGovernment project will improve the convenience, accessibility and quality of interactions between the Federal Government, businesses and the people residing in the UAE. More importantly, eGovernment will improve information flows and processes within all Government Ministries. The committee also emphasise that the systems and processes of government will be reengineered to capitalise on the potential benefits of new ICT based applications. This process of business reengineering will redefine the way each government department performs its tasks in the new ICT-enabled environment. The introduction of eGovernment will be defined to give the outcome as stated below:

- Innovative services;
- Managed government information as a strategic resource;

- A government that is closer and more transparent to the people and businesses;
- Better formulation of government policies;
- Established greater partnership between the government and private sector;
- Functional integration within the government; and
- Effective information flow to facilitate policy making and development for implementation.

In order to manage this project effectively the steering committee has decided to implement this strategic initiative into 3 phases: Phase 1: Creating an eGovernment Strategy; Phase 2: Contracting out the chosen eGovernment application; and Phase 3: Implementation the chosen e government application. Realising fully that customer focused eServices require: Identification of various components in an eService and provisioning of those components in a customer focused manner.

In this section, those identified various components of eServices are outlined below that set the parameters for government service reform. These components of an eService will make up the generic quality framework for eServices in Dubai Government. The components of an eService as identified by the government are listed as follows:

- eService Definition; eService Business Process Model and Business Requirements; eService Customers; eService Access
- Authentication and authorisation
- Submission of documents; Form filling
- eService Execution
- Intermediate interactions
- Physical visits (status, confirmation, information, more documents)
- On-line interactions (status, confirmation, information, more documents)
- Seamless & integrated eServices
- eService Error & Exception Handling; eService Provisioning Channels
- eService Rules & Regulations
- eService Customer Satisfaction Feedback

This shows the seriousness of leadership in implementing a unified framework that is citizens centered. It can be noticed that a single eService can be implemented in multiple ways by defining above indicated components related implementation decisions in different ways. The implementation guidelines highlighted eServices provisioning.

The national UAE eGovernment Strategy is an overall study umbrella to assess the readiness of UAE Federal government to transform to an electronic government and transactions. It will establish the eGovernment strategy for the complete Federal Government covering all ministries. To get to an efficient and successful eGovernment it is important to develop a strategy, which means creating a road map how to get there, including the principals defining a new organization:

- Mission, vision and value statements
- Broad services goals and objectives
- Appropriate business models
- The alignment of people, business processes and technology
- Relevant and measurable performance metrics

As aforementioned, it appears that there is active commitment from central government leadership to the transformation of government services; and also high level support from central government and ministries' officials to open up a way for eGovernment implementation. This research, through the following three case studies, namely Dubai Municipality (DM), Dubai Naturalisation and Residency Department (DNRD), and Dubai Police (DP) will explore and identify these key enablers and barriers that facilitate or hinder the advancement of eGovernment to the transformational stage.

The three case organisations have been selected according to their service offering maturity level of implementation, their leaders' commitment to the transformational aspect of their organisation, and above all their willingness to participate in this research. The first case is (DM) which is the biggest government agency responsible for all the major development that is taking place in Dubai. For example, one of the most recent projects was Dubai Railway system. The second case is (DNRD) which is another important agency for human resources that help with issuing visas to these employees and workers to supply companies to help constructing these complex projects. Of course, these services are crucial for the development

of Dubai as an economic hub in line with their stated strategic objectives. And finally, what the benefit of all this development is if there is no security in the country to match those expectations of economic development and becoming a digital economy. This is served by the third case study (DP) where its main function is to provide security and safety to citizens and businesses alike.

| Case Studies | Number of Departments | Number of Employees | Type of Services  |
|--------------|-----------------------|---------------------|---|
| DM           | 32                    | ≈13,000             | <p>Dubai Municipality provides municipal services to a diverse population in Dubai. Its work includes urban planning and supervision of construction, environmental protection and improvement, conservation of public parks, regulating and ensuring international quality standards in construction and building materials, food &amp; consumable items, professional services in laboratory certification and accreditation.</p> <p><a href="http://www.netutils.com/documentation/JuniperWX/CaseStudies/DubaiMunicipality.pdf">http://www.netutils.com/documentation/JuniperWX/CaseStudies/DubaiMunicipality.pdf</a></p>  |
| DNRD         | 12                    | ≈6,000              | <p>The Department of Naturalisation and Residency Dubai (DNRD) looks after entry permits, visit visas, residence visas, etc for entering and living in the UAE if you come in through Dubai. DNRD is now formally known as 'The General Directorate of Residency and Foreigners Affairs' where it is also referred to as the Dubai Immigration Department or Dubai Naturalisation and Residence Department.</p> <ul style="list-style-type: none"> <li>• E-gate - electronic entry and exit system at Dubai Airport</li> <li>• Entry permit / visa issue for tourists and visitors</li> <li>• Exit permit issue</li> <li>• Health insurance policies which can be issued with visit visa applications</li> <li>• Investigate and arrest illegal residents, visa overstayers, and absconders</li> <li>• Labour card cancellation for workers</li> <li>• Online application for visas through the DNRD website for companies</li> <li>• Passport issuance and renewal for UAE nationals</li> <li>• Residence visa issue for resident expatriates</li> <li>• UAE citizenship applications</li> <li>• Work permits issued to domestic workers (maids, houseboys, etc) and labourers</li> </ul> <p>eDNRD is a website where customers can login, choose the type of Entry Permit they wish to apply for, fill out the form, post the form and print out the visa.</p> <p><a href="http://dubai.ae/en/Lists/GovernmentDepartments/DispForm.aspx?ID=27&amp;category=Government">http://dubai.ae/en/Lists/GovernmentDepartments/DispForm.aspx?ID=27&amp;category=Government</a></p> |
| DP           | 17                    | ≈15,000             | <p>Dubai Police is an integral part of UAE Police Force it offers Community Policing and Human Rights programs with additional services such as DNA testing in criminal investigations, electronic finger prints, and automatic vehicle locator (AVL). It issues and renew driving licences. It also issues Alcohol Licences to expatriates.</p> <p><a href="http://www.datadubai.com/United_Arab_Emirates/Dubai/Government_in_Dubai/Government_of_Dubai/17177-1592.html">http://www.datadubai.com/United_Arab_Emirates/Dubai/Government_in_Dubai/Government_of_Dubai/17177-1592.html</a></p>   |

**Table 5.2: Basic Information About Case Organisations (DM, DNRD, and DP)**

## 5.4 Case Studies' Units of Analysis

This section will explain the unit of analysis in the practices of eGovernment implementation leading to transformation in selected three government case studies in the Emirate of Dubai namely DM, DNRD and DP. The selection of these three cases has been justified since they have provided sufficient information to achieve the purpose of this research. Further case studies would not have provided any additional benefits with the aim of this research. Another reason for selecting those agencies is the nature and category of government services with those business functions provided by case organisations to citizens and businesses. For example, the DM has more interactions with business sector (G-to-B), the DNRD provides services to the citizens' and visitors as well as the business sector (G-to-B) and (G-to-C), and the DP has a wider role across all service interactions including other government agencies (G-to-C) (G-to-G) and (G-to-B). Therefore, the analysis of the three different organisations' interactions would indicate the applicability of the proposed model to a wide capacity of government interaction and communication with different community sectors.

The detailed representation provided in each case study revealed that each case organisation was characterised by differing size and context. The organisational size factor is based on the volume of information and services processing within the organisation and provision to people, and also the number of employees. The DM is one of the largest government organisations among case organisations, and also among government organisations in Dubai, and the DP is of medium organisation size, whereas the DNRD is considered a relatively small government organisation. Therefore, this will validate the implication of the organisational size factor in the process of eGovernment implementation leading to transformation as one important sub-factor encapsulated within the organisational factor.

This research will examine the validity of the proposed conceptual model using the case study research strategy proposed in Chapter 4. In doing so, factors associated with the proposed conceptual model will be analysed among the three government organisations, and also the implementation stages will be studied as a central part of the proposed conceptual model. These units reflect the empirical validation for the components of proposed conceptual model, namely the gap 'eCahsm' in the maturity stage of growth model, Organisational Domain - eGovernance Domain and –Technology Domain (see Figure 3.3), as well as the benefits-barriers framework. These collectively will form the generation of themes

which illustrates characteristics and context of each case organisation such as level of leadership's support that leads to transformation.

## **5.5 Case Organisation One – (DM)**

### *5.5.1 Introduction*

Dubai Municipality (DM) is one of the largest government service provider in terms of its geographic area, covers a range of diverse environments. It receives approximately 1000-2000 citizen queries via telephone, whereas, face-to-face contacts are approximately from 250-500 on daily basis. The queries and face-to-face contacts are measured by the service centre. It employs approximately 8000 employees and provides its services through various sectors including social and environmental services, property development, building construction licenses. The emirate of Dubai also has key corporate groups based in designated free zones which cover cross cutting areas such as IT services (Dubai Internet City), performance management and media (Dubai Media City), manufacturing, and finance (Jabal Ali Free Zone Authority).

In an attempt to better understand this case organisation, before analysing the case data, this research discusses the background of DM information technology infrastructure, its limitations in integrating ICT infrastructure, the motivations to eGovernment implementation adoption, and the adoption process. Thereafter, this research analyses those findings in the process generating key enablers with associated sub-themes. Subsequently, discussing those sub-themes with relevant factors on different adoption lifecycle phases for each case study and its related themes and finally, summarising the findings of the themes obtained from all case government agencies.

### *5.5.2 Background to DM eGovernment Strategy*

The government of Dubai has pushed the government authorities in the Emirate of Dubai to: (a) collaborate with other Government authorities, (b) improve information sharing within departments and with other Government authorities, (c) provide better coordination of business processes and (d) provide integrated service delivery. In doing so, DM officials



believe that to achieve this, a flexible and integrated IT infrastructure is required to: (a) enable web based transactions, (b) improved service delivery, (c) improve performance management and knowledge and (d) improve the robustness of business processes. Such an IT infrastructure will allow DM easily adapt to its changing business environment and enhance the delivery of their services.

DM is a large service provider and has several service areas (departments). Each service area has initially its own IT infrastructure. The analysis of all the interviews conducted illustrates that there is a fundamental problem with disperse systems, data structures and computer languages. Most of these systems were, for example, there is a need for an integrated and flexible IT infrastructure that has been necessitated with the existing infrastructure which is causing numerous problems. This is because they prevented DM from implementing its business goals. For instance, some of those implemented system could not support its goal of closer collaboration and coordination of inter-organisational business processes due to the non-integrated nature of its applications. This held back the transformational development of integrated government, as aspired by the leader of Dubai, which preventing the strategic achievement of an integrated IT infrastructure and cost reductions.

In order to capture the provision of services through eGovernment implementation from organisational perspective, documents analysis, as well as interviews were conducted at DM with the General Director of Dubai Municipality (GDM), Consultant and advisor to the General Director (CGD), Director of eServices (DeS), Head of ICT (HICT), Senior Development Support Engineer (SDSE), and the Project Manager (PM) from three different departments. The technological background illustrates that their technology infrastructure has been underdeveloped and in the process of being integrated and thus, several limitations existed in their IT infrastructure e.g. the head of the ICT (HICT) department and others mutually agreed that:

*“... IT infrastructure within DM was initially constructed in a departmental functionality way. Each of the major service areas within this agency had developed their own IT need and system infrastructure ...”*

The illustration depicts that each major service area had their own separate infrastructure and within each service area possessing several non-integrated information systems. This clearly

posed huge managerial challenges to DM leadership as to transform there is a considerable pressure to integrate.

DM officials recognised later of the need to invest aggressively in this area (e.g. integrating their whole system infrastructure) in order to deliver its set of objectives and priorities. As a result a technology road map was developed through which investment was planned to spend on enhancing the electronic services and particularly payment security with the use of ICT-enabled integrated technology demonstrating a commitment to the national electronic transformation agenda. DM is now committed to partnership working to improve the quality of ICT as shown by its involvement in the public service network, resulting in leveraging extra capacity and resources from partners to jointly improve services to citizens and stakeholders. Examples are the development of the project management toolkit, e-procurement system and the agency staff tool. DM also makes some innovative use of ICT in delivering services, using multi-channel approach, to be discussed fully later. For example, in using SMS messaging to pursue rent arrears for their rented beach resorts and basic information on completions certain services to companies.

Along with the modernisation agenda and providing an efficient and effective service to customers through restructuring, by getting close to customers, some staff members were relocated to newly modernised offices. These have state of the art facilities, including wireless networks which are an improvement on those available in outlying offices and have improved efficiency. In support of this, the Director of eService (DeS) stated that:

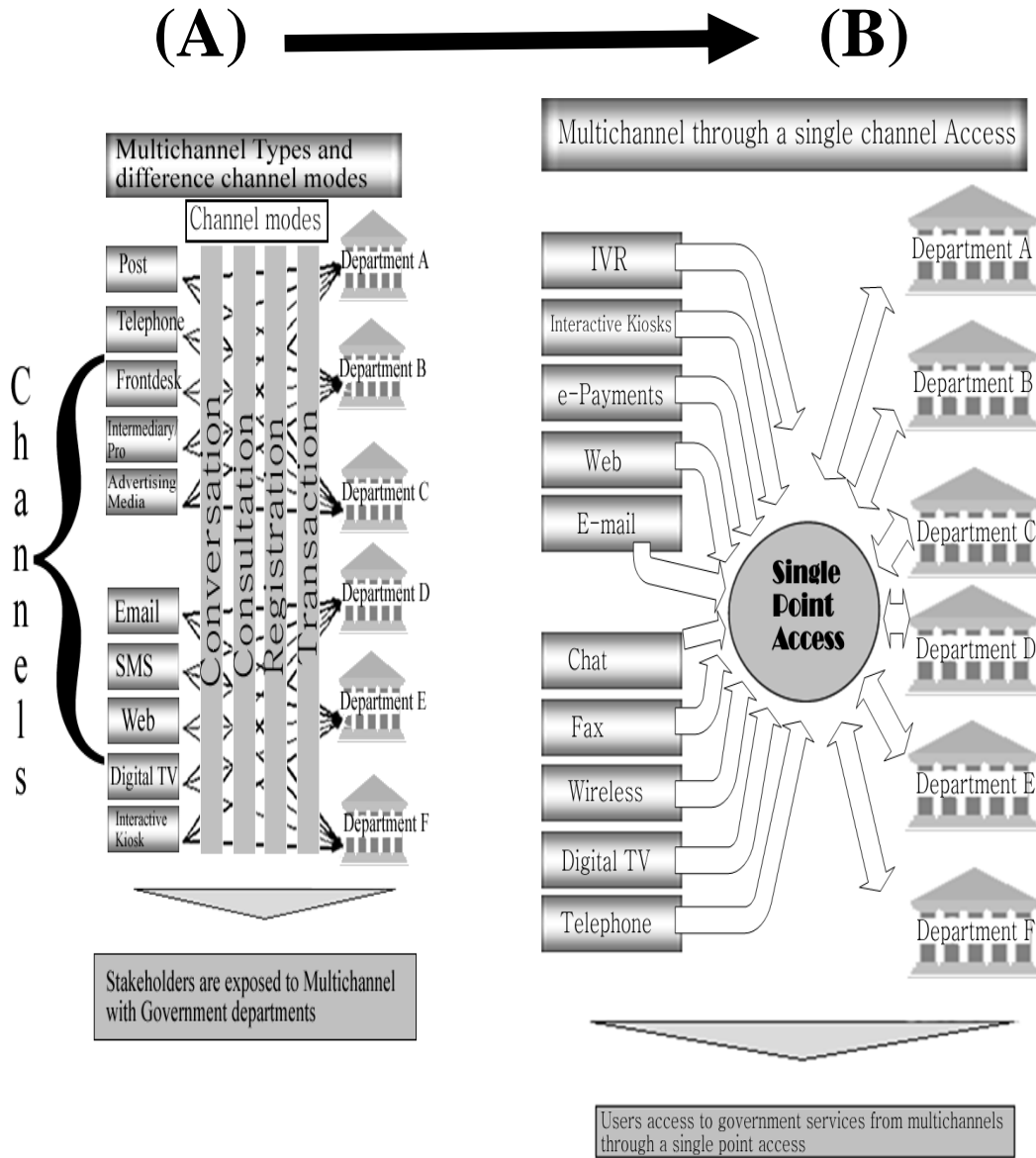
*“... we are now trying to get to that point where we haven't really been in the past. There is an excellent support from our senior management to overcome all barriers. Of course, this was just because of non-integrated IT infrastructure and silo-based mentality among different departments and their staff members ...”*

During the interview sessions at DM, several technology infrastructure limitations were highlighted. These limitations are explained later with the comments from the interviewees.

With the aforementioned, it is recognised that transferring of a service to online delivery reduces the demand on these traditional channels and holds out the potential for savings through reduction in the resources required to support them. Complete closure of a traditional

access channel may well be contemplated. Ex-ante cost benefit assessments such as these depend upon significant assumptions about the number of citizens who will move to an online service delivery channel. For example, as reported in the literature, the UK Inland Revenue service online taxation project estimates a 50% take up with staff savings of 1,300 posts (NAO 2002). In several cases complete transfer of the service to electronic interaction may not be possible under existing statutory and regulatory frameworks. Notwithstanding European Directives on the validity of electronic signatures (EU 1999) there are still situations where the agency needs to have physical signatures or to be able to inspect physical documents (IPS 2008). As a case in point, Australian's federal government adopted a comprehensive online strategy for the adoption of eGovernment (DCITA, 2000). This strategy specifically excluded closure of traditional access channels (Australian Government, 2005). However, based on the experience of other tax collectors the Australian Taxation Office did expect to make direct cost savings in its planning for there 'ETax' online system. In practice the take-up fell behind the ATO targets (Chamberlain and Castleman, 2005). The drivers for eGovernment broadly include improving internal cost and management efficiencies, encouraging citizen participation, promoting economic development and improving overall governance.

In the context of discussion above, Dubai Municipality has embarked on the digital route with the intention to move all of its services online and via a single channel, in line with Dubai Government strategy. Historically, citizens would access services by: mainly visiting local or regional offices, paper and postal communications and telephone interactions. The different channels (Post, Telephone, Interactive Voice Response (IVR), Front desk, E-mail etc.) that are being used for stakeholders to interact, using different channel modes (Conversation, Consultation, Registration and Transaction) with Dubai Municipality in contacting different departments are shown in Figure 5.3 below. It is the strategic management plan and leader intention for Dubai Municipality to move from a state (A) type multi-channel system of interaction to a state (B) type single interaction with stakeholders.



**Figure 5.3: Dubai Municipality Strategy To Move From Multichannel To Single Channel Service Delivery System**

### 5.5.3 Example of eGovernment implementation leading to transformation

Although DM implemented several IS projects and scenarios to improve its services, these information systems did not solve all problems and thus, preventing in overcoming the limitations of their IT infrastructure. This research presents several limitations that were highlighted: (a) during the interviews, (b) from documentation provided by officials and (c) self observations during visits to customers' centre. The limitations that prevented DM in developing a seamless integrated IT infrastructure are presented below and are classified in the same way as in Chapter 2. Similar IT infrastructure limitations were also reported in previous literature and therefore, the categories of limitations reported herein support previous published evidences (e.g. Gil-García *et al.*, 2005; Signore *et al.*, 2005; Janssen and Cresswell 2005).

#### 5.5.3.1 Technical and Systems Issues:

Dubai Municipality technology infrastructure has been developed heterogeneous and consisted of several incompatible systems. As a result, DM faced significant integration problems when attempting to integrate their existing custom built applications to other applications systems. The Senior Development Support Engineer (SDSE) reported that:

*“... there was a real need to make data compatible between one department and another department system and making one system compatible with other legacy systems. Many of the systems and data were held entirely in a different way. So one challenge was to take data from one system, reconstruct it in to a format that was common to all other systems ...”*

In addition, there was redundancy of data and functionality, as many applications store similar data or run systems that overlap in functionality. The Head of ICT (HICT) stated that:

*“... one of the major problems faced was the technical capability and the integration of our systems with other systems. The reason was that our department always used point-to-point integration to integrate these systems and thus, was unable to share information with other departments ...”*

Moreover, the Director of eService (DeS) also articulated that:

*“... we had problems of data interchange between different packaged and legacy systems in different departments ... sometime there was a problem of data compatibility, different data record layouts in all systems and or incompatible platforms. Eventually mapping of data from system to system was a real challenge that requires immediate attention and our senior management fully supported the change...”*

Therefore, the evidences provided by different interviewees emphasize that existing systems did not benefit fully properly and support from DM leaders are well in place in solving their integration problems.

#### 5.5.3.2 Organisational Information Sharing and IS Integration

The discussions with the interviewees illustrated that information sharing amongst department was a major problem due to technical as well as other issue to do with authority, as the Director of eService (DeS) reported that:

*“... sharing of information again subject to information security was without doubt one of the major challenges to meet ...”*

Moreover, DeS also highlighted that:

*“... information sharing between departments is still today a major problem, like several other government agencies..... even our organisationperceive itself as owners of data, in some respect, and thus are very protective about sharing data with other agencies, but willing provided there is a clear framework and guidance. However, other organisations are unwilling in sharing data this has prevented us in integrating our systems infrastructure horizontally across organisations ...”*

To address the issue of information sharing, the definition of access rights to data would appear critical to establishing what constitutes legal and legitimate access to data. While discussing on the issue of information sharing with other departments, the Head of ICT (HICT) replied that:

*“...amongst almost all the authorities in Dubai and their departments there is a general willingness and readiness to accept change and share information but there is lack of clear procedures and guidance or some leadership initiatives to make that change happen ...”*

This view was strongly confirmed by the (DeS) as well as the Consultant and Advisor to General Director (CGD). Further, all the interviewees expressed the need for standardisation in data formats and the adoption of a common unified data model.

#### 5.5.3.3 Business Data Security and Privacy Issues

As reported in Chapter 2, a critical obstacle in implementing eGovernment is the citizens' concern on privacy of their life and security of payment and of the personal data they are providing as part of obtaining government services. While discussing on data security and privacy issues, the Director of eServices (DeS) replied that:

*“... data protection has been one of the most important problems to meet because citizens' data may contain important information e.g. their name and home addresses and e.g. why do I need to give this information to other departments. Thus, access to information had to be controlled as disclosure of such information to irrelevant users may cause problems for citizens' privacy. However, in turn this caused us problems in collaborating with other departments and in sharing data ...”*

Furthermore, the Senior Development Support Engineer (SDSE) also put the emphasis on payment system:

*“... it is very clear that now at this stage , we have prohibited certain aspects of the municipality to share data with other departments and between different companies and agencies, this is because data security in particular areas such as digital signatures and payment that is indeed clearly a challenge ...”*

It appears from the interviews that similar perceptions exist between the interviewees that whether the selection of customised applications will solves citizens as well as customer data

security and privacy issues. The underlying argument by all interviewees was that the success of any integration technology is reliant on suppliers of those systems and the stakeholders trust that their data information is secure and confidential. An in order to gain full benefit of the integrated technology a whole new approach to reengineer processes that are needed with complete view of the digital service and transforming the organisation. In the process of conducting this change services has to be redesigned around customers in addressing their need.

#### 5.5.3.4 Business Process Reengineering (BPR) in eGovernment Projects

While discussing BPR in eGovernment projects, the Head of ICT (HICT) department replied that:

*“... the biggest challenge was mapping of all those services with some common features and functionality which has in their different eGovernment projects. This is not the integration of the system itself but the integration of the business processes and people between the departments using the available technology...The support to redesign and modify those processes is well in place thanks to support of our leaders...”*

Other interviewees also presented their views on BPR but their explanation was not directly related to this limitation. The practitioner's observation from the interviews conducted is that the Chairman of DM is fully engaged in the process with the direct encouragement and backing of the ruler of Dubai. Otherwise, this could not support their goals of closer collaboration and coordination of inter-organisational business processes with different departments and government agencies. In this research it is also observed during the discussions that if there is a risk to be taken, it is acknowledged that the rewards far outweigh it. Although, the current infrastructures do not efficiently support core business processes, then this in no may be an obstacle in achieving their business goals. Therefore, it is believed based on the advice of the consultant that it is necessary for DM to test their system responses in order to fully reengineer their business processes so as to take full advantage of integrating technology.



### 5.5.3.5 Front-Office/Back-Office Operations and Functioning

Legacy systems within DM have restricted the development towards citizen-oriented processes. As a result, there is much needed to be done than just an integration solution that would assist in enabling seamless communication between front office and back-office legacy systems and applications. This problem of integration is sometimes further exaggerated by different outsourcing system developers and suppliers.

For example, the Head of the ICT (HICT) stated that:

*“...they are only interested in selling own products. Of course, this is understandable; however we want to select what best for us to achieve our goals. So, from supplier’s point of view, these suppliers tend not to support full integration unless we are completely using their own systems to integrate with each other ...This is a real problem for us”*

Discussions with the (HICT), (CGD) and (DeS) have also revealed that the systems suppliers would only integrate and support their own product and any systems with other non related supplier products with their integrated solution, only if it is of some benefit, otherwise they would not support nor maintain the integration process.

### 5.5.3.6 Financial Issues in Implementing Integrated eGovernment

As mentioned before, dealing with different suppliers is a major issue to achieve integration. The consultant believes that it is not cost effective to support a large infrastructure, which includes numerous systems with overlapping functionality. This will lead to the maintenance cost of such an infrastructure to be too high, which presents an additional financial problem. Discussing on this issue the Head of the ICT department reported that:

*“... .. attempted to adopt several cost effective solutions to overcome this situation with one of the solutions that were proposed focusing on point-to-point interconnectivity for their legacy systems ...”*

The Head of the ICT department furthermore added that

*“... it is sometimes easier to integrate the processes without integrating the whole systems. So when you talk about Integration, then sometimes it is actually more effective not to integrate the systems but to integrate people, and restructure the organisation and keep the systems as diverse and flexible, as we cannot fully justify the cost incurred...Of course this requires organisation restructuring”*

On the other hand, senior management pressing to improve service provision to stakeholders in providing complete virtual interaction with DM services and limit their need to visit Dubai Municipality to conduct their business. Furthermore, business residents expect better service delivery for their establishment. However, the insufficient current infrastructure could not accomplish this aim due to point-to-point interconnectivity. This situation resulted in a varied lack of trust between DM and the stakeholders particularly companies. Moreover, the Senior Development Support Engineer (SDSE) also added on this issue that:

*“... because we had data systems that were not our current software supplier based and the manufactures were very reluctant to build system integrators that could convert the data for our numerous non- software supplier systems, large costs would be incurred .. in cases the whole system had to be replaced completely...”*

Clearly, the initial findings on the background to DM technology infrastructure indicate that there is a clear support from senior management to advance the eGovernment agenda further to a more integrated service and transform the service provision, even hinting transforming the municipality organisational structure should that consideration is needed. The results of those discussed technical limitations are summarised in Table 5.2 below.

| Integration Drivers  | Dubai Municipality Technology Infrastructure Limitations   |
|--|--|
| <b>Systems Issues</b>  | <ul style="list-style-type: none"> <li>• Data interchanging and compatibility issues.</li> <li>• Issues of packaged systems incompatibility with legacy systems.</li> <li>• System platform incompatibility.</li> <li>• Mapping data from system to the other.</li> </ul>        |
| <b>Organisational Information Sharing and Integration</b>      | <ul style="list-style-type: none"> <li>• Sharing of information subject to security with other departments.</li> <li>• Very protective about sharing data with other agencies.</li> <li>• Inter-personal collaboration</li> </ul>  |
| <b>Citizen and Business Data Security and Privacy Issues</b>   | <ul style="list-style-type: none"> <li>• Data Sharing.</li> <li>• Security of data.</li> <li>• Trust in sharing of data across agencies</li> </ul>   |
| <b>BPR in eGovernment Projects</b>                             | <ul style="list-style-type: none"> <li>• Integrating business processes.</li> <li>• Inflexibility and lack of cooperation between the departments.</li> <li>• Complexity in mapping some services</li> </ul>   |
| <b>Front-Office/Back-Office Operations and Functioning</b>     | <ul style="list-style-type: none"> <li>• Computer and system suppliers do not integrate systems across platform e.g. X supplier will not integrate with Y supplier products.</li> </ul>  |
| <b>Financial Issues in Implementing Integrated eGovernment</b> | <ul style="list-style-type: none"> <li>• Cost of maintaining point-to-point legacy integration.</li> <li>• Difficulty in justifying the cost.</li> <li>• Suppliers reluctant to develop adapters for legacy systems integration, thus large cost of money pulled out.</li> </ul> |
| <b>Supporting Management and Decision Making Process</b>       | <ul style="list-style-type: none"> <li>• Establishment of champion leading team</li> <li>• Involving stakeholders to evaluate the service provision</li> <li>• Consultations with all those being affected by change</li> </ul>  |

**Table 5.3: Dubai Municipality Technology Infrastructure Limitations**

| <b>Categorisation of Technical issues Challenges</b> | <b>Technological challenges facing transformational government system at DM</b>   | <b>CGD</b> | <b>HICT</b> | <b>DeS</b> | <b>SDSE</b> |
|--|---|------------|-------------|------------|-------------|
| <b>Post Installation software system</b>             | Maintaining high levels of performance and service availability. Training and support   | ●          | ●           | ●          | ●           |
|  | Trouble shooting, technical problems and support  |            |             | ●          |             |
| <b>Technical standards</b>                           | Setting technical standards framework for all eServices   |            |             |            | ●           |
| <b>The capability of the infrastructure</b>          | The capability of the infrastructure in terms of handling the range and number of transactions  |            |             | ●          | ●           |
| <b>Security</b>                                      | Ensuring the security of confidential data stored in government organisation databases and transactions   | ●          | ●           | ●          | ●           |
|  | Ensuring privacy of the personal data that are provided by citizens & business in the process of obtaining government services  | ●          | ●           | ●          | ●           |
| <b>Financing</b>                                     | Funds required to install system software and system computers as well as Post Installation provisions  | ●          | ●           | ●          | ●           |
| <b>Back-end servers</b>                              | The back-end servers (communication failures between internal system and the external web server)   | ●          | ●           | ●          | ●           |
| <b>System Compatibility</b>                          | Compatibility of eGovernment technology available to the internal system  |            |             | ●          |             |
| <b>Challenges of suppliers</b>                       | Suppliers pressure to buy their solutions only, underperformance and false promises of suppliers<br>Exaggeration of supplier prices and lack of suitable training   |            | ●           |            | ●           |
| <b>Future concerns</b>                               | The evolution of the technology (as there is emerging technologies)<br>The availability of technical resources (limited general skilled employees of suppliers).<br>After sales support (from suppliers)<br>Upgrading systems and agile products<br>Cyber attacks and viruses from connection with other departments or companies<br>Continues support for funding and wide scale financial support | ●          | ●           | ●          | ●           |

**Table 5.4: Technological Challenges Facing Transformational Government (DM)**

It appears from the discussions during the interview sessions that the limitations of technology infrastructures explained in previous section are verified since similar views were shared by the interviewees. However, senior officials realised those infrastructure limitations and took the executive decision for developing a vertical integrated infrastructure utilising business process reengineering that will support horizontal integration at later stage.

| Categorisation of Organisational Challenges                 | Organisational challenges facing Transformational Government system in DM   | CGD | HICT | DeS | SDSE |
|---|---|-----|------|-----|------|
| <b>Business Process Reengineering of internal functions</b> | <p>Double process front-end (the interaction between government organisations and its stakeholders needs to be offered in both a traditional manner and also through the internet).</p> <p>Time required reengineering and changing the internal business processes of the organisation.</p> <p>Funding required reengineering and changing the internal business processes of the organisation.</p> <p>Data transformation to digitized form</p> | ▲   | ▲    | ▲   | ▲    |
| <b>New Regulations and legislations</b>                     | <p>Adopting new legislation to deal with new issues such as electronic receipts and digital signatures. The speed of introducing (adopting) new legislation</p>   | ▲   | ▲    | ▲   | ▲    |
| <b>Changes of organisational structure</b>                  | <p>Change of organisational structure<br/>Logistics of operations</p>   | ▲   | ▲    | ▲   | ▲    |
| <b>Employees</b>  | <p>The lack of local IT -skilled employees (expatriate on short term contracts)</p> <p>Resistance to change (from traditional to an electronic ways of working) by the employees represents a major challenge.</p> <p>Culture change of employee's government processes organised for the convenience of the agency, service it should be stakeholders rather than the convenience of the department).</p>  | ▲   | ▲    | ▲   | ▲    |

**Table 5.5: Organisational Challenges Facing Transformational Government (DM)**

#### *5.5.4 Motivations for tGovernment Implementation and challenges*

The challenges discussed in the previous section have encouraged the senior management of DM to put the whole organisation to the test to assess fully its capabilities for transformational stage. This decision has been widely supported by the Dubai eGovernment leadership, as it is in accordance with the practices of the UAEeGovernment modernisation agenda i.e. to modernise the government and its services. This pressure can be signified as external pressure from the Ruler of Dubai i.e. direct influence from the government for providing integrated service delivery and for this purpose along other government agencies, to move the transformational agenda forward for seamless integrated services.

To this end, it appears that the problems with infrastructure in DM and the central government influence formed a kind of external and internal pressures. External pressures appear to deal with citizens and other government agencies and departments where internal pressures focus on factors such as managerial and technical issues. The Director of eServices (DeS) and the Head of ICT (HICT) also supported that internal and external pressures are highly important for integrated adoption. For example for external pressure the Head of ICT (HICT) said that:

*“... there is a direct persuasion from the central government in some areas for integration and there is some formulated legislation that requires DM to develop an integrated infrastructures... and the other major external pressure is the stakeholders and in particular those companies in constructions and other agencies i.e. we feel a direct pressure from them to improve our services... not to mention our senior management...”*

For internal pressure the Director of eServices (DeS) further added that:

*“... the relationship between the operational needs of delivering the service versus improving the service delivery faced we a dilemma e.g. do I improve the social services business processes and systems or you quite simply buy more extra off the shelf solutions ...with all these changes that are taking place, our leaders are giving us all the support that is needed for benefit realisation and organisational transformation ...”*

These findings validate what is reported in the literature that support the (a) ICT-enabled infrastructure change, (b) internal as well as (c) external environment as factors that influence the decision making process for tGovernment implementation and adoption. Notwithstanding the fact, that leaders in senior management have critical role to play in the evolution process of eGovernment and consequently the implementation of transformation government.

It is understandable at this stage that the motivation behind this innovative assessment project was to address the limitations of its existing systems, and to meet the targets set by the central government. The decision for this project was made by the Executive Managing Board after discussing this issue with their consultant (CGD) and Project Manager (PM) and other senior managers involved. The objective of the eWeek project was to demonstrate to Dubai Municipality stakeholders and other agencies in Dubai that investing in a long-term programme of integration between packaged systems and legacy applications is necessary. On this basis, the adoption of such an innovative approach is to assess the capabilities and integration within DM that will deliver measurable business benefit.

The analysis of the interviews as well as published documents illustrates that members involved in this projects had their rational motivations behind supporting the decision for eWeek and the inspiration by their leaders to be innovative and risk takers. For example, the Director of eServices (DeS) reported that:

*“... we had no choice but to improve our service delivery, reduce our costs and improve our performance management and knowledge. Other reasons were that to provide supports in developing flexible, innovative working environments e.g. you can integrate systems and re-structure the organisation in more flexible ways. In addition, it will also assists in access and sharing of information with other agencies. Lastly, it had been imposed on us by the central government to implement integrated service delivery system, so we decided to invest in more integrated solutions .....”*

While discussing on the motivations to be more proactive for eGovernment adoption with the Consultant to General Director (CGD), Director of eServices (DeS) and the Project Manager (PM), they mutually agreed that:

*“... the intention for supporting the eGovernment services implementation decision was that integrated solutions would enable internet based transactions and in addition, would also facilitate an increase in the volume of web based transactions. This will limit the visits to DM. Moreover, Business Process Reengineering (BPR) will improve the robustness of DM business processes. In this way we may be able to better analyse our business processes and performance efficiently and effectively. In turn this initiates, hopefully, other activities for those departments that are skeptics about our model of seamless service and would assist in cost savings and save time ...”*

In interpreting the discussions during the interview, it appears that internal as well as external pressures influence the decision making process for integrated services and using BPR as a mechanism to improve processes at DM. Another important factor that appears to influence the implementation of integration is related to the willingness of their senior managers and leaders to compete in the region for best practice in service provision and welfare of their citizens and stakeholders.

#### 5.5.4.1 Demonstration of eWeek Project at DM

The aim of this pilot project (eWeek) was to provide hand-on experience to senior management on the capacity of DM in dealing with these issues related to transformational government. This could be used for the development of a standardised, flexible and maintainable service infrastructure that integrates both intra and inter-organisational business processes and applications. For this reason, the pilot project attempted to test whether DM is able to deliver seamless service to stakeholders. It will also provide support for a robust managerial infrastructure that achieves: (a) closer collaboration with other departments, (b) improves information sharing, (c) better coordination of business processes and (d) integrated service delivery system.

The decision taken by senior management was of very high risk. This was to put the whole organisation to a big test leading to transformational government. In addition, this is to provide management with valuable data and to test the capability of DM for the transformational stage. Such an action could not have happened without the risk taking nature



and innovation of the leader of DM. For this purpose, DM developed a special website to create awareness and educate the public on the use of online services. It is worth noting, at this stage, that there are more than 100 nationalities residing in Dubai. However, as the majority speak English, DM has a dual website with Arabic as the default language as shown in Figure 5.4 below.



**Figure 5.4: Dubai Municipality Portal is in two languages, Arabic and English, where the default one is Arabic.**

Dubai Municipality in general offers about 520 online services. The percentage of online usage of these services varies from 100% for some services to 0% for other services (Building Plan approval). Reasons behind this difference include department's commitment, citizens' awareness, stakeholders' readiness, technical complexity, and customer support activities.

As part of the 'zero visit' initiative to Dubai Municipality, as explained by the Consultant to General Director (CGD), and with a vision to 'do all transactions at DM electronically with ease and confidence', Dubai Municipality conducted an 'Online Week' campaign during the period from 23 September 2007 to 13 December 2007 (see Table 5.5), aiming to encourage its stakeholders to use online services, decrease physical visits to the main building of the municipality and to gain more insights about what does it take to reach 100% usage of online services.

| <b>Involved Departments</b>                             | <b>Online eWeek</b> |
|---|---------------------|
| <b>Environment</b>                                      | 23 - sep - 2007     |
| <b>Public Health</b>                                    | 07 - Oct - 2007     |
| <b>Drainage and Irrigation</b>                          | 21 - Oct - 2007     |
| <b>Planning and Surveying</b>                           | 04 - Nov - 2007     |
| <b>Studies and Pre-Qualification Section – Building</b> | 18 - Nov - 2007     |
| <b>Building Permits Section - Building</b>              | 09 - Dec - 2007     |

**Table 5.6: Online eWeek Campaign and Those Departments Involved in The Study**

#### 5.5.5.1 Implementation Process of eWeek

The drive for change to modernise services and the insufficient nature of DM information systems infrastructure have led senior management to revisit their strategies for developing a wide integrated organisation. Thus, the top management formed an ambitious vision aiming at: (a) working on enabling integration internally and externally; (b) achieving an effective and efficient joined up government services and (c) enabling electronic request and delivery of eServices. As a result, supporting the decision making process for transformational organisation through experimenting with eWeek and the adoption of ambitious strategy for benefit realisation. The Director of eServices reported that the plan for developing an integrated eGovernment infrastructure on a large scale was considered of high risk for the following reasons: (a) there is no single application available for full integration of technology or software packages that supports the development of an full integrated systems infrastructure on a large scale and (b) there is a profound lack of know-how knowledge to incorporate such complex applications based solutions. This clearly indicates that barriers such as limited knowledge of complex technology and the lack of a single software packages product that may solves all the integration problems, have influenced leaders' decisions

regarding the assessment of capability to explore possibilities to reach transformation in organisation.

As the plans for integrating services were justified, senior management suggested a campaign to be run and to evaluate the outcomes. Other reason to run the eWeek project was the limited successful cases shown in different departments, and to act as prototype for other departments to work jointly on change for transformational government. The pilot hope to demonstrate that the organisational change and integration: (a) is technically feasible; (b) can deliver significant outcome benefits to stakeholders and (c) may assist the senior management in extracting relevant information on associated barriers and risks. Furthermore, it is hoped that then Dubai Government would recognise the success and importance of the experiment and encourage other agencies to follow suite in developing a coherent strategy for transformation.

As the decision was taken to venture in this innovative approach to implement eWeek, the interviewees were asked to comment on whether what factors negatively and positively affected the adoption process. The Consultant to the General Director (CGD) and Director of eServices mutually agreed that:

*“ ... there were several negative as well positive factors that affected our eWeek initiative considering the services offered adoption process, for example, the most important problem was the silo mentality among our older members of staff that resisted to such a change in the departments ...maybe for their fear of change and new technology,.... this was also because there were insufficient technical skills and expertise to do integration and our staff lacked understanding of business integration – for this reason we had to invest a lot of money and time to train our staff to build their skills on the concept of integration, therefore because the funding was a constraint, the cost of technology and money to spend on training the staff added to the problem .....but it is a worthwhile long term investment...”*

This concern was further confirmed by the Head of ICT (HICT) who added that:

*“...our staff members giving the support from senior management are willing to participate this helped considerably the design of the eWeek....where if there was a problem, the support from suppliers on integrated solutions software and packages was not satisfactory and also said that there were products that were out of warranty and not parts of integrated technology . . . and to train staff was rather limited...”*

The aforesaid views on the involvement in this initiative and the adoption process illustrate the willingness of employees to embark on this innovative experiment that to assess benefits and barriers while adopting eGovernment. However, the unreliable support from the suppliers was in negative factors in nature, thus, validating those factors (i.e. barriers, benefits, and cost) and others that might influence DM decision to implementing change. In the next section, this research discusses more on the logistics of the initiative of (eWeek) project undertaken at the Dubai Municipality. The idea of the campaign, as discussed in previous section, was to stop all manual transactions, for one week each, for the 6 biggest ready departments which provide between them 262 services, and are responsible for about 77% of all Dubai Municipality transactions. Full integrated media coverage and internal training sessions were designed and implemented. Certain key measures were calculated before and after execution of the campaign. Key findings and insight assortments were analyzed, identifying the key obstacles, and directions for full electronic transformation.

#### 5.5.5.2 Marketing Awareness Plan

The Online Week has followed an extensive awareness plan to DM customers. Newsletters and SMS have been sent to registered customers. News articles were published in many national newspapers, online news websites and magazines. Newspapers advertisements were placed different newspapers (Arabic and English). Radio spots were announced in different radio stations in Arabic, English, and Urdu as well, web banners were provided in some websites like DM, Dubai Police and local newspaper Al Bayan newspaper. Roll up Banners were distributed in DM, Dubai Chamber of Commerce, Dubai Economic Department, and Dubai Land Department. Brochures, flyers, and CDs were also distributed. The

PixMansystem, which is a new technology (see Figure 5.5) is used to promote and publicise the eWeek event.



**Figure 5.5: Dubai Municipality Marketing Team Uses The Pixman To Promote eWeek**

This system was also used at the same time to conduct electronic surveys. The PixMan systems were made available at DM and were also placed in some Shopping Malls like Burjman Shopping Centre and Ibn-Battouta Shopping Mall. Also a special stand was constructed specially for this event in Dubai Municipality Building to support those customers visiting DM and to train them on eServices available and answer any questions. On the organisation of this event five teams were set up in order to assist the successful implementation and management of the eWeek.

#### 5.5.5.3 Composition of Online Week Teams

There were five teams working together during the Online Week, where each team had specific tasks to accomplish as shown in Table 5.7 below.

| Team name                         | Description of role and responsibilities  |
|-----------------------------------|---|
| <b>Technical Support</b>          | Provide training for counter employees, receive complains and technical problems and solve it on the spot, make sure to provide network and eServices with best performance.  |
| <b>Media</b>                      | Set goals for advertising plans, coordinate with concerned companies for implementing project, measure effectiveness of marketing and communication tools to accomplish main goals.   |
| <b>Research and Communication</b> | Direct contact with DM customers who are coming to DM, conduct interviews to know the reasons for not using eServices and e-pay, get customer's suggestion to improve and support services, provide reports for research results and necessary advices. |
| <b>Concerned Departments</b>      | Work on solve all issues related to the eServices, and provide workshops and awareness for eServices.   |
| <b>Online Week</b>                | Construct the general plans, state the main goals, Key Performance Indicators (KPIs) to measure the performance of all sub teams, make sure that tasks are well accomplished, to take decisions and corrective actions based on the direct follow up.   |

**Table 5.7: OnlineWeek Teams With Their Role Descriptions And Responsibilities**

As a result of this research, it was found that during the Online Week there was direct value realisation. This shows increased online transactions, more use of ePayment, increased users' registration, tangible cost savings, improved customer satisfaction, a decrease in DM main building visits and manual transactions. Overall, about 25% increase of the number of online transactions in year 2007 compared to 2006. In general, the fourth quarter of 2007 i.e. the Online Week showed about 7.5% increase in number of online transactions over the average number of the quarterly transactions of the same year. It is interesting to note that for the first time in DM history it was able to reach 100,000 monthly transactions in October 2007, compared to an average of 91,000 monthly transactions in 2007, and 73,000 monthly

transactions in 2006. However, it was reported that during the same period online ePayments didn't show any noticeable increase, which is a main concern to management.

The case study findings indicate that more new companies/businesses registrations have taken place which was a good indication on the effectiveness of the campaign. During the Online Week, it was noted that on average about 1423 new companies and 1533 new individuals were registered to use online services. This in itself represents a remarkable achievement and constitute an increase over the monthly average registrations (for companies: 38%; company users: 33%; and individuals: 56%).

On average, it was reported that a total cost savings of about 9 millions Dirhams<sup>17</sup> only for the transactions of the participated departments. There was about 91% of customers who participated in the survey (1009 customers) reported that their satisfaction is either great or good. It was also reported that the total number of visitors to the DM main building was decreased by 27%.

Though this initiative has produced tangible results, cost saving and reduction in visits to the main municipality building, it has also produced some intangible benefits which may have future strategic implications, such as trust in ePayment system and putting extra pressure on personnel. It was discovered that through random interviews and meetings the Online Week managed to break the ice between different stakeholders in the eGovernment departments. It was for the first time in years that business users, technical team staff, and customers have sat together and focused on specific issues, and discussed areas of mutual concerns for improvement. During the Online Week there were some eServices used for the first time (Building Studies and Prequalification section in building department), while others were used heavily but they require physical attendance after submission; both were clearly identified and rectification plans were set accordingly. A case in point, this make DM internal users more aware of the capabilities and constraints of their services, where customer support team has established a more in depth knowledge of the issues facing their customers. With the overall success of this experiment of eWeek, Senior Management became more committed to the transformation primitives; and more importantly DM image was enhanced as a professional eServices provider for citizens and foreign investors.

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<sup>17</sup> -- Dirham is the currency of the UAE which is equivalent to 3.6 Dirhams for 1 US Dollar.

A summary of some of the general statistics occurred during the Online Week campaign is shown in Table 5.8 below.

| <b>Description of Items</b>                                      | <b>Total</b> |
|--|--------------|
| <b>No. of customers visited Online Week Stand</b>                | 1,179        |
| <b>No. of Trained customers</b>                                  | 458          |
| <b>No. of newly registered users</b>                             | 1,852        |
| <b>No. of newly introduced services</b>                          | 27           |
| <b>No. of online Transactions</b>                                | 294,646      |
| <b>No. of online Transactions of the involved departments</b>    | 224,747      |
| <b>No. of online Payments amount</b>                             | 47,081,637   |
| <b>No. of online Payments amount of the involved departments</b> | 2,416,434    |
| <b>No. of online Payments</b>                                    | 14,051       |
| <b>No. of online Payments of the involved departments</b>        | 13,451       |
| <b>No. of e-surveys.</b>   | 1009         |
| <b>No. of visitors to Online Week website</b>                    | 2,459        |
| <b>No. of involved departments</b>                               | 5            |
| <b>No. of involved online services</b>                           | 262          |

**Table 5.8: General Statistics Occurred During The eWeek**



## 5.5.5.4 DM eService Analysis

After the implementation of the Online Week, each department was asked to provide a daily report on total no of calls, and visits received at the department's counter. Table 5.9 below shows the statistics for a selected week. These statistics will identify the areas that DM and concerned department need to focus on to improve the quality of service provided to customers.

| <b>Department</b>              | <b>Service Name</b>                               | <b>Total Visits</b> |
|--------------------------------|---|---------------------|
| <b>Public Health</b>           | Consignment Follow up                             | 215                 |
| <b>Planning and Surveying</b>  | Site Plan   | 97                  |
| <b>Public Health</b>           | Item/Barcode Registration                         | 58                  |
| <b>Drainage and Irrigation</b> | Drawing discussions                               | 41                  |
| <b>Drainage and Irrigation</b> | Request for application for fees                  | 38                  |
| <b>Public Health</b>           | Health Certificates and ePayment                  | 30                  |
| <b>Public Health</b>           | EServices Registration Related Inquiries          | 29                  |
| <b>Drainage and Irrigation</b> | Request for application for house connection      | 26                  |
| <b>Planning and Surveying</b>  | Demarcation                                       | 25                  |
| <b>Environment</b>             | Importation of Dangerous Goods                    | 23                  |
| <b>Drainage and Irrigation</b> | Request for Application for Irrigation Connection | 19                  |
| <b>Planning and Surveying</b>  | Planning Permits                                  | 6                   |
| <b>Drainage and Irrigation</b> | NOC Inquiry                                       | 5                   |
| <b>Drainage and Irrigation</b> | Request for application for ground water primmest | 4                   |
| <b>Drainage and Irrigation</b> | Temporary Connection                              | 4                   |
| <b>Environment</b>             | Clearance for Industrial Products                 | 2                   |
| <b>Environment</b>             | Waste Disposal Services                           | 1                   |

**Table 5.9: Residents's Visits Per Week**

## 5.5.5.5 DM Issues of ePayment

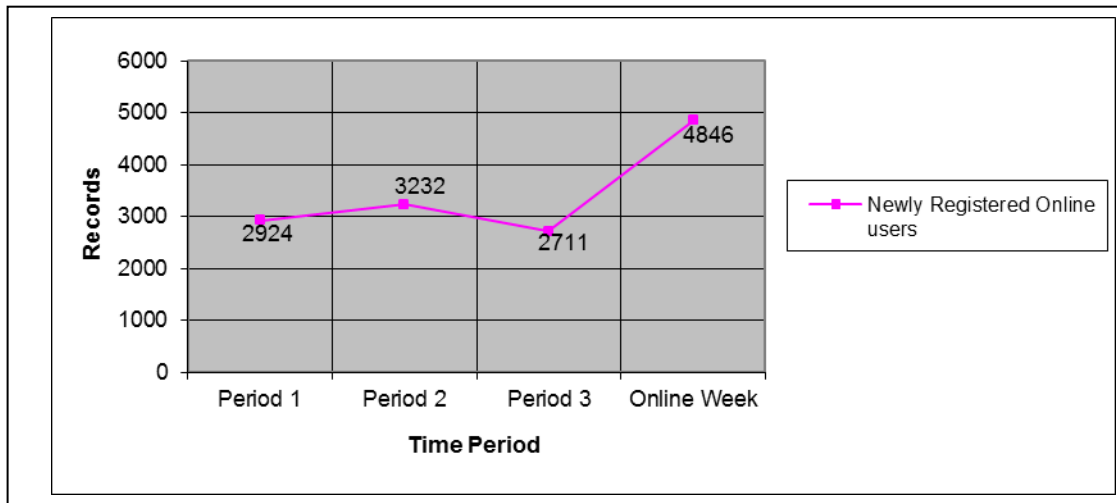
The results of all six departments with regard to ePayment are shown in the Figures 5.6 (appendix). They show all concerned departments that identify the ePayment and manual payment levels before Online Week, during Online Week, and after Online Week. The triangle line indicates the Online Payment and the cross line indicates the Manual Payment. The Environment Department graph, for example, shows that ePayment have been increased from 38 to 48. The overall manual payments are not so high compared to the ePayment and most of the manual payments are for payment of hygiene fines service.

As a result of the analysis in the previous section with regard to payment the following analysis was produced to further focus on the core of the problem. The results are shown in Table 5.10 below which lists the number of customers with the issues concerning ePayment and the corresponding department.

| Issues using ePayment / Departments       | Environment | Health     | Drainage  | Planning   | Building Studies | Building Permits | Total |
|---|-------------|------------|-----------|------------|------------------|------------------|-------|
| I have no issues with ePayment            | 37          | 53         | 13        | 30         | 35               | 121              | 271   |
| ePayment is not available to my eServices | 13          | 28         | 7         | 23         | 14               | 50               | 116   |
| I don't have a credit card                | 7           | 10         | 7         | 12         | 9                | 15               | 38    |
| ePayment is not trustable                 | 6           | 7          | 6         | 5          | 5                | 14               | 20    |
| eDirham is difficult to get               | 19          | 29         | 14        | 47         | 33               | 91               | 207   |
| I prefer to pay in cash                   | 34          | 76         | 14        | 70         | 38               | 153              | 368   |
| <b>Total</b>                              | <b>95</b>   | <b>186</b> | <b>35</b> | <b>168</b> | <b>116</b>       | <b>411</b>       |       |

Table 5.10: DM Issues with ePayment

The online user registration graph in Figure 5.6 represents the trend of the newly registered customers every three months compared with the Online Week period. This snap shot is taken approximately over a year, starting from January 2007 to December 2007. The graph in Figure 5.6 below shows that an increase from 2924 to 4846 which is almost a 40% increase.



**Figure 5.6: Trend Of Online User Registration**

The Online Week provided DM senior management with different strategic insight, that made this interactive process morerewarding and provided deeper understanding to know exactly what does it take to bring government to people, and reach 100% adoption rate. The major obstacles and barriers that were identified toward for a full transformation are: the lack of knowledge of customers on how to use the eServices, and the frequent slow down in DM portal<sup>18</sup>, such as the difficulty in sending large attachments, the lack of integration and missing links between DM portal and other departments, the lack of awareness of the existence of new eServices, insufficient and unreliable support from call centre, some un-user

<sup>18</sup> -- An Internet Portal is a structured website that provides a point of entry into an array of structured web contents. The individual contents are grouped together by the portal provider and made available to stakeholders. There are different views of portals:

\* Microsoft view of portals [Portal builds on the document-centric paradigm popularized by OfficeDocument sharing, collaboration should be the defining features of any portal for increasing team and organizational productivity]

\* IBM view of portals Portal provides a single point of aggregation for user interaction with people, applications and data across an enterpriseDocument sharing, collaboration are but two of many requirements for an enterprise portal (e.g. content management, personalized content, enterprise integration)

friendly eServices procedures, and some specific ePayment issues. DM aims to provide a portal that is multi-functional and make a multiplicity of various information and services available at a single location. The basic prerequisite for the success of a portal is the optimum makeup of the contents which is prepared according to various roles.

The ePayment was clearly identified as a main and critical barrier to the use of online service. There were about 30% of customers who had no issues with ePayment, about 12% of the users were not aware that they could pay online, 21% found it difficult to get eDirham cards, and 37% preferred to pay in cash. It was rather unfortunate that the Online Week didn't have a remarkable impact on ePayment since, and perhaps due to cultural dimension, the majority preferred to pay by cheque or cash and not willing to use ePayment.

The benefit of this online week has brought to the forefront the financial matter of ePayment. This issue need to be studied and looked at carefully in a different perspective. Whereby, a strong incentives and innovative ideas need to be introduced with the cooperation of management executive office, banks, and media. The promotion of payment by direct debit need to be more fostered and implemented in more banks with massive advertisement campaign; by making the eDirham machine more flexible with the customer's requirements, and DM need to find a way to replace the cheque payment method for future transactions. During the Online Week a considerable experience was gained on the type of needs those customers were facing when using the online services. Unlike the normal counter windows, the Online Week stand also succeeded in helping the department's employees to orient and introduce the customers to the un-used eServices. Some customers would prefer to use the express service where they can simply submit their request and pay an extra charge to get all transaction filled for them and done with a short limited time. However, this should be phased out gradually in order to encourage more use of online services.

The Dubai Municipality with its commitment for a digital future continued measuring the performance of the eServices well after the campaign period. Unfortunately after the Online Week not all the departments were committed to discourage manual transactions. However, DM continued with its determination in monitoring the type of services that got the most visits and calls, and has produced a ranked list of them for expected re-engineering (high physical visits), or providing online help (high phone calls). The customer centred approach was achieved in essence by tying the customers and employees to online services. The results in Table 5.11 below provide a summary of total savings for customer and DM benefits.

| Department                                   | Online Week Transactions | DM Saving/ Transaction | Customer Saving / Transaction | DM Savings       | Customer Savings | Total Savings    |
|--|--------------------------|------------------------|-------------------------------|------------------|------------------|------------------|
| <b>Environment (29 eServices)</b>            | 23,168                   | 24                     | 22                            | 556,032          | 509,696          | 1,065,728        |
| <b>Public Health (62 eServices)</b>          | 174,638                  | 22                     | 18                            | 3,842,036        | 3,143,484        | 6,985,520        |
| <b>Drainage and Irrigation (9 eServices)</b> | 1,422                    | 24                     | 20                            | 34,128           | 28,440           | 62,568           |
| <b>Planning and Surveying (61 eServices)</b> | 6,339                    | 20                     | 16                            | 126,780          | 101,424          | 228,204          |
| <b>Building Studies (26 eServices)</b>       | 8,917                    | 24                     | 25                            | 214,008          | 222,925          | 436,933          |
| <b>Building Permits (75 eServices)</b>       | 10,263                   | 32                     | 27                            | 328,416          | 277,101          | 605,517          |
| <b>Total Savings</b>                         |                          |                        |                               | <b>5,101,400</b> | <b>4,283,070</b> | <b>9,384,470</b> |

**Table 5.11: A Summary Giving The Total Cost Savings During The Online Week**

In achieving the aim for understanding and encouraging a move from eGovernment to tGovernment, the Online Week could be seen as a successful pilot study to realize the ‘Zero Visit’ vision. Motivating online usage of eServices should be seen as a continuous process not an occasional endeavour. Based on those achieved results and findings, it could be concluded that a 100% e-adoption is possible, over time, and a 50% target of ePayment could be reached within one year time plan. However, this requires a considerable effort and dedication from different teams that goes beyond the responsibilities and capabilities of one single department within DM.

In order to help businesses Dubai Municipality has launched a new initiative under the name of ‘DM Projects Systems’ on the website, [www.projects.dm.ae](http://www.projects.dm.ae). This is a pioneering initiative, the first of its kind in the field of government transparency in the UAE, allowing

customers to access more information, in particular for the benefit of the private sector, for which accurate and up-to-date information is of vital importance. The website is an integrated database of all projects executed by Dubai Municipality. These projects are divided into different categories: Dubai Coastal Zone; Historical; Recreational; Governmental; Educational; Horticultural; Maintenance; and Drainage Sewage. Accessing those are made easy which will give a list of all projects in a particular category that will appear on the screen. Every project has a detailed card with a photograph or 3D representation. The card contains the following information:

- Start and completion dates of the project
- Developer and business owner
- Consultant-contractor/supplier

This in addition to the Sector, current status, estimated cost, project brief and project description. The website allows all stakeholders to have a closer look at DM projects. This kind of information has an influence on property prices and level of facilities offered in these areas.

Transparency is a key for good governance which Dubai Municipality is aiming to achieve. Accessibility to government information is one of the key factors when international institutes evaluate a country's electronic transformation, as access to information leads to preserving public financial resources and provides a fair chance to all companies to identify business opportunities on quality and performance standards. On the other hand, open access to this kind of information is vital for businesses as it enables them to better plan their investments and make informed decisions. Moreover, it effectively diminishes nepotism and corruption, generating a healthy business environment governed by positive competitiveness. The initiative is in line with the overall approach adopted by Dubai Government departments to make government-related information open to all through electronic channels.

### *5.5.5 Lessons learnt and themes*

The main positive outcome of the electronic Online Week was to enable better policy outcomes, higher quality services and greater engagement with citizens and stakeholders. Governments and public administrations will, and should, continue to be judged against these established criteria for success. The leadership of Dubai Municipality instigated transformational government initiatives refocused attention on a number of issues: how to collaborate more effectively across departments and agencies to address complex, shared problems; how to enhance customer focus services and engage stakeholders; and how to build and sustain relationships with private sector partners. Public administrations must address these issues if they are to remain responsive and more competitive, which is the aim of DM in particular and Dubai Government in general.

The campaign succeeded to send a clear message to all stakeholders that DM is very serious, with senior management committed and capable of providing integrated eServices. As a result many customers have expressed their interest in using the electronic channels as the preferred choice for submitting applications. However, it is evident that a long path is expected to reach 100% usage, or adoption. This is not only in the submission phase but also throughout the entire application process. There is a set of strategies that need to take place in order to overcome all the observed weakness and problems that were discovered during the onlineWeek campaign. The customers during the onlineWeek stand have been categorized as the following, starting with normal users: they resemble any new user who is willing and can use the online services. These new users need to get the adequate training on the online usage, where concerned department employee need to inform them with all services they need to register for, and then let them to do the submission by themselves to experience the eServices. The second type is the computer illiterate users who don't know how to use the internet and not willing to work with online services. Usually most of those users are old people who use public services, they don't agree with the idea of registration and prefer to finish any transactions manually. The last group are those who prefer to use the express service facility and be treated as VIPs. At this point, the eGovernment section has created this group especially for those users who are willing to pay extra sum and would like to finish their transaction fast.

It is interesting to report that during the planning and surveying OnlineWeek, it was found a user who rejected the usage of online services and asked for special and quick operation, this user lately went to the Director Office to get his transaction done quickly. So the eGovernment section found the necessity of treating this particular group specially and provide all DM customers with all possible satisfying treatment. Hence, keeping some channels open similar to other countries such as Australia, for example.

In addition to the training and awareness that needed to take place, it was also found it is essential for DM to use the onlineWeek stand as a place to advertise and start all the electronic activities available at DM, such as the complaint system where the opening was through the onlineWeek stand. It was recommended that the eGovernment committee plays major role in sponsoring such an "e-adoption" program, with direct support from the Director General office. It should be empowered to impose new policies, rules, and incentives that can get the recommended plan implemented with ease and success. Furthermore, the implementation of quality management to cater for the eServices catalogue, with the proper required changes based on the new DM organization structure. Also the designing of a complete information data-bank should be in place to incorporate all eServices with all reporting facilities.

The future need for seamless integration is to provide a common view of information from all the data-bank systems. The handling of this complex information requires the effective management of multi-channels; e.g. if a customer needs to contact the Service Department as well as the Planning Department by telephone, a call is either transferred to the Customer Services or the Survey Department. This makes call handling difficult, inefficient and reduce the number of calls answered to offer effective services to the customers. Therefore, as part of this integration strategy it is planned that by using CRM system as the front office linked to the existing back office applications, a common view of information held in all back office applications could be achieved. In addition, using the call centre facilities of CRM system, a single call answered from a customer can solve queries regarding various departments, handled by one agent. This will provide efficient provision of services, a higher number of calls will be handled and the long list of numbers (one for each department) is reduced to 'single point of contact'. Customers contact via mail or email also needs to be directed to the required department, using CRM system there is a variety of communication channels, which can be used, and all information processed from the CRM system.



Finally, the Dubai Municipality transformational effort has posed many questions and raised many issues where senior managements need to address. The benefit realization of transformed services gives rise to redesign those processes and implement Business Process Reengineering (BPR) as well as consider benchmarking for future development. This has the full support of senior management. Future research could attempt to investigate, some of the issues raised in this study, and new issues surrounding the tGovernment implementation. However, as reported earlier that using CRM system on its own is not enough; as there is a need to communicate with other applications at the back-office. Therefore, to communicate with other applications raises the need to effectively integrate CRM system with the back-office implemented applications. In this way it will lead to a single customer view of multi-channel interactions including internal employees as well as external customers and residents.

The reasons were:

- An improved understanding of how to undertake subsequent integration, supported by the tools and outputs developed as part of the eWeek project.
- A demonstration to other departments in Dubai that they can do similar activities depends on their organisational readiness.
- A far better understanding on how to deliver integration.
- A better relationship with stakeholders (in this case businesses and the public) to support the chances of good quality support in future.
- Develop a wide range of expertise in working with up-to-date integration technologies amongst employees in involved departments.
- Use this eWeek initiative as a catalyst for attracting additional funding for other similar projects.

## 5.6 Case Organisation Two– (DNRD)

### 5.6.1 Introduction

The second case study is that of the Dubai Naturalisation and Residency Department (DNRD) organisation, which employs around 2500 people. The DNRD is responsible for citizens' passports, issues entry permits (visas), residency permits, entry/exit to/from country and controls Dubai establishments. The DNRD also provides services and information to citizens, businesses and public administration in both languages Arabic and English as shown in Figure 5.7 below.

The figure displays two versions of the DNRD portal. The top version is in Arabic, showing a navigation menu with 'News & Events', 'Profile', 'Transactions', 'Inquiries', 'E-Services', and 'Home'. It includes a search bar, a logo for Hamdan Bin Mohammed University, and a 'Latest News' section with four articles. The bottom version is in English, showing a navigation menu with 'ENGLISH', 'الصفحة الرئيسية', 'الخدمات الإلكترونية', 'استفسارات', 'المعاملات', 'تيدة عامة', and 'الأخبار والأحداث'. It includes a search bar, a logo for Hamdan Bin Mohammed University, and a 'آخر الأخبار' section with three articles.

Figure 5.7: DNRD Portal Is In Two Languages, Arabic And English, Where The Default One Is Arabic

### 5.6.2 Background to DNRD eGovernment Strategy

- **1971** Pursuant to an order promulgated by the Late Ruler of Dubai H.H. Sheikh Rashid Bin Saeed Al Maktoum, the two following departments were established:

1. Central Immigration Department
2. Ports and Borders Department

- **1972** The two above mentioned Departments were joined to Ministry of Interior and Federal Law

no. (17) that concerns naturalization and passports was promulgated to regulate naturalization and passports.

- **1973** Federal Law no. (6) concerning Immigration and Residency was promulgated as the first law regulating the entry and residency of expatriates in United Arab Emirates. The Central Administration became the authority in charge of implementation of naturalization, residency, passports, entry and residency permits in UAE.

The Administration shifted to a 3-rooms office near Clock Tower, consisting of the following:

1. Room for the Administration
2. Room for Control Section (Monitor and Investigation)
3. Room for Entry Permits Section and Residency Section

- **1977** The two departments were integrated, and the new Department shifted to a building in the ministry compound.

1. Ports and Borders Department
2. Central Immigration Department
3. Naturalization and Residency Department  
Department of Naturalization and Passports for family registration cards and passports issued to citizens of United Arab Emirates, as well as others involved transactions.

The following departments with brief descriptions within DNRD that play an important role for the development of Dubai as a business hub:

### 5.6.2.1 Departments at DNRD

- **Department of Entry Permits**

It involves issuing residency visit as well as work permits to workers and domestic helpers

- **Department of Monitor and Investigation**

It has a major role in monitoring applications for adjustment of status, reports about absconders and violators of Residency and Naturalization laws, payment of fees and other procedures

- **Department of Administrative and Financial Affairs**

It involves management of human and financial resources, issuing of establishment cards to various companies, establishments and public relations officers in addition to collection of revenues and fees as well as audit of accounts and other functions.

- **Department of Information Technology**

This Department is responsible for preparation of necessary programs for the smooth and quick progress of work, upgrading and development of software in line with fast-paced progress in information technology, and provision of equipment and programs to various sections

- **Department of Airports and Land Border Points Dubai International Airport**

The Airport processes passengers' entry and departure as well as issues business (transit) and visit visas, hence playing a major role in promoting commercial and tourist activities of United Arab Emirates in general and of Dubai in particular.

- **Hatta Border Point**

In 1999 Naturalization and Residency Administration, Dubai, established a branch at Hatta Fort building to facilitate procedures for UAE citizens as well as for other passengers and tourists crossing land borders. In cooperation with Hatta Fort Hotel, the Branch handles all procedures of passengers' entry and departure as well as other transactions involving UAE citizens

- **Department of Seaports Port Rashid**

The Port accommodates large numbers of tourists and passengers through two sea lines linking Port Rashid to both Bandar Abbas and Bandar Linka Ports in Iran, as well as Umm Qasr Port in Iraq. Port Rashid also accommodates large-size shipping vessels, known as containers, in addition to large-size cattle vessels, as well as a special pier for naval ships

- **Shindagha Port**

It is a crossing point for security checks conducted on sailors aboard wooden dhows, and also handles loading and unloading of cargo. Shindagha Port Passports Section issues debarkation permits for sailors and holds their cards until their departure from the Creek

- **Hamriya Port**

This Port accommodates all sizes of wooden dhows and medium-size vessels, and is considered the country's vital navigation artery linking UAE to neighboring countries such as Iran, Pakistani, India, Somalia and GCC countries. It accommodates wooden dhows which arrive loaded with goods on board and is considered a busy port actively contributing to a significant part of UAE revenues.

- **Jebel Ali Port**

It was inaugurated in 1995 to issue various kinds of visit, employment and residence permits (new and renewed residence permits), cancel and extend validity of visit visas, process reports about absconders, issue and renew cards of public relations officers online, which is a characteristic activity to this Port.

- **Dubai Dry Docks**

It includes large docks prepared to accommodate all sizes of ships for repair at request. Debarkation permits are issued for sailors for one week only and can be extended for a further period.

To ensure easy access to services and to move closer to citizens, visitors and residents DNRD opened the following centres in the public places: Abu Hail Center; Bin Suqat Center; Al-

Dewan Center; DNATA Center; Emirates Airlines Office Center; DNATA Aviation Center; and Hyatt Regency Center.

### 5.6.3 Example of eGovernment implementation leading to transformation

Taking into account globalisation and the dynamic change of the Gulf Region, to create an atmosphere of trust and reassurance to all citizens, visitors, and residents of Dubai, Major general Director of General Directorate of Residency and Foreigners Affairs-Dubai states:

*“We live in a world where technology and digital communication are developing at a record pace, and information is becoming more and more valuable and vital for both private and government entities. The UAE government in general and Dubai in particular is actively involved in this evolution. Effectively, our national strategy for the next few years includes practical steps to support the decision made by our leaders to develop the UAE to the top global ranks in terms of eGovernment applications and offerings by providing the best online services that meet the highest international standards and the customers’ various needs. Subsequently, DNRD upgraded its eServices including the e-dnrd and the e-form applications to allow ‘customers’ to upload their forms and visa applications and manage their transactions online in line with highly protected and secured protocols that prevent any kind of falsification or piracy.*

Moreover, The Director Major General highlighted that cooperation is part of the strategy to address stakeholders concerns and quality responses:

*“.....In addition to that, DNRD cooperates with Dubai’s Executive Office, to offer customers a link to the e-complaints system, which earned a special acknowledgement during the last Dubai Government Excellence Programme 2008. And last, but not the least, General Directorate of Residency and Foreigners Affairs-Dubai provides the ‘Amer’ service, a 24/7 service that gives many communication options such as the toll free number 800-5111, fax number 04-3981177 and the website [www.amer.ae](http://www.amer.ae) whereby customers can ask for information, offer suggestions or lodge complaints”*

Adding further, which is part of the transformation agenda, where applying process reengineering to make interacting with agencies smoother, and offering better experiences for a quality service::

*“.....we at General Directorate of Residency and Foreigners Affairs-Dubai are strengthening our efforts further to gain our customers satisfaction therefore we are applying even simpler procedures and encouraging employees’ best performance to increase productivity and offer the best services to the public. And we strive to continuously improve our offerings to meet your needs so I invite you to share your thoughts and concerns with us through any of the channels available”*

In extending the multi-channels offering and making it easier for residents to obtain government services, the ‘Amer’ system self service kiosk has been launched in Al Tawar Center and it was fully operational 24/7. DNRD’s objective with introducing AMER which is a kiosk built to serve the purpose of efficiency to its costumers. This kiosk system will provide services which is able to print visas whether it is residency or visit, with this service can also inquire about the status of the visas before printing. This service is devised so that the costumer does not need to reach DNRD’s counter to retrieve their visas however the processing is made not at AMER but at DNRD’s designated locations. The services provided on ‘AMER’ kiosk systems are the following: Visa (residency/visit) inquiry; Visa (residency/visit) printing; Visa original printing (online); Visit visa extension printout; and Passport Renewal request form. This can be accessed through the website shown in Figure 5.8 below.



**Figure 5.8: DNRD Main Login For Registered Users. Portal Is In Two Languages, Arabic And English, Where The Default One Is Arabic.**



#### 5.6.4 Motivations for tGovernment Implementation and challenges

The launch of the revamped portal and eJawaz was made at a press conference held in Dubai along the sidelines of the Dubai eGovernment participation in GITEX19 Dubai 2002. The new portal offers extensive packages and channels that enable users to access the various eServices being offered with ease. In addition, Dubai eGovernment also launched eJawaz, the Single-Sign-On facility that provides users online access to all government services through a single, unified and personalized method. Where eJawaz will facilitate users of the eServices provided by the various government departments, to login to the eGovernment portal, get validated and authenticated by the various government departments as registered and recognized users. Addressing the press conference Director of eServices, Dubai eGovernment said:

*“The eGovernment portal has entered a crucial phase which entails the gradual integration of the Web services of the different Government departments towards a unified portal, with a uniform look running through the individual Web offerings. The new version uses a sophisticated content management system that facilitates easy decentralized portal management, allowing each government department the freedom to manage its own content, while remaining an integral part of the portal.”*

The portal (Dubai.ae) hosts a wide range of services offered by the government departments targeting various segments of the community including the business sector, and individuals. The website offers users several interactive services that include both service packages and channels. The key services available for businesses on the portal ranges from issuing and renewing of trade licences, certificates of origin and trademarks to the membership to the Dubai Chamber of Commerce and Industry (DCCI). As for individuals they can also access the website to settle bills and payments with different government departments, or renew visas.

In addition as this website is Dubai government's window to the world, the portal (Dubai.ae) also offers several private sector services like hotel reservations, car rentals, leasing of houses and eBanking. Also the portal is a one-stop point of comprehensive general information

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<sup>19</sup>-- (GITEX) is an ICT exhibition held annually in Dubai over a 4 days period where international as well as local technology companies provide their products and services.

regarding the Emirate of Dubai and also includes a useful interactive map. The system is user friendly appearance that allows users to move easily through the entire portal downloading information or accessing interactive channels. Services of a similar nature have been categorized under terms namely: Business, Education, Employment, Health, Housing, Justice and Security, and Tourism. In order to gain full access to eJawaz, the user has to first register by providing a user ID, password, first and last name and an email address. The access will be verified by Dubai Naturalization and Residency Department's (DNRD) database, which validates and authenticates the identity of the user. After registration, the user is taken to a personalized welcome p., giving access to any government service.

The Director of eServices Dubai eGovernment further added:

*“eJawaz provides a hi-tech and secure access to Government services through pre-registration aimed at ensuring that the user gets quick access, high quality and personalized services. Registration ensures that the system recognizes the user and enables him to browse through Dubai government websites for information, transactions or downloading and submitting forms.”*

The director further commented that working towards a common integration platform with Dubai eGovernment has been a truly rewarding experience and no dramatic change would be realised without the support of senior management of government departments.

Head of IT Section of Dubai Naturalisation and Residency Department (DNRD) said:

*“We are pleased to be part of the e-Jawaz Single Sign On facility because it heralds a new era in seamless integration of various government departments. Our role as the verification authority is to ensure that only those eligible to avail of the Government services are provided access through eJawaz. In this manner we can also guarantee that genuine users get top quality service in keeping with the eGovernment's vision of providing online services of global standards, using best of breed technologies.”*

In the event of an invalidated user attempting to access an eServices requiring validation, the user will be taken through the necessary validation process via an interactive window. This requires the user to either provide his unique identifier with DNRD, which the system will

check in real time or complete the interactive process of validation by following the message alerts.

The initiative by DNRD to link with the department of health has brought substantial benefit to both departments. The Department of Health and Medical Services (DOHMS), the first government department to demonstrate the benefits of full integration with the Dubai eGovernment portal and the hosting facilities it provides, will be highlighting many of its services online through the portal. This gave the user the ability to check results online as shown in Figure 5.9 Below.

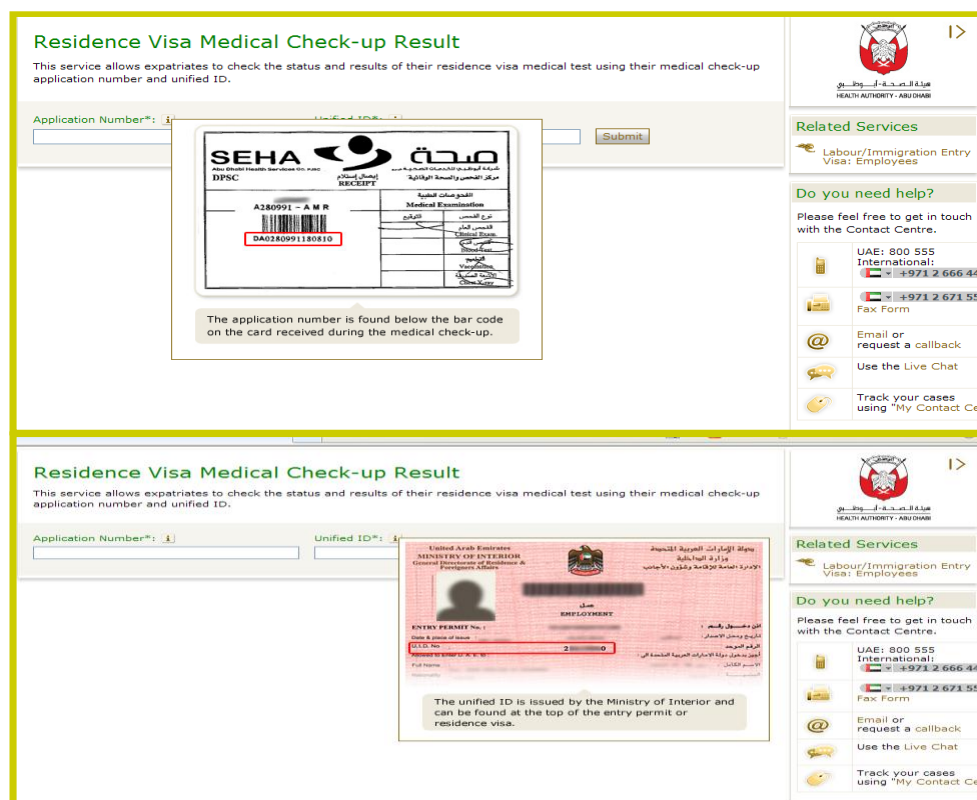


Figure 5.9: DNRD Residence Visa Medical System for Check-up Results

Head of IT Section of Dubai Naturalisation and Residency Department (DNRD) said:

*“DOHMS is proud to be the first to achieve full integration with the portal and make use of the hosting services provided by Dubai eGovernment. This will help us provide*

*secure, high quality and scalable service through a robust infrastructure. We are excited about the scope this integration provides and we assure the public that DOHMS eServices will be extremely easy to use. Among the many services we will offer online are renewal of medical permits and renewal of health cards.”*

To strengthen this collaboration further and through a business process reengineering, a medical service (MedServe) was established. MedServe is a collaboration effort between Dubai Naturalization & Residency Department (DNRD) and Department of Health & Medical Services (DOHMS) to provide these services all in one place for residents' convenience and comfort. It is the first autonomous facility to provide medical testing, which is a mandatory requirement by the UAE Government, and stamping of customers' residence visa in their passport all under one location. MedServe has revolutionized the residence visa and medical procedure in Dubai. With time average of 20 minutes of a pre-scheduled appointment at a medical facility, MedServe takes care of residence visa and medical procedures and delivers resident passport to home within 48 hours.

The reengineered process involves the following four steps:

- Step 1.** Appointment is made by phone or online through [www.medserve.ae](http://www.medserve.ae).
- Step 2.** On arrival, passport is submitted along with the relevant documents required for registration.
- Step 3.** Attend to be examined by a doctor for the mandatory medical examination and to provide a blood sample and an x-ray (if required).
- Step 4.** Finally, escorted to the eGate area where fingerprint and photo are captured on the system, in order to process eGate card<sup>20</sup>, once certified for medically fitness.

When completed successfully, residence visa duly stamped in passport along with eGate and Health card, which are delivered by special delivery service to home within 48 hours.

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<sup>20</sup>-- The eGate Card is to facilitate entry into Dubai International Airport where there is no need for presenting passport.

The Director of Dubai eGovernment eServices concludes how important it is to have the management of government engaged in leading the change for transformational government. He expressed his thoughts by saying:

*“Dubai eGovernment is justifiably proud of its achievement to make travel an enjoyable experience and Dubai residents stay a pleasant one. This is particularly useful for our business community. As after months of intensivestudy and a learning process, the portal projects itself as an invaluable tool of communications forthe Government departments and a gateway to information and online transactions to the public.”*

He emphasized that the next phase will clearly demonstrate the full scope of integration with the eGovernment portal, and government departments will begin to realize the resultant cost effectiveness in running 24 hours/7 days operations through a centralized hub.

**The challenge is ‘five seconds’  
to go through Immigration at  
Dubai International Airport**



**Figure 5.10: DNRD eGate Card In Use At Dubai Airport**

The challenge was met when entering Dubai Airport where processing time instead of being measured by hours it was measured by seconds as the publicity shown in Figure 5.10 above. The brochure states in Arabic about the transition time challenge ‘5 seconds only to enter or exit Dubai Airport. This is in addition of the researcher’s own experience by obtaining an eGate card for free during a promotion campaign at GITEX 2005 issued in coordination with Dubai Police.

#### 5.6.4.1 Challenges facing transformational eGovernment systems at DNRD

This section aims to provide the perceptions of interviewees related to the importance of technical challenges facing the transformational eGovernment system at DNRD. Four stakeholders involved directly in implementation of eGovernment project interviewed using structured interviews. The interviewees were the Projects Manager (PM), Head of Information System (HIS), Programmer (Pr) and Sr. Network & Security Consultant (SNSC) (Interviewees were asked to identify the importance of technical challenges facing the transformational eGovernment system at DNRD. The level of importance presented in the following table follows a scale similar to that used by Miles and Huberman (1994). Table 5.12 summaries the perceptions of the interviewees when asked to identify the importance of each technical challenge.

| <b>Categorisation of Technical Challenges</b> | <b>Technical challenges facing transformational government system at DNRD</b>  | <b>PM</b> | <b>HIS</b> | <b>Pr</b> | <b>SNSC</b> |
|---|--|-----------|------------|-----------|-------------|
| <b>Post Installation software system</b>      | Maintaining high levels of performance and service availability<br>Trouble shooting technical problems   | ●         | ●          | ●         | ●           |
| <b>Technical standards</b>                    | Setting technical standards for all eServices  |           |            |           | ●           |
| <b>The capability of the infrastructure</b>   | The capability of the infrastructure in terms of handling the range and number of transactions   | ●         |            | ●         | ●           |
| <b>Security</b>                               | Ensuring the security of confidential data stored in government organisation databases<br>Ensuring privacy of the personal data that are provided by citizens & business in the process of obtaining government services   | ●         | ●          | ●         | ●           |
| <b>Financing</b>                              | Funds required to install system software and system computers   |           | ●          |           |             |
| <b>Back-end servers</b>                       | The back-end servers (communication failures between internal system and the external web server)  | ●         | ●          | ●         | ●           |
| <b>System Compatibility</b>                   | Compatibility of eGovernment technology available to the internal system   |           |            | ●         |             |
| <b>Challenges of suppliers</b>                | Suppliers pressure to buy their solutions<br>False promises of suppliers<br>Exaggerated supplier prices  | ●         | ●          |           |             |
| <b>On-going concerns</b>                      | The evolution of the technology (there is always new technology)<br>The availability of technical resources (skilled employees of suppliers).<br>After sales support (from suppliers)<br>Viruses and worms have come from the connection with other departments or companies |           |            | ●         |             |

Table 5.12: Technical Challenges Facing Transformational Government (DNRD)

This section aims to provide the perceptions of the interviewees related to the importance of organisational challenges facing the transformational eGovernment system at DNRD. Four stakeholders involved directly in implementation of the eGovernment project were interviewed using structured interviews. The interviewees were the Head of Information System (HIS), Head of Strategic Planning Section (HSPS), Deputy Section - Head of Operation (HO) and Manager of Section of Programming Applications (PA). Table 5.13 summarises the perceptions of the interviewees when asked to identify the importance of each organisational challenge.

| <b>Categorisation of Organisational Challenges</b> | <b>Organisational challenges facing transformational eGovernment system in DNRD</b>  | <b>IS</b> | <b>HSPS</b> | <b>HO</b> | <b>PA</b> |
|--|--|-----------|-------------|-----------|-----------|
| <b>Reengineering of internal processes</b>         | Double process front-end (the interaction between government organisations and its stakeholders needs to be offered in both a traditional manner and also through the internet).   | ◇         | ◇           | ◇         | ◇         |
| <b>Reengineering of internal processes</b>         | Time required reengineering and changing the internal business processes of the organisation.  |           |             | ◇         |           |
| <b>Reengineering of internal processes</b>         | Money required reengineering and changing the internal business processes of the organisation.   |           |             |           | ◇         |
| <b>New legislation</b>                             | Adopting new legislation to deal with new issues such as electronic receipts and digital signatures. The speed of introducing (adopting) new legislation   | ◇         |             | ◇         | ◇         |
| <b>Changes of organisational structure</b>         | Change of organisational structure   | ◇         | ◇           | ◇         | ◇         |
| <b>Employees</b>                                   | The lack of IT -skilled employees<br>Resistance to change (from traditional to electronic ways of working) by the employees represents a challenge<br>Changing the culture of employees government processes organised for the convenience of the should be Employees stakeholders rather than the convenience of the department). | ◇         | ◇           | ◇         | ◇         |

**Table 5.13: Organisational Challenges Facing Transformational Government (DNRD)**



#### 5.6.4.2 The consequence of organisational challenges

This section aims to provide the findings derived from analysis of the case studies from the data presented in regarding the importance of organisational challenges facing transformationaleGovernment systems; the additional organisational challenges derived from empirical evidence in the next section.

- Changing the culture of employees (government processes should be organised for the convenience of the stakeholders rather than the convenience of the department) was considered a very important challenge by almost all interviewees - except one who claimed that this challenge was important.
- The perspectives of interviewees were divided into two groups regarding the challenges of the lack of IT-skilled employees; the speed of introducing (adopting) new legislation; resistance to change (from traditional to electronic ways of working) by the employees represents a challenge as does the transforming of existing offline data to digitalisation. Some interviewees claimed that these challenges were very important while others claimed that they were important challenges.
- The time required reengineering and changing the internal business processes of the organisation and changes to the organisational structure were considered important challenges by almost all interviewees.
- There was disagreement among interviewees regarding the importance of the challenges of adopting new legislation to deal with new issues such as electronic receipts and digital signatures and double process front-end (the interaction between government organisations and its stakeholders needs to be offered in both a traditional manner and also through the internet).
- Some interviewees claimed that these were important challenges; others claimed that they were not important challenges.
- Due to the availability of money and the fixed budget provided by upper management, the money required to reengineer and change the internal business processes of the organisation were considered not important challenge by almost all interviewees.

#### 5.6.4.3 The consequence of technical challenges

The purpose of this section is to provide the findings derived from analysis of the data presented in previous section regarding the importance of technical challenges facing transformationaleGovernment systems; the additional technical challenges derived from empirical evidence, see next section.

- There was an agreement among interviewees of the two case studies that the following challenges are very important: maintaining high levels of performance and service availability, ensuring the security of confidential data stored in government organisation databases and eGovernment sites from attack and misuse and, ensuring the privacy of the personal data provided by stakeholders as part of obtaining government services.
- The capability of the infrastructure in terms of handling the range and number of transactions; 'the evolution of the technology (there is always new technology); viruses and worms that have come from connection with other departments or companies; after-sales support (from suppliers)' and, the back-end servers (communication failures between the internal system and the external web server) are considered by most interviewees as very important challenges - few claimed that these challenges were important.
- The perspectives of interviewees were divided into two groups regarding the challenges of troubleshooting technical problems, setting technical standards for all eServices, compatibility of eGovernment technology available to the internal system, the availability of technical resources (skilled employees of suppliers) and, false promises of suppliers. Some interviewees claim that these challenges are very important while others claim they are important.
- There was disagreement among interviewees regarding the importance of exaggerated supplier prices and the money required to install a software system. Some interviewees claimed that these were important challenges; others claimed that they were not important challenges.
- The funds that are required to provide more systems and supplier pressure to buy their solutions were considered not important challenges by all interviewees - except a few who claimed that these challenges were important.

#### 5.6.4.4 Categorisations of technical and organisational challenges

In light of the above discussion and to satisfy the aim of this thesis, the purpose of this section is to categorise those technical and organisational challenges from the perspectives of the interviewees of the two case studies (DM and DNRD), based on levels of importance. This categorisation could benefit decision making in other government organisations attempting to reach a transformationaleGovernment; it will allow them to pay more attention, focus on and give consideration to the challenges and try to minimise or avoid them.

#### Categorisations of technical challenges

As a result of the above discussions concerning the importance of technical challenges facing transformationalgovernment systems based on the empirical data presented in the categorisation of these technical challenges based on levels of importance. Additional technical challenges derived from empirical evidence (see previous section bullets), which constitute sub-themes are written in italics.

#### *Technical challenges facing transformational government system by case studies*

- Maintaining high levels of predominance and service availability
- Ensuring the security of confidential data stored in government organisation databases and eGovernment sites from attack and misuse
- Ensuring privacy of the personal data that are provided by stakeholders as part of obtaining government services
- The capability of the infrastructure in terms of handling the range and number of transactions
- The evolution of the technology (there is always new technology)
- Viruses and worms have come from the connection with other departments or companies
- After sales support (from suppliers)
- The back-end servers (communication failures between internal system and the external web server)
- Troubleshooting technical problems
- The availability of technical resources (skilled employees of suppliers)
- Setting technical standards for all eServices False promises of suppliers
- Compatibility of eGovernment technology available to the internal system
- Exaggerated and over priced supplier equipment and services
- Money required to install a software system
- Money required to provide more hard wares
- Suppliers pressure to buy their solutions

#### 5.6.4.5 Sub-themes and Strategies for technical and organisational challenges

To realise the aims of this thesis, the purpose of this section is to provide strategies suggested for overcoming technical and organisational challenges as identified in proposed model facing transformationaleGovernment systems taken from the empirical data of the case studies presented in the previous two Sections. ‘Old formulated’ strategies means those already applied by the government organisations (DM and DNRD), while ‘recommended’ strategies means those formulated as a result of the empirical studies from the perspectives of interviewees based on their experiences. These strategies involving stakeholders could help other government organisations attempting to reach a transformationaleGovernment to overcome or avoid such challenges. It should be noted at this stage that, except for the strategies for overcoming security challenges, before collecting data from both case studies (DM and DNRD), part of the strategies for overcoming technical and organisational challenges facing transformationaleGovernment systems were based on information given by stakeholders in different government organisations that had, already reached an advanced stage of eGovernment system and from attending various workshops. However, these strategies have been derived from the empirical data, which are written in italics in the following section. Technical and organisational challenge(s) identified as a result of empirical data and their suggested solutions are also written in italics for overcoming technical challenges, this will be followed by strategies for overcoming organisational challenges.

#### Sub-themes of challenges of maintaining high levels of performance and service availability

- Training employees to deal with a new software system
- Learning from mistakes
- Consulting of specialist companies for particular problem
- Applications should be run from two servers (if one server is shut down, other will still be working)
- Specifying teamwork to monitor and make sure of availability of services
- Continuous evaluation of performance of system
- Proper planning, designing and implementation of infrastructure will lead to ensuring high level of performance and service availability
- Continuous maintenance of infrastructure (hardware and software)
- Taking technical precautions to ensure high level of performance and high level of availability.
- Solutions to challenge of troubleshooting technical problems
- Learning from mistakes
- Training of employees to deal with new software systems
- Minimising and dealing with problems as soon as possible
- Dealing with simple problems internally, complex problems might need consultancy
- Consulting of specialist companies for particular problems - only for a short time because long contracts with consultancies are expensive

- Specifying skilled specialist teams to deal with technical problems
- Good testing leads to fewer technical problems; if testing is done properly, then problems will be minimised
- Teamwork for testing and continuous assessment
- Documentation of all technical problems and solutions used for each of them that help in facing same problem in future.

Sub-themes of challenges to evolution of technology (there is always new technology)

- Following up with new technology continuously
- Stopping regularly every six months to evaluate performance of system
- Adopt standards for using technology among all parties of eGovernment system
- Build communities for evaluating new technology
- Conduct periodical meetings to discuss issues and barriers.

Sub-themes of challenges to challenge of setting technical standards for all eServices

- Learning from mistakes
- Consulting of specialist companies a good idea for building standards
- Setting technical standards should include developing standards (coding, design, architecture and documentation standards)
- Proper planning, designing and implementation of infrastructure
- Ensure chosen technical standard easy to be used by stakeholders.
- Training employees to deal with new software systems

Expectations of how many transactions will be processed online, and provide extra margins of more than 20-30%. Some interviewees said extra margin should be not less than 50%

- Continuous reviews of infrastructure and number of transactions it can handle
- Provide flexible or expandable infrastructure by adding more servers that can provide better performance for extensive users
- Good design of infrastructure (design should be flexible) followed by good planning and good monitoring
- Use of particular switch or machine (Load balancer) that controls and distributes load among servers
- Good monitoring to show what daily position is, that is, how many transactions services carried out.

Sub-themes of challenges to challenge of ensuring the security from attack and misuse of confidential data stored in the government organisation databases and eGovernment sites

Specify official responsible for computer security

- Assess systems regularly to make sure security precautions are being implemented
- Backup information continually and store backup in separate location
- Provide ongoing training to employees on computer security

- Ensuring data level security which protects the data from unauthorised access, whether data residing in database (encryption) or travelling (through SSL and/or encryption)
- Ensuring application level security, which makes sure no holes in application that allow illegal access to certain data or other applications
- Ensuring infrastructure level security which protects whole infrastructure from hackers and intruders, and that is by setting up all sorts offirewalls, network authentication, etc.
- Create security policy document approved by top level of management. Policy should be reviewed and upgraded continuously
- Consult specialist company, especially in test stage of project, and to help create security policy document
- Ensure physical security
- Choose right infrastructure which is easy to maintain and ensures high levels of security
- Top management should understand importance and requirements of security issues
- Involving only trustworthy employees on security issues
- Adopting regulations that ensure securityof data.

Sub-themes of challenges to challenges of ensuring privacy of personal data provided by residents as part of obtaining government services

- Limit access to personal identifiable information
- Train government employees in importance of privacy
- Raise awareness of employees about importance of privacy of data
- Limit information taken from stakeholders to the level that is really required
- Raise awareness of residents about importance of privacy.

Sub-themes of challenges to security issues such as viruses and malicious programs from connection with other departments or companies

- Use different layers of virus protection and use multiple technologies and products such as different antivirus packages and other technologies such as integrated internet protection solutions
- Keep system patched with latest security updates
- Regular upgrading and updating of system with the latest anti-virus software
- Limit access to other departments and do not allow any unsecured connection with any devices.

Sub-themes of challenges to challenge of money required to install software system

Buying technology in phases in order to spread cost over several years

- Leasing equipment and technology could be one of the solutions.
- Solutions to challenge of money required to provide more hardware
- Specifying fixed budget to buy software systems and computers
- Buying technology in phases in order to spread cost over several years.

Sub-themes of challenges of back-end servers (communication failures between internal system and the external web servers)

The programmer reported that tool used in the DNRD for this purpose

- Use tools to monitor availability of network. Head of Internet (Operation Unit) reported that the tool used in the Dubai Municipality for this purpose is Site Scope. Sr. Network & Security Consultant reported that the tool used in the
- (DNRD) for this purpose was CISCO systems
- Provide reliable integration tool between web application and back-end system
- Continuous evaluation of system
- 24 hours operation staff should be available.

Sub-themes of challenges to challenge of compatibility of eGovernment technology available to internal system

Sub-themes of challenges to ensure high compatibility level

- Invest in strong integration solutions
- Try to identify solutions compatible with internal system.

Sub-themes of challenges of empty promises of suppliers

- Include clear and strong conditions (penalties) within contract and follow implementation of these conditions
- Limitation of suppliers based on needs of organisation.
- New software and hardware should be tested in organisation's environment before new technology is bought
- Research through internet to find good supplier and offer
- Adopting of clear contract called Service Level
- Agreement with strong penalties, and selecting famous companies.
- Solution(s) to challenge of exaggerated supplier prices
- Deeply studying all offers and choosing best, based on requirements of project.
- Solutions to availability of technical resources (skilled employees of suppliers)
- Looking at history of companies and choosing ones with experience and good reputations
- Meeting of technical staff of suppliers before project start
- Adoption of evaluation and assessment procedures for choosing suppliers, and replacing them in initial stage as soon as discovering that they will not be capable of handling project.
- Solutions to after sales support (from suppliers)
- Asking other organisations about the reputation of supplier, selecting suppliers carefully and studying suppliers' history (such as previous projects, other customers, integrity etc.)
- Writing contracts and agreements extremely carefully
- Including reference to after-sales support with penalties, in all contracts.

Sub-themes of challenges of lack of skilled employees

- Training of employees
- Encouraging employees by giving them prizes (money, certificates) to train to deal with new technology
- Bringing (contracting) new skilled people not only to train employees but also to deliver new technology and be a good example to existing employees
- Consulting specialised company
- Continuous upgrading of knowledge of employees about new technology.

Sub-themes of challenges to resistance to change (from traditional to electronic ways of working) by employees

- Arranging workshops for employees to upgrade knowledge of eGovernment
- Raising awareness of eGovernment by sending e-mails to employees describing importance and benefits of eGovernment to stakeholders and employees
- Assuring employees that eGovernment will not affect negatively the authority and jobs of employees
- Managing change early in the project
- Starting from top-down by convincing operation management of importance and benefits of eGovernment.
- Solutions to challenge of changing culture of employees
- Raising awareness of eGovernment by arranging presentations and sending e-mails to employees describing importance of eGovernment to stakeholders and employees
- Arranging workshops for employees to upgrade their knowledge of eGovernment
- On-the-job training on using eServices
- Training employees in stakeholder service concepts
- Arranging workshops for both stakeholders and employees
- Solutions to challenge of transforming existing offline data to digitalisation
- Identifying the data that need to be digitised from the beginning of project
- Using technical solutions such as databases
- Consulting specialist companies and benefiting from their experience
- Studying size of this challenge
- Identifying most important data and give them priority to be digitised.

Sub-themes of challenges of double process front-end

- Dividing employees into two groups: one to handle internet services, the other to handle counter services, ensuring both groups can do both traditional and internet work.

Sub-themes of challenges of time required to reengineer and change internal processes



- Defining requirements and the needs of reengineering
- Reducing cycle of approval to minimum
- Creating timetable for doing tasks
- Dividing responsibilities among employees
- Starting with most important tasks.
- Solution(s) to challenge of money required to reengineer and change internal processes
- Support of leadership and specifying fixed budget.
- Solutions (in general) for dealing with various challenges of reengineering of internal processes
- Ensuring employees' awareness of importance of the reengineering of processes
- Ensuring employees' awareness of benefits of the reengineering of processes before moving them to eGovernment
- Ensuring enough time provided for project team to work on reengineering processes
- Involvement of all levels of employees in reengineering processes
- Including everyone affected by process of re-engineering (manager, employees and stakeholders (if possible))
- Consulting specialist companies, especially in first phases of project where eGovernment knowledge is very limited and resources low. (Head of eGovernment services in Dubai Municipality claims this solution used for almost all organisational challenges).

Sub-themes of challenges of adopting new legislation to deal with new issues such as electronic receipts and digital signatures

- Support of higher management inside organisation
- Defining legislation that needs to be changed or introduced in order to facilitate reaching organisational transformation to eGovernment
- Benefits from e-commerce legislation
- Benefits from experience of other organisations.

Sub-themes of challenges of speed of adopting new legislation to deal with new issues such as electronic receipts and digital signatures

- Support of leadership
- Good planning from start of project
- Enhancing work process.

Sub-themes of challenges of changes to organisational structure

- Convincing management of importance of structural changes and requirements
- Identifying need for structural changes to organisation
- Adopting new organisational department(s) to ensure success of eGovernment project
- Consulting specialist companies, especially in first phases of project.

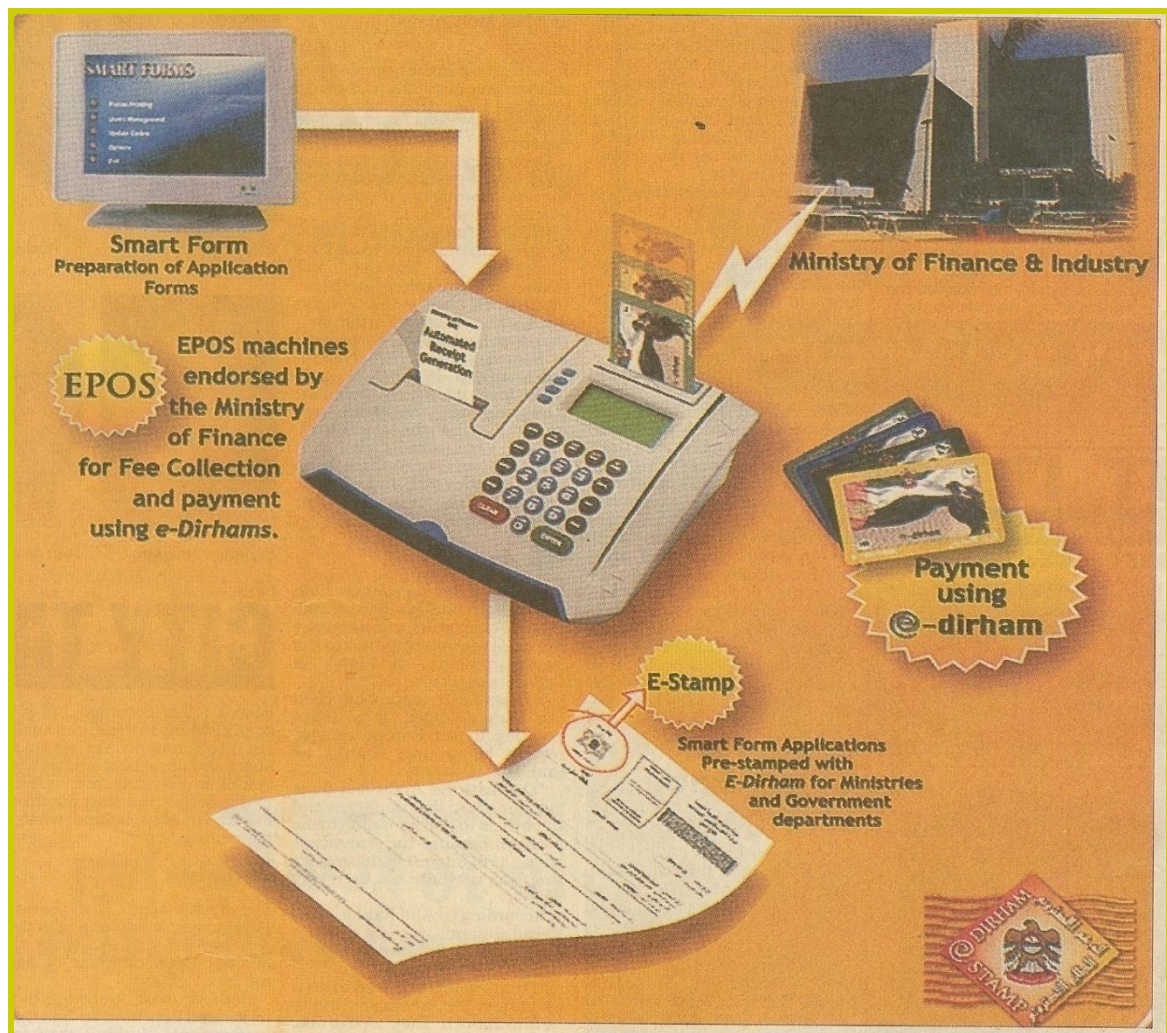
#### 5.6.4.6 Government Central Payment System

The UAE Government has expressed strong determination to enhance the performance of public departments and increase their efficiency. The move has been dictated by a host of local and international factors that are essential to ensure sustainable development in the country. Locally, the main reasons that prompted the federal government and local authorities in each emirate to think of upgrading procedures were: the need to cut down expatriate manpower in a bid to ensure demographic balance; promote the efficiency of employees and reduce budget deficits and to implement a trouble free fee collection system and eliminate corruption.

Internationally, the pressure being exerted by global trade and economic organisations demands a more competitive market. Hence, the need is to enhance efficiency to cater to global requirements. The main theme of the changes being implemented by the government in the past few years is ensuring maximum efficiency of public services and fostering a stronger partnership between public and private sectors - a key factor to ensure further development in the country. This is strongly encouraged by the Ministry of Finance. It is realised that the success of the nation in implementing Government using ICT-enabled technology in different agencies and departments has been considered essential for the UAE to become an important player in the global world market. All policies encouraged and fostered by leaders were reshaped to achieve this target. The establishment of eGovernment in Dubai and the introduction of the eDirham on the federal level were the two main moves to achieve development goals. The eDirham and eStamp were introduced later.

As with any complex systems there are always problems. However, the way to deal with those problems determines the level of confidence with the users. For example, customers have complained that the malfunctions have been caused by technical, procedural and human factors. One major hitch is in the collection of fees through the eDirham system. The Ministry of Finance and Industry, however, has assessed the situation and worked to overcome the hurdles. As a result of their analysis, the ministry launched the eDirham pre-paid smart card; this was then followed by introducing the Government Client Card. This was to help big companies which have daily transactions with the government. This allowed companies to buy one card which can be 'toped-up' to avoid the trouble of buying cards for each transaction. Further, in a coordinated way, the Ministry of Finance developed ways with the ministries of Labour and Social Affairs and Health to collect fees. The smart form

technology was implemented to collect fees once the application was submitted electronically (see Figure 5.11 below).



**Figure 5.11: DNRD eDirham Payment System**

Managing this facility was also prone to other problems of availability, where individual customers, residents, companies and Typing Centres<sup>21</sup> have complained about the shortage of counters selling eDirham cards. Some alleged that they have to pay extra, over and above the price of the card. Other problems include loss of money because of technological failure of the smart form and eStamp system, banks' refusal to refund unused cards and falling victims to fraud. Moreover, the high cost system is not implemented by all ministries and departments.

<sup>21</sup>-- 'Typing Centres' are outlet channels that help individual visitors dealing with government department to transact business with government departments by paying for the service.

Managing those outlets was a real problem where the availabilities of payment cards can be scarce. For example, it was reported that a Public Relations Officer<sup>22</sup>(PRO) at a large company, said there is a shortage of banks authorised by the Ministry of Finance and Industry to sell eDirham card. He said that the ministry keeps asking customers to buy eDirham cards only from one of the seven authorised banks and their branches. He added further that *“when I went to Al Khaleej Branch of Al Mashreq bank, one of the authorised banks by the Ministry of Finance on instructions by the Dubai Naturalisation and Residency Department to all PROs of companies to buy eDirham to avoid queues at the Commercial Bank of Dubai located at the department”*. *“It would be prudent to buy eDirham cards from banks outside the department”*, I was told. *“To complicate matter further, and then at the Al Khaleej branch, I was asked to go to the Hor Al Anz branch as they didn't sell the cards.”* To deal with the issue it was documented that this PRO called on the Ministry of Finance and Industry and requested to allow all banks to sell the cards to avoid trouble and prevent queues at banks and branches which sell them.

Acting on a host of complaints and after the problem of the new system has reached serious level that prompt the interference of the Ministry of Finance and Industry which introduced the system. The Finance Ministry carried out a survey and held meetings with the supplier company and concluded that the system needs to be upgraded. The upgrade was carried out and the supplier company has contacted those who have bought the machines to offer them the upgrade programme free of charges so that they do not lose money.

The ministry then publicised the use and benefits of the eDirham as well as government client cards. Training was organised to employees at typing centres and the eDirham website [www.eDirham.gov.ae](http://www.eDirham.gov.ae) was initiated. This clearly shows that leaders who are taking transformation seriously will make life of stakeholders easier to deal with government agencies. It is essential in order to manage this complex transformation, ministries and departments should address the problems that have resulted from the integration of the old bureaucratic procedure and modern electronic payment system. To that effect, the ministries of Health and Labour and Social Affairs in addition to the departments of Naturalisation and Residency in different emirates in the UAE, which were the first to implement eDirham, should act promptly to rectify the problems associated with payments. They should also focus on providing training to the public on how to make the best use of the new system. The

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<sup>22</sup>-- Public Relations Officer known locally as (PRO) is a company employee who is a nominated member of staff to deal with all government departments on behalf of the company.

objective was not only to guarantee a secure fee collection system by stopping dealing in cash with other ministries and curbing probable embezzlement and cheating but also to meet the strategic vision of Dubai Government that is aimed at easing the life of its citizens and stakeholders.

### *5.6.5 Lessons learnt and themes*

This section aims to provide the additions (technical and organisational challenge(s) facing transformationaleGovernment system) to the conceptual model proposed as derived from the aforementioned case studies. However, any additional challenges will be combined, based on common characteristics, with those challenges included in the conceptual model presented. These additions in turn have suggested changes to the conceptual model.

- Additional technical challenges facing transformationaleGovernment system: the evolution of the technology (there is always new technology); the availability of technical resources (skilled employees of suppliers) after sales support (from suppliers); viruses and worms coming from connections with other departments or companies.
- Additional organisational challenge facing a transformationaleGovernment system: the speed of introducing (adopting) new legislation.

Dubai eGovernment Services as part of its strategy for seamless integration and paperless environment has launched the 'ePermits' service, aimed at facilitating faster release of shipments coming into Dubai through different ports (see next case study of DNRD). At the launch press conference, Dubai eGovernment revealed its partnership with a number of local government departments and federal authorities and ministries, to launch the 'ePermits' solution, to ease the pressures on UAE Customs.

Commenting on the service, Lieutenant General and Commander-in-Chief of Dubai Police, added that:

*"I appreciate Dubai eGovernment's role in establishing the modern concept of using ICT to offer government services to individuals, and government and private entities in order to ease people's lives in Dubai. This goal has been achieved within the framework of integration and coordination between Dubai eGovernment and all the departments under the umbrella of Dubai Government. The vision of H.H. Sheikh*

*Mohammed bin Rashid Al Maktoum of providing 90% of Dubai government services electronically has been achieved, and the ePermits project has perfectly complemented this vision as it saves time and effort, while offering enhanced security for transactions.”*

According to Dubai Customs report, in 2006, the number of restricted goods importing permits in ministries and government authorities and departments needed more than 360,000 permits in Dubai alone.

A case in point when business customer that was importing/exporting restricted goods had to visit all the concerned authorities and different departments (Government Departments) in order to apply for clearances. According to standard procedure, the shipments that arrive in Dubai are subject to checks by different departments, such as Dubai Municipality and Dubai Police. When this process is completed and the permits are ready, the customer attaches the hard copy of the permits to the declaration request document submitted to the customs authority. Needless to say, the amount of paper work and human effort involved results in slowing the whole process and thus delaying clearance of shipments. Dubai eGovernment eServices Director, said, “DEG’s ePermit is an online service, based on Adobe eForms technology, which will unify shipments release procedures and link related departments and authorities electronically with Dubai Customs exit points.” The ePermit service will allow customers to submit their permit requests online. The requests would be forwarded to the relevant government entities which will be able to view and process the permit requests and issue the permits accordingly. Issued permits may then be electronically sent to Dubai Customs, saving considerable time and effort.

As for payment, “ePermit will also integrate with the Dubai eGovernment ePay gateway to enable customers to pay online for their permits, thus facilitating and speeding up the process. As Dubai Government departments have joined the ePay platform, they can make their due payments with ease through any of ePay options. As will show later in the next case study of DRND for the link with federal ministries, the eDirham is sanctioned by the Ministry of Finance for revenue collection. Meanwhile, further cooperation with the Ministry of Finance is needed to better manage the system and facilitate the different channels of the ePay process.

Most government departments that already acquired ePermits issuance systems, such as Dubai Municipality, will connect the new ePermit system to their current systems, allowing them to send their approval on applications directly to Dubai Customs. Through the ePermit

solution, an estimated 6,000 transactions can be completed online, with a growth rate of 5-15 % every month,” added the eService Director. To show the scale of transactions, for example, Dubai Municipality statistics indicate that it issues about 155,000 permits annually; of which are 12,000 are environment permits, 140,000 food permits and 3000 permits related to veterinary services.

It can be underestimated that the launch of electronic permits (ePermit) involving a number of partners is a routine development or just another service added to the growing chain of eServices. This assumption might look justified, as Dubai eGovernment look at this step as a triumphant leap towards the final stage of electronic transformation. It is worth mentioning that at the time of launching the eGovernment in 2001, Dubai eGovernment with the determination and visionary strategy of its leadership has achieved a worldwide recognition.

## 5.7 Case Organisation Three – (DP)

### 5.7.1 Introduction

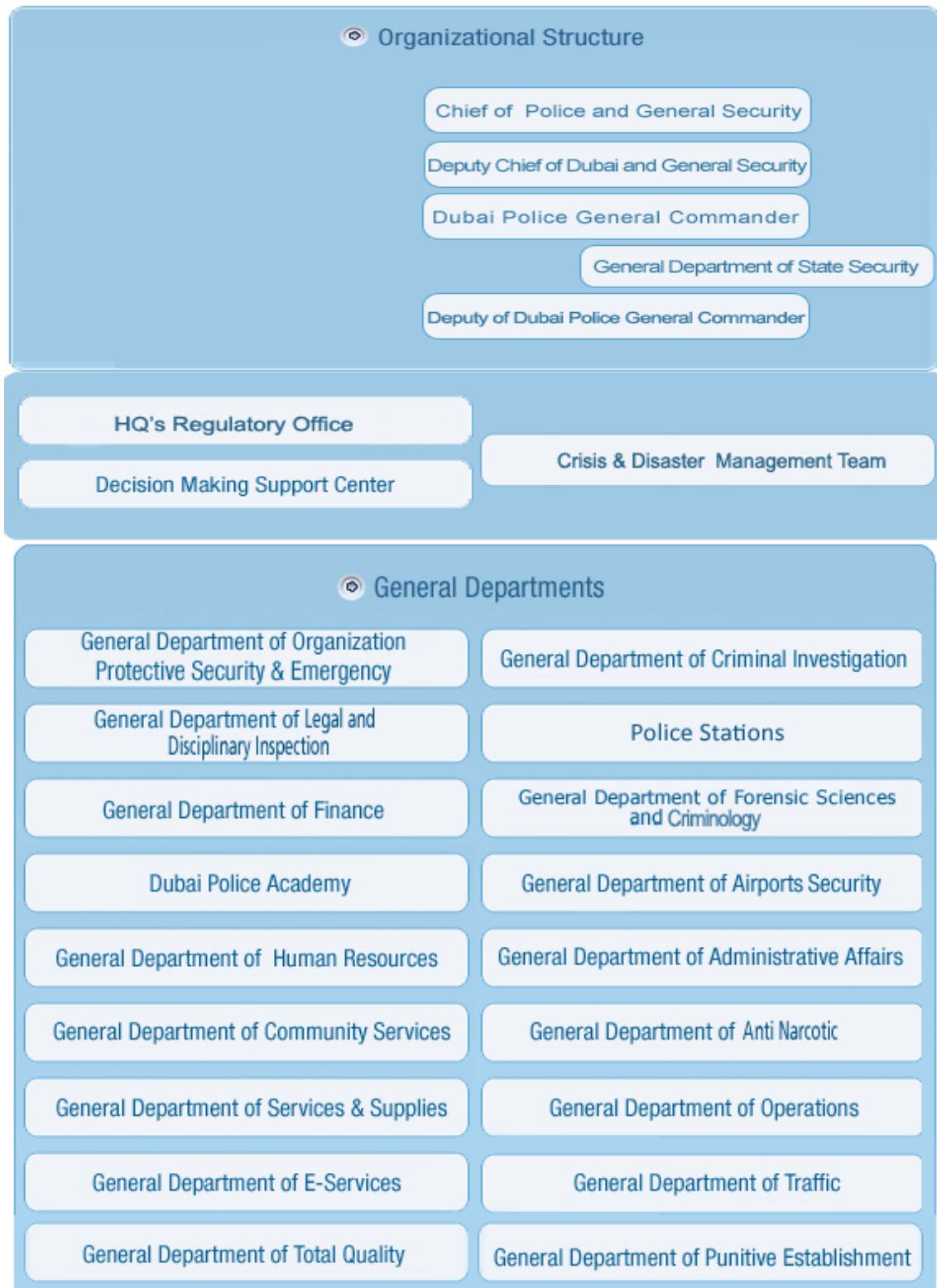
The third case study is that of the (DP) organisation, which is responsible for general security of Dubai, and issuing of driving permits. It also provides services and information to citizens, businesses and public administration. The decision is taken by management to go digital and using paperless environment to facilitate interactions with their services. Such an action could not have happened without the support of the Commander in leading the initiatives. For this purpose, Dubai Police developed their website to be more citizens focused and create awareness and educate the public on the use of online services. It is worth noting, as stated earlier at this stage, that Dubai Police has to deal with issues of more than 100 nationalities residing in Dubai. However, as the majority speak English, DP has a dual website with Arabic as the default language as shown in Figure 5.12 below.



**Figure 5.12: Dubai Police Portal Is In Two Languages, Arabic And English, Where The Default One Is Arabic**



Dubai Police has the following organisational and departmental structure as shown in Figure 5.13 below.



**Figure 5.13: Dubai Police Management Structure And Departments**

### *5.7.2 Background to DP eGovernment Strategy*

Dubai Police considers itself as one of the most forward thinking and progressive Arab Police Force. Its staff force is made up of about fifteen thousand personnel and it is a well disciplined police force and presents itself conforming to a high educational standard of any organization in Dubai. Dubai Police Force comes under the direction of H.E. Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai.

Dubai Police was established on June 1st, 1956 in Naif Fort, which is still operates as a police station. In 1973 the Dubai Police Headquarters moved to its present location, in Al Towar area. They use performance standards and have highly defined descriptions of their tasks, duties and jurisdictions. They also have developed institutional performance criteria in the application of strategic planning, with senior staff in simplifying procedures and managing the human and financial resources more proficiently. In addition Dubai Police implemented a system, which take into account officers' creative initiatives, and rewards those personnel who make positive contribution to the organisation and work as one team.

Amongst those initiatives is that they were the first Arabic Police Force to apply, DNA testing in criminal investigations, the first to use electronic finger printing, and the first Arabic department to know and implement the paperless department concept. Many prizes, even first prizes, have been won in recognition of these achievements, both locally and internationally. Dubai Police were among the very first to utilize the Automatic Vehicle Locator (A.V.L) using Loran C signals in Gulf (in the mid-eighties) and now they are using satellite and GPS for Automatic Vehicle Locator (A.V.L). Another was the adoption of the Community Policing program, as well as being the first Police Force to establish a Human Rights Department. Indeed, Dubai Police are innovator and always eager to apply electronic services, particularly in the Arab world, so that now anyone can renew their registration from anywhere in the world.

As mentioned earlier, Dubai government in the United Arab Emirates (UAE) was of interest because of its strategic location and its apparent commitment to developing eGovernment in the Gulf region to support businesses and improve the life of its citizens and stakeholders. This is in line of the overall UAE national strategy encouraging conducting business in a safe and reliable environment that requires the commitment of a transparent security agency. Dubai Police in particular was chosen because of the initiative shown by its leader, through a

preliminary study and observation while staying in Dubai, to transform the government agency. Hence, this research was chosen from different backgrounds, to gain a broader understanding of its role in leading eGovernment to support and harmonize with local businesses. The prospective departments were initially contacted using a general e-mail communication with customer services department seeking basic information about their eGovernment initiatives. Then, a couple of days later more e-mails and telephone conversations were exchanged initially which led to the identification of relevant people to visit and interview. The actual interviews were then conducted by visiting the Dubai Police Headquarters at the interviewees' request. This allowed the participants to build the necessary trust and ensure privacy in the process. Then, the research setting was developed, which acted as a mean to: a) ask provoking questions of the research, b) ensure only appropriate data are collected, c) support the organization of data collection, d) schedule the research process and e) format the documentation of analysis.

Semi-structured interviews were carried out to gather data with face-to-face interviews, as it was not necessary to ask questions in a specific order (Yin, 2003), which lasted approximately two hours. Before the interviews were conducted, the participants were e-mailed with the outline of the research in question that would be covered during the interviews so that the participants could familiarize themselves with the research area, and a suitable date and time convenient for the participants was arranged. The interviewees were senior heads of IT functions and the head of eGovernment, as it was considered important to interview senior staff involved in the strategic decision making in implementing eGovernment. These were namely the Head of eGovernment (HG), Technical Director (TD), Director of eServices (DS) and Government Consultant (GC).

#### 5.7.2.1 Dubai police strategy for eGovernment

The literature that was reviewed earlier identified many challenges that governments may encounter in their quest to implement and manage public sector change processes, from a theoretical and empirical point of view. What follows is an exploration of the impact of these issues and how an emerging economy such as Dubai in the United Arab Emirates (UAE) is facing up to eGovernment implementation and adoption. Dubai is considered to be the first country in the gulf region to embark on such initiative and launch an eGovernment portal in a short time scale. This is initiated prior to the formulation of the national eGovernment strategy of the UAE. This initiative has the support of the federal government as well as the Ruler of Dubai, Prime Minister and Vice President of the UAE, HE Sheikh Mohammed

binRashid Al Maktoum, who challenged those in his country to develop an e-lifestyle. As a result this has led to the development of a new portal that contains four main sections: citizens, residents, visitors, and businesses. The encouraging political stance supporting the need for eGovernment should be accompanied by an integrated approach to overcome the implementation problems in order to develop a successful eGovernment(Reffat, 2003).

This empirical study was conducted as the result of the researcher's observations and later on interactions with Dubai Police when requesting simple general information about their services and interactions with the private business sector. Within two weeks of such a request an invitation was received and the researcher flown to Dubai and was in Dubai Police HQ conducting interviews with those aforementioned executives involved in implementing eGovernment within Dubai Police agency.

The United Arab Emirates, of which Dubai is one of the seven emirates, includes more than 100 different nationalities living and working there, hence representing a diverse community with a need for the stability and security of the country to be catered for. Furthermore, the crucial role the Dubai Police play acts as a catalyst for attracting investment to the region. This reflects the enthusiasm for the development of Dubai as a "Business Hub", and the Dubai Police Chief states:

*"Our mission and strategy are based on ensuring peace and safety for everyone in this good -land. This suggests that good treatment and useful services have not only been provided to investors but also to ordinary people. When an investor sees them treat an ordinary person with decency and respect, he will be satisfied and expect that he will also receive similar dignified treatment. They constantly work on not being regarded as an authority as much as a general service provider and personal interests are replaced by public ones".*

Echoing and reaffirming what the Ruler of Dubai, Sheikh Mohammed Bin Rashid Al Maktoum, is aiming to achieve; asserting that the aim is for Dubai to be recognized as a leading centre in the new global economy. To accomplish this aim, there is a need to redefine and transform the whole understanding of the role of government, and he asserted the view that he will lead personally this aspect of transformation.

An inspired leader, the commander of the Dubai Police also stated that the main priority was developing human resources, in order to cope with a rapidly changing world. Furthermore, by stating that, the Dubai Police department's automated and consequently transformed

environment finally became reality (AlNaqi, 2004). For the purpose of this research the one can regard the complete internal change of processes and the strategic introduction of the paperless environment.

### *5.7.3 Example of eGovernment implementation leading to transformation*

The Dubai Police agency is one of the leading Police Forces in the Gulf region that have developed institutional performance criteria in the application of strategic planning, simplifying procedures and having highly defined descriptions of their tasks, duties and jurisdictions. The Dubai police force is establishing itself along the line of other police forces in the developed world delivering quality and security. They are one of the first to apply DNA testing in criminal investigations, the first in the region to use electronic finger printing and the first Arabic security agency to implement the paperless department concept. Many prizes, including first prizes, have been won in recognition of these achievements, both locally and internationally. Another first was the adoption of the Community Policing program, as well as being the first police force in the region to establish a Human Rights Department. To cope with this dynamic environment and in response to globalization and the changing business environment, as private companies turn to business process reengineering (BPR), so will governments, involving significant investment in information and communications technology (ICT). (Peppard, 1996) asserts that business process reengineering has become a fundamental management principle; where the fundamental message of BPR is that through the radical redesign of business processes, significant performance improvements can be achieved. The appliance of BPR advocates the redesign of business processes using enabling ICT to bring about a quantum leap in performance (Davenport, 1995, Hammer and Champy, 1993, Peppard *et al.*, 2007).

The senior leadership of the Dubai Police has embarked on a major reform to transform the way business and policing are done. The commander tried to strengthen technological trends within the Dubai Police by introducing and adopting many advanced systems, such as Wireless Communication System (ANI), Satellite Police Vehicle Locator System, Emergency Voice Call Locator System, Fingerprint Verification, DNA System, Criminal Expert System, Electronic Criminal Form System, Traffic Black Points System, Traffic Accident Reconstruction System, Ultraviolet and Red Infrared to detect forged notes, Voice Verification, and Computer Voice Stress Analysis (CVSA). Recognizing the need for change, he also introduced many successful initiatives and programs that had a great impact on

promoting the efficiency of police performance and community service. These include the Sheikh Mohammed bin Rashed Al Maktoum Sports and Physical Fitness Program, and the Electronic Traffic and Traffic Education Campaigns.

### 5.7.3.1 Dealing with Business Challenges and Rapid Changing Environment

With all the exciting changes that are taking place within the Dubai Police, this research considered the paperless environment to be a key factor in the transformation process. After more than thirty years using technology in the public sector, the benefits are self-evident and the government should move beyond these benefits by focusing more on streamlining core processes and reaching stakeholders in a more efficient manner. By following the eGovernment road, various objectives are pursued by the Dubai Police (transparency, accessibility, accountability), spanning a variety of government operations, governmental administration, front line services, policy input and involvement of users/citizens. The real value of eGovernment lies in the ability to force an agency to rethink, reorganize and streamline their delivery before going online. It is all too easy to build a website without actually improving service (Al-Kibsi *et al.*, 2001).

Consequently, such change strategies are more loosely coupled and must rely on coordination by feedback rather than formal planning (Heeks, 2000a). This also directly applies to the context of electronic government. Furthermore, the Internet and emerging web technologies have created the capability beyond one's imagination which allows almost any computer system to communicate with any other around the world. Hence, if we look at the private sector where a multinational company such as Cisco has used this capability to build 'Internet Business' solutions which allows it to redefine its position in the world market place and to share relevant information with the key stakeholders in its business. This 'ubiquitous connectivity' created by Internet Business solutions ensures tighter relationships across the company's 'extended enterprise' and can be as much of a competitive advantage for the company as its core products and services. For example, by allowing stakeholders and employees' access to self-service tools, businesses can cost effectively scale their stakeholder support operations without having to greatly increase the number of support personnel. Collaborating with suppliers on new product design can improve a company's competitive agility, accelerate time to market its products and lower development costs, and perhaps most importantly, integrate citizens so that they have access to on-time, relevant information. For this reason, the Dubai Police has deployed an Enterprise Information Portal with Business Process Automation. Furthermore, many benefits in business reengineering, most of

which are enhanced by IT such as greater product or service variety, faster response and increased productivity to support flexibility, customization and across organizational boundaries (Zhang and Cao, 2002).

The project was strategically implemented using Microsoft Share Point Portal Server 2003, with a local computer company providing a corporate portal, with all components delivering collaboration, sharing of information and documents, and around the clock services to employees. In addition to the portal, Captaris Workflow was also used to automate four of the Dubai Police department's most identified frequent processes including:

- **Mission Management:** this process enables the creation of a mission, and every action is considered a mission which consists of tasks being allocated to a specific group and being sent to the supervisor. In return, the supervisor will be able to divide the mission into subtasks and assign them to the right resources and complete micro follow-up and high-level monitoring, ensuring that tasks are delivered on time.
- **Request Management:** providing the management of four types of requests, including "TetraMachine", "privileges", "Computer Hardware/Software Requirements" and "Telephone Line" requests. Once submitted the request goes through an ad hoc approval process, and in particular for Hardware/Software Requirements, the pre-requisites needed to enable the computer to convert the request into a mission or task must be provided internally, and thus goes through a mission process workflow.
- **Meeting Agenda and Minutes:** This process is used when scheduling meetings. The process includes sending a meeting request to all attendees via email and SMS, providing a template during the meeting to note the meeting agenda details, and finally including the action items or output from the meeting, which consequently may be redirected through a mission process workflow.
- **Transfer and Interview:** This process manages the request of transferring an employee from one department to another as well as the management of employee interviews.

During the interview discussion the head of eGovernment (HG) stressed that every document that enters the agency from the outside passes through the general administration department.

This was later confirmed by the Director of eServices (DS) and front line desk operator. The head of eGovernment (HG) highlighted that their daily volume exceeds 700 cases. By using the latest communication technology and networking enables managers in various departments to administer their documents through a workflow and daily work takes place not only from the office but also from their homes and vehicles. The Integrator Emirates Computers used IeStreamWMS software imaging and workflow to successfully implement a management solution for the agency that is considered to be sufficient for the projected need of operations.

These changes led the head of eGovernment at the Dubai Police department to state:

*“It is not a matter of whether we will use the paperless environment or not - this is the strategic trend and we aim to be the best in serving our communities, citizens and businesses. It should not be seen as a replacement to email, it is **not** an email system!”*

He emphatically repeated that it is not an email system.

It is worth noting that these developments of the Dubai Police services occurred quickly and effectively with the potential for further improvement and development. It was also stressed by Technical Director (TD):

*“The application of these changes in this regard is not meant to be prescriptive in any sense. Rather, it has been used in order to stimulate cross agency collaboration, debate and further analysis of those knowledge factors and learning outcomes that may inherently drive and determine the outcome of integrated eGovernment services.”*

In fact, the most significant development that has been completed was the creation of total quality management, emphasizing the provision of services in an innovative manner compared to other police organisations in the rest of Arab World. Hence, this is resulting in providing an efficient and effective citizens’ centered quality service enabled by technology.

In line of the overall Dubai Government strategy for easy and equitable access to public information and services, Dubai Police has always been in the forefront of innovation and action for an open and transparent government. The recent development of government services has opened up new possibilities to achieve this goal and also to bridge the digital divide. The next section discusses the development and challenges of three more initiatives by Dubai Police the establishment of eTQM College, and the implementation of information Kiosks across Dubai.



### 5.7.3.2 The launch of eTQM by DP

This new initiative drew attention to the Arab World in general, and to the UAE in particular. It has changed the concept of police work as known in this region. Moreover, in dealing with the fact that the cost of education is on the rise year after year, the initiative of establishing Electronic Total Quality Management College (eTQM) has made learning less costly. The commander of Dubai Police believes that crime flourishes where education deteriorates. Adding further that when decision to establish eTQM was taken, it had two main objectives: to contribute to the spread of inexpensive education for the benefit of the poor and to eliminate illiteracy and crime. The other objective is to be a good example for other educational institutions which fear the concept of eLearning. With the support of the ruler of Dubai, Dubai government has always set a good example for the adoption of modernisation. Its departments have some unprecedented practices in leading the procession. Drawing on an international example when the commander was visiting Canada, where he saw an example of that in the Canadian Police: whenever they found that a certain initiative might be beneficial to the nation, they would sponsor it without hesitation until it succeeded. As a result of Dubai Police effort for an educated police force there was reported of successful experiences in caring for the juveniles and caring for the talented by adopting their notions. The commander concluded that:

*“Gone are the days when the police were portrayed as executioners. The policeman is now contributing to society and social construction. He does not wait for crime in order to take action. He, rather, contributes by creating a healthy atmosphere in which there is no place for crime.”*

The creation of a ‘healthy environment’ and making contacts with Dubai Police to obtain information and conduct transactions with ease and within reach, Dubai Director of eServices outlined the role of this initiatives by implementing Kiosks network across Dubai city. This was completed with military precision by organizing and managing. As the nature of Dubai Police is of military life and is one of discipline and accurate management, added the Director. It is acknowledged that Dubai Police is an excellent department where it takes pride in the fact that many Arab as well as Gulf countries request to copy its model. Since everyone is eager for such a management style, which left no choice but to transfer this knowledge quickly to whoever seeks to learn. Table 5.14 and Table 5.15 below highlight the organisational and technical challenges facing transformational government.

| Categorisation of Organisational Challenges                 | Organisational challenges facing transformational eGovernment system in DP  | HG | DS | TD | GC |
|---|---|----|----|----|----|
| <b>Business Process Reengineering of internal processes</b> | The interaction between government organisations and its stakeholders needs to be transparent and offered in both a traditional manner and also through the internet. Double process front-end  | ◆  | ◆  | ◆  | ◆  |
|   | Time required for reengineering and radically changing the internal business processes of the organisation.   | ◆  | ◆  | ◆  | ◆  |
|   | Funds required for reengineering and changing the internal business processes of the organisation. Implementing the paperless environment is a key strategy.  |    | ◆  | ◆  | ◆  |
| <b>New legislation</b>                                      | Adopting new legislation to deal with new issues such as electronic receipts and digital signatures. The speed of introducing (adopting) new legislation  | ◆  | ◆  | ◆  | ◆  |
| <b>Changes of organisational structure</b>                  | Change of organisational structure and relocating for ease of access ( shopping mall, car showroom)   | ◆  | ◆  | ◆  | ◆  |
| <b>Employees</b>  | <p>The lack of IT -skilled workforce</p> <p>Resistance to change (from traditional to electronic ways of working) by the employees represents no challenge</p> <p>Changing the culture of employees working ethos and government processes organised for the convenience of stakeholders rather than the convenience of the department.</p> |    | ◆  | ◆  | ◆  |

Table 5.14: Organisational Challenges Facing Transformational Government (DP)

#### 5.7.4 Motivations for Government Implementation and challenges

Manager Technical Support & Maintenance (MTSM)– General Department of eServices in Dubai Police. This is to provide easy and effective access to public information and services to citizens is a widely accepted goal of democratic societies. The Commander of Dubai Police stated:

*“We have to extend our services to the public at any place and any time and we shouldn't wait for them to come to us.”*

With this statement the Director of eServices started explaining the motive behind the Touch Screen Kiosk initiative project. He added further the strategic vision of his leaders:

*“In Dubai the term -the police are at the service of people- is not just a slogan, but is put into action. We have the right to be proud when we see the innovations of Dubai Police, led by Commander in offering its services to the public with new concepts matching with the Transformation which was initiated by H.H Sheikh Mohammed Bin Rashid Al Maktoum.”*

Adding the Director of eServices indicating that the instructions of the General Commander were clear, and this was used as a base for all the strategic development of eServices. The evolution of stages in applying this technology has started way back which provided the core foundation of the touch screen project. He summarised the stages that the touch screen project went through until reaching its current status as follows:

**First phase:** It represented the beginning of the project and the service was launched under the name: "Emarat Al Takaddum" (The Advanced Emirates). The resident could use a dedicated phone number to inquire about traffic information.

**Second phase:** Some modifications were introduced on the quality of the service, and it was renamed "Marhaba" (Welcome) and the service was used to inquire about all types of fines and from any Emirate in the UAE.

**Third stage:** A payment system using banknotes was introduced by installing four electronic kiosks in different locations around Dubai City that offered direct inquiry services.

The director pointed out that this third stage faced many problems resulting from the sensitivity of the screens and their rejection to new or scratched banknotes which caused some residents to be deterred from using them. Hence, this resulted in a decline of service use which was purely technical. As a result Dubai Police decided to stop the payment facility in these kiosks and then started looking at alternative solutions that led them to the next stage. This is due to the determination of the senior management to fulfil the promise of moving closer to 'customers'.

**Fourth stage:** kiosks that could read credit cards. We used these for a while but we found that users faced difficulties dealing with them. Accordingly, we developed these kiosks in a way that users needed to only enter their credit card number via the screen and the payment would take place directly. The system would then send a SMS to the beneficiary that acted as an ePayment notification with the number of the receipt. This stage was successful and was met with acceptance from all the users of the system. This encouraged us to distribute more kiosks to shopping malls and government departments.

In deciding on which kiosk system is suited best for Dubai Police and its environment, as there are a number of choices that needed to be considered. They are usually composed of a hard outer shell, an internal computer, and a monitor that enables users to make selections using a touch-screen or keyboard. Most kiosks are personal computers that have been modified to withstand high traffic, long hours, and operation in extreme conditions. Some may have additional devices and capabilities, such as a printer, a telephone, a credit card reader, or a bar code scanner.

There are three general types of kiosk systems:

- **Information dissemination and advertising kiosks.** These kiosks are used to advertise products and services and provide information to users in a one-way communication environment. They are mostly used at trade conferences, showroom floors, tourist spots, and visitor centres. They take requests for information from a touchscreen monitor and use video, animation, and sound to convey information.
- **Interactive information kiosks.** These kiosks are used to automate information access and to collect information. They are commonly found in high pedestrian traffic areas, such as airports, stores, malls, and convention centres. Users may input information, such as names, codes, or dates, through a touchscreen or, less

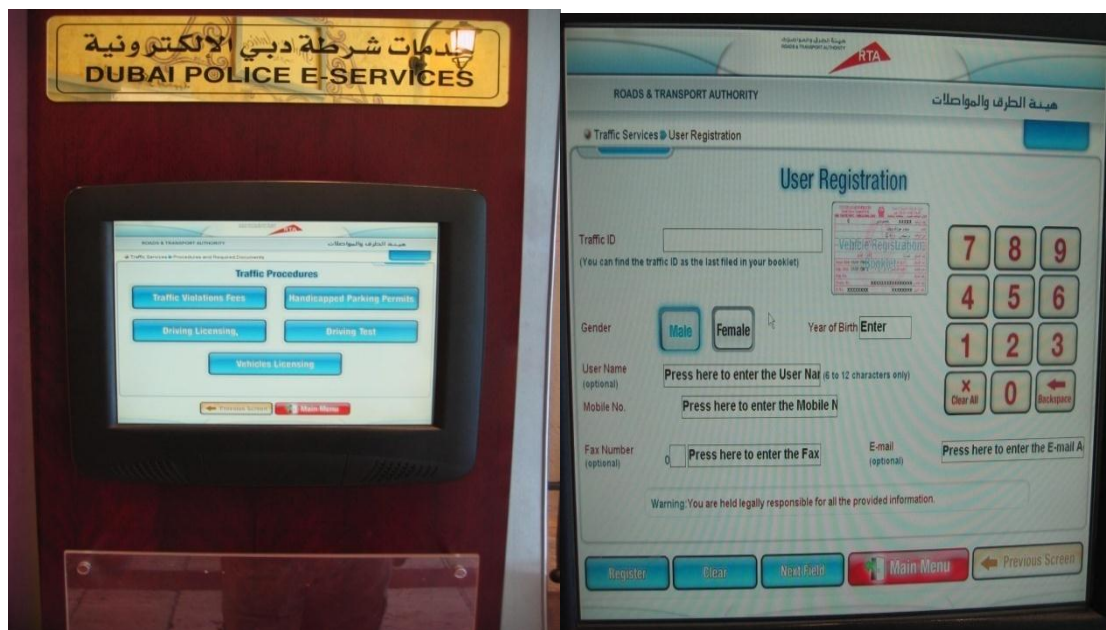
frequently, with a keyboard. Hard copy output, such as tickets, maps, and coupons, can be provided if the kiosk is accompanied by a printer.

- **Transaction kiosks.** These kiosks are relatively more advanced because they allow for more complex transactions and information exchange. A touchscreen and simple buttons or keyboards are used to get instructions and information and possibly to verify user identity. Since both privacy and money are involved, security of these kiosks is a big concern. These kiosks can be designed to accept cash, credit cards, or both. For kiosks that take cash, extra room and physical security measures are needed to store bills.

Director of eServices acknowledged the vital role carried out by Director of Information in Traffic Department, especially in the first and second stages of the project, where he laid the basic infrastructure of the project together with direct involvement of General Commander. Then a team was set up to lead the project, added Director of eServices by stating:

*“The team started working again under the leadership of deputy commander on developing the idea through touch screen kiosks by providing machines of high standards which can be used by all types of people and can stand many harsh climate factors like humidity, heat, dust, liquids and misuse of people, and can still function around the clock with no down-time.”*

The Director of eServices together with a senior team of officers committed in monitoring the kiosks operations after they were installed for considerable number of days before they were launched to the public. There was an issue of not having a keyboard, where people not used to touch screen, which was one of the obstacles, because they were also exposed to potential misuse and harsh climate. This resulted in applying more innovative interfaces that needed a minimum level of input, be it numbers or short answers. These interfaces for the applications were developed in both Arabic and English by Dubai Police team (see Figure 5.14 below).



**Figure 5.14: Dubai Police Kiosk Touch Screen Interface With Link To Other Departments**

#### 5.7.4.1 Challenges of managing information kiosks

To ensure success and proper use of the system, Dubai Police launched a marketing campaign. This campaign meant to overcome all the obstacles mentioned before, to encourage people to use the kiosks and break the psychological barriers they have with touch-screen systems. These campaigns included pamphlets, brochures and stickers put on each kiosk with full instructions on how to use them. In addition to this, the team did on-site demonstrations to the public, which led to remarkable results in the way people dealt with the kiosks as friendly to-use machines. This encouraged Dubai Police to think of increasing the number of kiosks to cover all the areas in Dubai, work on developing them and increase the number of services introduced through these kiosks. The maintenance team that supervises the follow up of periodical technical and maintenance of the kiosks is formed of five specialists who manage 29 kiosks in various locations around the clock through special remotely controlled programs. The team was also ready to move to the physical location of

any kiosk if the need arises. In addition to that, there was a weekly scheduled maintenance visit to the kiosks and the team is on point to respond to telephone calls from users for any help required.

With the motto ‘Your transaction is a touch away’ the Director of eServices indicated that the number of services available through touch screen kiosks were 17 services carefully chosen among a wide number of services offered to the public through the Dubai Police website. This is to make sure that the most used services were implemented. Some of these services are: Booklet Delivery, Tourism Certificate, New Registration, Registration Renewal, Renew ReservedPlate, Lost Booklet, Damaged Booklet, Cancel Vehicle Registration, Total Registered Vehicles Report, Fine Inquiry & payment, Damaged License, Lost Licence, Renew Licence, Experience Certificate and Driving Licence Delivery.

He added further that all transactions that are executed via the touch screens are delivered to the users by special postal delivery companies anywhere in the UAE, and to all types of users. The Director of eServices concluded by saying that Commander was very satisfied and proud with the achievement of the team, especially for following up and developing the service in close involvement with the users, which made Dubai Police a pioneer in using technology for the benefit of the public.

As it is noted in the development of Dubai Police Kiosk system that educational and training programs for different user groups are important to help resolve the problem of digital divide, they are only part of the solution. Special attention and efforts are needed to deal with the “supply” side and make the Internet and other eServices more accessible to various user groups. This is why information kiosks may play a significant role in the future eGovernment development. By placing kiosks in highly trafficked public areas(see Figure 5.15 below), the government can achieve the cost-efficiency of electronic services while providing a solution to the “supply side” of the digital divide problem and convenient access points to different user groups.



**Figure 5.15: DubaiPolice Kiosk In A Shopping Mall**

From the aforementioned, the development and challenges of information kiosk usage is complex and requires a great deal of user involvement for benefit realisation. This is because the kiosk is a personal-computer-based mechanism that provides an interface medium between users and a service or information provider. However, as discussed there are significant managerial and policy challenges in implementing these kiosk projects, which often result in project failures and underestimated financial burdens for government agencies.

Considering the diversity of Dubai population and its international nature alcohol consumptions was regulated and requires approval before being able to buy and consume alcohol. In leading change and in line with the agenda of transformation the leadership of Dubai Police has initiated another project in cooperation by the Justice Department. This is the processing of a liqueur licence which is a complex process that involves multiple stakeholders. This process involves considerable leadership involvement, management and communication. This is an important condition for implementing business process reengineering, citizen centric for benefit realisation. Then technology can play an important part in such a situation with the availability of a network that interconnects the involved agencies. The key infrastructure is available for this, and Dubai eGovernment is implementing a Public Key Infrastructure (PKI) and a central authentication service.



| <b>Categorisation of Technical Challenges</b> | <b>Technical challenges facing transformational government system at DP</b>   | <b>HG</b> | <b>DS</b> | <b>TD</b> | <b>GC</b> |
|---|---|-----------|-----------|-----------|-----------|
| <b>Post Installation software system</b>      | Maintaining high levels of performance and service availability   | ◆         | ◆         | ◆         |           |
|   | Trouble shooting technical problems   |           |           |           |           |
| <b>Technical standards</b>                    | Setting technical standards for all eServices   | ◆         | ◆         | ◆         | ◆         |
| <b>The capability of the infrastructure</b>   | The capability of the infrastructure in terms of handling the range and number of transactions  | ◆         | ◆         | ◆         | ◆         |
| <b>Security</b>                               | Ensuring the security of confidential data stored in government organisation databases  |           |           |           |           |
|   | Ensuring privacy of the personal data that are provided by citizens & business in the process of obtaining government services                |           | ◆         | ◆         | ◆         |
| <b>Financing</b>                              | Funds required to install system software and system computers  | ◆         | ◆         | ◆         | ◆         |
| <b>Back-end servers</b>                       | The back-end servers (communication failures between internal system and the external web server)   | ◆         | ◆         | ◆         | ◆         |
| <b>System Compatibility</b>                   | Compatibility of eGovernment technology available to the internal system  | ◆         | ◆         | ◆         | ◆         |
| <b>Challenges of suppliers</b>                | Suppliers pressure to buy their solutions   |           |           |           |           |
|   | False promises of suppliers<br>Exaggerated supplier prices  | ◆         | ◆         | ◆         |           |
| <b>On-going concerns</b>                      | The evolution of the technology (there is always new technology)<br>The availability of technical resources (skilled employees of suppliers). |           |           |           |           |
|   | After sales support (from suppliers)<br>Viruses and worms have come from the connection with other departments or companies                   |           |           | ◆         | ◆         |

**Table 5.15: Technical Challenges Facing Transformational Government (DP)**

These cases enable this research to draw some important lessons and emerging themes the development of transformational government. First, these initiatives had great high level political support, with strong engaged leadership. As it is a critical factor in introducing

technological innovations and business process reengineering in public organisations. The projects initiated by DM, DRND and DP were well received by all levels of government agencies because it eliminate the fear of change. Further, because policymakers realised the potential benefits to Dubai for future economic development.

However, these initiatives also show the complexity in managing change and the local political support should complement national strategic planning. The leadership literature suggests that success of ICT enabled change requires considerable planning and development which relies on effective management of organisational change. It also requires the presence of clear long-term strategic plan, change of culture, measurement of the cost-effectiveness, development of life-cycle plans for systems, and appropriate integrated technology into cross-agency organizational development. In confirmation with literature that lack of these criteria results in failure as earlier studies has shown (Ni, 2005).

In addition, these case studies illustrate the need for better multi-channels management and sustained marketing strategies for public awareness. Unfortunately, just like many initiatives on organisational change it requires effective marketing campaigns to generate the necessary champions and enterprise interests since 'marketing' was and still is a foreign concept in the public sector. This experience also reaffirms the findings by the Organization for Economic Cooperation and Development (OECD), which suggests that governmental organizations should adopt an incremental approach in IT projects and implement projects in stages. Also, government agencies should avoid being at the technological frontier and should adopt only proven technologies rather than the cutting-edge, new products (OECD, 2001).

Another lesson is that government leaders and public service managers need to pay more attention to the management of inter-governmental relationships. This cross agency collaboration also imposes serious challenges to the traditional mode of bureaucratic thinking and management. These issues of complexities and organisational interdependencies were considered a daunting long term challenges for an effective development of tGovernment. It requires public sector leaders and departmental managers to be not only knowledgeable of emerging technologies, but also have sensitive and skilled approach in building harmony amongst multiple stakeholders. In dealing with the external pressure, it is also important for Dubai government leaders to take cautious steps in planning ahead for maintenance to keep the implemented system running effectively and efficiently.

### 5.7.5 *Lessons learnt and themes*

It can be argued that just focusing on technology will lead to “Automation” but combining technology with visionary leadership will lead to “Transformation.” Effective leaders of eGovernment initiatives should be broadminded, enthusiastic and great communicators who engage participants through collaboration and partnerships. Together they build new bridges to realign resources, incentives, rewards and policies to support cross-boundary initiatives. The objective of Business Process Re-engineering services around citizens and businesses rather than automating existing services should become the central focus of future efforts to make eGovernment work (Jones and Crowe, 2001). The use of technology to improve the service offered by government will certainly speed up the process, but this will lead to automation; however effective leadership involvement in the process will improve quality and lead to transformation, as indicated by the leadership of the Dubai Police.

The challenges of leadership in this digital age offer great promise and great opportunities. To be successful in eGovernment implementation that leads to transformation, leaders must manage across networks and leverage partnerships and resources across organizational boundaries. Lack of authority is considered a major contributing barrier for a national level eGovernment development. It is also perceived that the whole exercise is a ‘technological mission’ (Salem, 2006). The resulting principal that lies beneath ‘Digital Economy Transformation’ is effective eGovernment leadership, since achieving transformation requires the mobilization of those with the power to define the role of government (Swedberg and Douglas, 2003). It is argued that prior to transformation, government leaders should take extra care during the Transaction Stage, as it represents the first real challenge for successful eGovernment implementation (Irani *et al.*, 2006b). Adding further that organizational innovation and change is known to be a complex phenomenon and that it is not well understood in the context of government growth. This research in enterprise or government agencies radical transformation must yield both an understanding of fundamental change and the methods and tools that can make change possible. Taking multiple perspectives on the problems of change - what drives it, what enables it, and what factors facilitate and hinder its success (Rouse and Baba, 2006).

It is noted that reproducing government online by the mere use of technology is not the desired outcome of eGovernment leading to transformation. Without further effort to transform and integrate, the benefits of eGovernment will be limited. Therefore, strong

visionary leaders are essentials; those who can best help navigate through the problem domain and meet unknown challenges ahead. Harnessing the power of Information and Communications Technology requires strong leadership with the vision to formulate strategy that makes services more accessible through multi-channels, and more responsive to the needs of the stakeholders. It will be 'stakeholders' centred (Silcock, 2001) this summed up the extent by which eGovernment will make a difference and add value; however, that will depend on three factors - strong leadership, management of the 'digital divide' and well managed innovation.

What Dubai Police is trying to achieve aligning itself within the overall strategy of the UAE. Governments are taking many different paths to try to reach this point, i.e. the seamless integration. Some have slowly built more sophisticated transformational capabilities into their program. Others have regrouped and developed more focused action plans that target maximum value from every eGovernment investment they make. The leaders reap the real value of government, not only through measurably improved stakeholder service, but also through tangible savings in time, money and human resources to deliver the services. This was evident in the Dubai Police action plan and by implementing a paperless environment.

## 5.8 Cross-case Analysis Among Case Organisations: Similarities and Differences

The empirical evidence presented in this thesis confirms early research reported which indicates that success or failure is less of a technological issue and more a people issue (United Nations, 2008). In particular the ability to change public service cultures and motivates public sector workers to new ways of working, and provides adequately skilled and competent management and visionary leadership. This cultural change is one of the most important factors to manage. Reaffirming that processes need to be redesigned so they can become 'citizen-centric', whereby, placing a higher priority on citizen satisfaction. This is observed and documented in the practices of all case organisations.

Over the last few years, the areas that most frequently invested in by Dubai government agencies were infrastructure and Web sites/portals; these areas also were considered to be the most successful initiatives. The primary benefits of these initiatives were improved communication internally and externally and more effective/efficient customer service. They have significantly improved operational efficiency and organisational effectiveness. Other developments are more focused on the customer relationship (e.g. providing an easier and multi-channel access to services), which was a higher priority than government integration and knowledge sharing.

In fact, visionary leaders have the potential to address these identified complex issues associated with tGovernment and create significant benefits in working with citizens and businesses, with employees, as well other ministries and government agencies. However, tGovernment involves more than simply delivering services online. It involves transformation government around a citizen-focused model (i.e., one that is capable of meeting the complex pressures of stakeholders, threats and opportunities of today's global environment). As such, it requires a much more holistic approach to modernisation as well as strong leadership with the skills and vision necessary to drive transformation throughout the organisation and beyond. The change from eGovernment to tGovernment requires a major shift in paradigm thinking and strategic direction. It requires a new style of leadership that will be able to foster this transformation and provide the appropriate management and ICT-enabled infrastructure to support that dynamic and critical change. Hence, tGovernment requires 'out-of-the box' system thinking approach, crossing the traditional boundaries of current departments and organisations. Table 5.16 below presents a summary of cross-case analysis based on the domains of transformational gap environment.

| Domains of Transformational Gap Environment | Focus of Leadership Challenges in Case Organisations (DM, DNRD, and DP)<br>Similarities and Differences   |   |   |
|---|---|---|---|
|   | DM  | DNRD  | DP  |
| <b>eGovernance Domain</b>                   | <ul style="list-style-type: none"> <li>DM strategic visionary leadership style leads government agency transformation with a serious approach to Government and it was communicated to all stakeholders.</li> <li>It has undergone structural and operational changes to accommodate changing citizen and business needs.</li> <li>Enhanced the decision-making process, and adopted far reaching cost-effective integrated solutions.</li> <li>Integrate independent departmental based information systems and support radical change to business process transformation.</li> <li>Engage stakeholders through collaboration and partnerships.</li> <li>Build new bridges to realign resources, incentives, rewards and policies to support cross-boundary initiatives.</li> <li>Prominent feature of visionary leadership is evident from these case organisations. This is coupled with the use of 'Appropriate Integrated Technology' together with conducting radical 'Organisational Change' through an innovative style of multi-channel management.</li> </ul> | <ul style="list-style-type: none"> <li>DNRD is undergoing operational changes to include changing business needs and determined leadership to overcome any challenges.</li> <li>Adopt cost-effective integrated solutions by integrating their autonomous information systems on the local level with businesses.</li> <li>Support business process transformation, and in developing a strategic visionary leadership style that leads government agency transformation.</li> <li>DNRD eGovernment initiatives are progressing rather slowly with improved communications to engage stakeholders through collaboration and partnerships.</li> <li>Build new bridges to realign resources, incentives, rewards and policies to support cross-boundary initiatives.</li> <li>It has shown feature of leadership from this case organisation.</li> <li>Use of 'Appropriate Integrated Technology' together with conducting radical 'Organisational Change' through different complex multi-channel management.</li> <li>Trying to sustain high level leadership and commitment</li> </ul> | <ul style="list-style-type: none"> <li>DP chief has taken personal interest in developing and integrated Government to provide wider security to all stakeholders.</li> <li>Took the time and effort to communicate this vision to the civil servants and managers of other public agencies and institutions.</li> <li>DP has undergone major structural and operational changes to accommodate changing citizen and business needs.</li> <li>Enhance the decision-making process, adopt cost-effective integration solutions.</li> <li>Successfully integrating various information systems to support business process transformation.</li> <li>Develop a strategic visionary leadership style that leads government agency transformation.</li> <li>DP successful leadership has proven to be broadminded, enthusiastic and great communicators who engage stakeholders.</li> <li>Managed to build innovative approach to realign resources to provide more incentives and rewards. Established TQM to support cross-boundary initiatives.</li> <li>Prominent feature of visionary leadership is evident from these case organizations with the use of advanced technology to create a paperless environment.</li> </ul> |

|                                     |  |  |   |
|-------------------------------------|--|--|---|
| <p><b>Organisational Domain</b></p> | <p><b>DM</b></p> <ul style="list-style-type: none"> <li>• DM has taken the transformation seriously by creating a culture of change.</li> <li>• Demonstrated that visions should be future oriented enough to reveal opportunities with potentially important consequences.</li> <li>• It has created awareness of emerging innovative technology that provides a solution that attempts to meet their organisations requirements and integration problems.</li> <li>• Clearly, the issues and limitations presented in conducting radical organisational change indicate the need for the fundamental understanding in implementing tGovernment for development.</li> <li>• Business Process Reengineering services around citizens and businesses rather than automating existing services should become the central focus of future efforts to make eGovernment work.</li> <li>• It is realised that to be successful in government transformation and reap the full benefits, a cultural change for government employees needs to take place.</li> </ul> | <p><b>DNRD</b></p> <ul style="list-style-type: none"> <li>• DNRD implementing the eGate to provide a quick and easy access (count in seconds) through Dubai International Airport.</li> <li>• Providing advanced online monitory end-to-end visa transactions to businesses operating in Dubai (i.e. Domain II).</li> <li>• The objective of Business Process Reengineering services around citizens and businesses rather than automating existing services has become the central focus of future development.</li> <li>• DNRD has taken the transformation seriously by creating a culture of change. This is to demonstrate that visions should be future oriented enough to reveal opportunities with potentially important consequences.</li> <li>• It has created awareness of emerging innovative technology that provides a solution that attempts to meet their organisations requirements and integration problems.</li> <li>• Clearly, the issues and limitations presented in conducting radical organisational change indicate the need for the fundamental understanding in adopting tGovernment for development. There are a range of issues that requires further investigations such Policy and Legal issues.</li> </ul> | <p><b>DP</b></p> <ul style="list-style-type: none"> <li>• DP has taken the transformation very seriously by creating a culture of change. This is demonstrated in eWeek that visions should be future oriented enough to reveal opportunities with potentially important consequences.</li> <li>• It has created awareness amongst stakeholders of emerging innovative technology that provides a solution that attempts to meet their organisations requirements and integration problems.</li> <li>• Clearly, the issues and limitations presented in conducting radical organisational change indicate the need for the fundamental understanding in adopting tGovernment for development.</li> <li>• There are a range of issues that requires further investigations such Policy and Legal issues.</li> <li>• Implemnting Business Process Reengineering services around citizens and businesses rather than automating existing services has become the central focus of future efforts to make eGovernment work.</li> <li>• DPstrategic decision to relocate some of its operations to shopping malls and car dealers showrooms to make it easy for motorists to complete all transactions in one place without visiting different departments.</li> </ul> |
|-------------------------------------|--|--|---|

|   |  |  |   |
|---|--|--|---|
| <p style="text-align: center;"><b>Appropriate<br/>Technology<br/>Domain</b></p> | <p style="text-align: center;"><b>DM</b></p> <ul style="list-style-type: none"> <li>• DM has created the appropriate ICT infrastructure and strong partnerships with major companies.</li> <li>• It adopted an open-ended approach but regulated business environment.</li> <li>• It has set the standard of bridging the ‘gap’ in moving from eGovernment to tGovernment in using the appropriate technology.</li> <li>• DM is strongly investing in advanced technology to establish a strong integrated technology infrastructure (telecommunications, networks and systems).</li> <li>• DM is integrating with businesses, in particular, and government agencies to provide timely information and create knowledge societies and digital economy.</li> </ul> | <p style="text-align: center;"><b>DNRD</b></p> <ul style="list-style-type: none"> <li>• DNRD has created the right ICT infrastructure and strong partnerships with major foreign firms.</li> <li>• Opening employment opportunities for national graduates, and an open-ended but regulated business environment.</li> <li>• It is trying to set the standard of bridging the ‘gap’ in moving from eGovernment to tGovernment in using the appropriate technology.</li> <li>• DNRD realise that investment in technology infrastructure (telecommunications, wireless networks and systems) is the main bridge for individuals, businesses and government.</li> <li>• It is acknowledged that more agencies collaboration is needed. Hence, effectively managing channels to comply with stakeholders need.</li> <li>• DNRD has successful government initiatives with strong visionary leadership.</li> <li>• Leading this strategic change through an innovative application of ICT-enabled transform to reach that level of maturity for seamless integration.</li> </ul> | <p style="text-align: center;"><b>DP</b></p> <ul style="list-style-type: none"> <li>• DP has created the right infrastructure and strong partnerships with major foreign firms.</li> <li>• DP realize that investment in sophisticated technology and provide good infrastructure (telecommunications, networks and systems) is the main consideration to provide better securities for individuals, businesses, and government.</li> <li>• Opening employment opportunities for national graduates, and an open-ended but regulated business environment.</li> <li>• It has set the standard of bridging the ‘gap’ in moving from eGovernment to tGovernment in using the appropriate technology.</li> <li>• DP has revolutionised the internal processes and moved to paperless environment to ease the transactions of stakeholders and improve transparency.</li> </ul> |
|---|--|--|---|

**Table 5.16: Cross-Case Analysis Discussing Differences and Similarities**



## 5.9 Conclusions

As discussed earlier, governments need to integrate services seamlessly across horizontal and vertical levels of agencies. The technology challenges and the complexities of government mean that the task will not be easy, but only then will it provide the truly seamless service that will drive a broad take-up of services. Above all, governments need to aspire to service transformation. Highly effective strategies will use the opportunities presented by internet-based technologies to alter the delivery of government services dramatically. In some cases, services will be transformed (and improved) so radically that old service models will disappear completely. High-performance, digital governments will not be afraid to let them go (Accenture, 2004).

The public sector is increasingly seen as the main engine to bridge the digital divide at a country level, whereby public agencies/departments can start acting as model users of ICT and be the catalyst for others to follow suit. Further, the public sector tends to be the biggest provider of local content and it can cultivate and foster the further development of the local ICT industry. Conventional use of the prefix 'e' suggests that an activity is 'electronic' or digital in nature. By accepting this, eGovernment would simply refer to the use of electronic information and communication technologies in undertaking all kinds of government activities, in education, health, agriculture, governance, customs, etc. However, this does not reflect the value that the use of ICT can actually add to a government's ability to foster development. E-transaction refers to when all relevant transactions between government agencies, and between these agencies and private sector businesses and citizens can take place on-line. Transformed government is when a government has gone through the full transformation process, providing fully integrated services requiring broad organizational change and aligning its organizational set-up with the new capacities it has acquired as 'digital state'. The different stages of eGovernment maturity are closely linked to the successive phases of ICT implementation at institutional level. Over time, individual government agencies are expected to go through similar phases and share their experience.

The speed by which a country will be able to move from one stage of eGovernment maturity to the other is in part highly dependent on the political leadership, the human and financial resources it has to rely on, as well as on the capacity of different institutions to move through their successive phases from eGovernment to tGovernment in bridging the 'eChasm'. Dubai Government in general and the Dubai Police in particular are well positioned, given time, to make that quantum leap change. The institutional capacity of DM and the leadership role

shows willingness to engage their citizens by supporting and marketing participatory decision-making for public policy. This is in line with structures that are in place which facilitate citizens' access to public policy dialogue. (United Nations, 2008)

Finally, the quest to transform government is the aim of all governments around the world. However, achieving it requires visionary style of leadership with long management role commitment. As outlined earlier, achieving a 'one-stop shop', and hence a seamless integration, was succinctly presented by the British Prime Minister as a pledge during his speech at the Labour Party Conference in Bournemouth, United Kingdom in 2007: 'This is the future of public services; that is accessible to all; and personal to you.' Therefore, the one main challenge for governments is to identify user needs and to design eGovernment projects around those needs of the identified target users, and to collaborate effectively amongst government departments as the case with Dubai Government. Where the issue of collaboration that influences might cause constraints on transformational government for integration and interoperability are described by Scholl and Klischewski (2007).



## **Chapter 6: Revising and Evaluating the Conceptual Model for tGovernment**

### **Summary**

In Chapter 3, the conceptual framework for tGovernment implementation was proposed and discussed. The aim of this research is to explore the strategic leadership role in the implementation process of ICT-enabled transformational government and to validate the proposed conceptual model and to provide a frame of reference. Chapter 5 presented and analysed the empirical data that were collected in three identified case government organisations in Dubai. The reported empirical evidence revealed that the conceptual model and framework would be apposite if it was modified and reorganized. In doing so, this chapter revises this conceptual model and adjusts the relevant parts of the framework and considers the suggested modifications to what will be a theoretically backed model, empirically tested for tGovernment implementation which can contribute to successful benefit realisation and decision making.

## 6.1 Introduction

The drive to move the agenda of eGovernment forward for full benefit realisation has become an important strategic plan for governments around the world. Since the mid 1990s, public sector leaders, reminiscent of their counterparts in the private sector, have been struggling with how best to use the new emerging technologies to build relationships with citizens and deliver seamless integrated services. Since it is fundamental in modernising government for a better governance is to adopt radical change in business processes. Many public sector leaders believe that eGovernment will increase efficiency and cut costs; however, they are faced with 'Rhetoric vs. Reality'- in closing the gap- by moving from eGovernment to tGovernment. The strategic leadership role in the implementation aspects of tGovernment has not been given adequate attention in the research literature. This is identifies today's eGovernment status, which highlights the characteristics that differentiate the various levels of development on the key issues governments need to consider to improve the level of online services provided to citizens and businesses. This research identifies number of voids exist regarding a suitable model and transformational framework for the process of tGovernment implementation and adoption in public sector organisations. Therefore, this chapter contributes towards developing a leadership model and framework of reference that can make better understanding of transformational government domain through identifying themes and issues associated with the implementation process. This chapter offers empirical analysed data derived from the three case studies organisations in Dubai that can be used as substantiation to revise the proposed conceptual model and framework of tGovernment, as presented in Chapter 3.

The preceding chapters in this thesis have attempted to:

- Introduce the problem of the barriers related to eGovernment in moving to tGovernment within public sector organisations. It also offered the rationale behind the decision of pursuing this complex topic, based on the empirical observations made by the practitioner and other authors and put forward the approach adopted in the structuring of the thesis.
- Analyse the ongoing debate which is reported in the literature, this is to provide profound understanding of the evolution process of eGovernment. This is completed through a comprehensive literature review by outlining of the

intellectual and pragmatic sides of public sector organisations. Further, it highlights the changes that are occurring within public management as a body of knowledge, theory and practice.

- Review the relevant theoretical approaches to organisational change, that are covering the various definitions, classifications and models such as the 'eGovernment maturity model', 'Technology Adoption' and 'System Thinking-Institutional-Structuration-Stakeholders theories'. The nature of public sector transformation knowledge has been explored. The study of the leadership for leading transformation provided an understanding of inter- and intra-organisational for cross agencies collaboration that is relevant to the present research.
- Explore the traditional eGovernment initiatives in public organisations and the radical transformation it has undergone in recent years. It has examined its responses to the environmental (internal and external) pressures of increased globalisation, more demanding and sophisticated citizens and businesses, and emerging technological advancement. The focus of research has been on two of the public sector transformation, organisational ICT-enabled transformational change and leadership.
- Provide an exploration of the theoretical frameworks that is relevant to organisational change and the public sector respectively, namely, System Thinking Theory, Stakeholder Theory, Institutional Theory, and Structuration Theory. It has put forward a theoretical model that provides a lens to explain the transition stage to tGovernment in bridging the gap of what this research termed 'eChasm' (Chap 3), to be validated by the primary research undertaken.
- Present the understanding of the philosophical issues on which the research design is based. It discusses the different approaches and strategies to the research and will show the logical step-by-step approach to the choices made in the data collection and analysis methods used. Throughout this thesis it has discussed the various problems related to the primary and secondary research process and the solutions adopted.

The purpose of chapter 6 thus is to substantiate and refine the conceptual model and theoretical framework put forward in Chapter 3 through a discussion of the synthesis of the three case study analyses done on the data collected on government agencies in Dubai. The chapter is structured along the framework of issues identified in Chapter 5, which are considered essential in the process of validation of the proposed theoretical model. The purpose of the primary and secondary research analysis is to prove or refute the conceptual model as proposed in Chapter 3.

The chapter concludes with the proposition of a novel empirical leadership model for the implementation and adoption of transformational government.

## **6.2 Lessons Learned from Case Studies**

Although the pace of change in the public sector is generally the implementation process of tGovernment in case organisations varies considerably. The empirical data indicates that two of the case organisation (DNRD and DP) viewed the implementation and adoption of eGovernment as an evolutionary process involving a sequence of stages that starts with an initial webposting of government information, increasing over time in content, layout quality of interface, and functionalities. This is developed over a period of time, where the web portal will be developed by successive addition of functions and modules with some interactive features and capabilities for citizens and businesses. Then, some government agencies will start offering progressively more or less full transactional capabilities and additional set of services. However, DM differs in a way that their practice view government transformation as a revolutionary that is required radical change. This finding confirmed that the theory of stage of growth models, technology adoptions and radical change in implementing business process reengineering can be used in addressing the tGovernment implementation and adoption process in the context of the public sector. Added to this, these utilizations of theories to initiate change have proven the point for a visionary style of leadership to accommodate transformation in government organisational settings.

Results from the case study shows that Dubai government agencies have focused on improving information access and exchange. While all reported agencies recognise the need for profound restructuring in internal organization and processes and collaboration across agencies to achieve the real value of government transformation, some of them they have not yet established the full capabilities to accomplish this. In all cases, interviewees agreed that

some stages could be implemented in parallel, in particular the DP findings had shown that the developers had been working in stage 2 (One-way services delivery) and stage 3 (Two-way service delivery) at the same period. The DM on the other hand had performed most of the requirements of stage 2 and some of stage 3, but when the resources are available, the DM can perform both stages in parallel. Further, senior management in order to test the capabilities of stage 4, they instigated seamless trial through the implementation of eWeek. This demonstrated the leadership role in leading radical change to cope with tGovernment realisation and move further from 'Rhetoric' to 'Reality'. The DNRD has the same perspective, and hence it plans to implement stage 2 and 3 in parallel for saving time. These findings are justifying the change of implementation at different stages sequence that proposed in Chapter 3 into new structure for the revised of stage of growth model of conceptual model. The new structure of the revised growth model, addressing the gap 'eChasm' as key enablers, is shown in Figure 6.4. This can be illustrated as eGovernment constitute the first three stages (technology based) where functionality mainly vertical within organisation. In order to claim transformational domain, the prominent feature of visionary leadership is evident from these case organisations. This is coupled with the use of 'Appropriate Integrated Technology' together with conducting radical 'Organisational Change' through an innovative style of multi-channel management. The go back to basic drawing board to completely redesign processes through an effective use of 'Business Process Reengineering' that lead to a different organisation environment that cater for 'Cultural Change', and hence satisfying citizens and businesses in fulfilling 'Stakeholders Expectations'.

There is no doubt that those findings of cases analysis indicate that complexity of the implementation process for tGovernment increases gradually when reaching higher stages. Since the domain of transformation need more sophisticated ICT tools and managerial capabilities for cross collaboration, if necessary, to be incorporated within the existing environment. The reason for this is that the major works for integrating and connecting the most active part of information systems across government organisations had been established throughout the Dubai Government portal architecture as presented in Chapter 5. However, the sophistication of each agency portal remains within the control of individual organisation. Therefore, all case organisations emphasise that the works is still in progress in generating a single tGovernment portal and integrating all Dubai Government services. As a result, some initiatives have only provided commonplace benefits in terms of operational efficiency, cost reduction and organisational effectiveness. However, leading example such as Dubai Municipality has provided a leading role for innovative transformation followed by

Dubai Police. It is realised that to be successful in government transformation and reap the full benefits, a cultural change for government employees needs to take place. This cultural change is one of the most important factors to manage. Reaffirming that processes need to be redesigned so they can become 'citizen-centric', whereby, placing a higher priority on citizen satisfaction. This is observed and documented in the practices of all case organisations.

Over the last few years, the areas that most frequently invested in by Dubai government agencies were infrastructure and Web sites/portals; these areas also were considered to be the most successful initiatives. The primary benefits of these initiatives were improved communication internally and externally and more effective/efficient customer service. They have significantly improved operational efficiency and organisational effectiveness. Other developments are more focused on the customer relationship (e.g. providing an easier and multi-channel access to services), which was a higher priority than government integration and knowledge sharing.

### *6.2.1 Regulatory and policy environment strategy*

To attract and provide incentives for private sector initiatives, which an integral part of Dubai Government strategy, an enabling micro-economic policy environment needs to be put in place. With the current economic climate and public spending cuts, government may only achieve success with private sector involvement and support. This includes reform of the telecommunications sector and policies favouring more private investments, in a similar trend to Dubai Internet City.

Governments and public institutions are the main stakeholders in promoting digital economy. Not only are they the operators of Government websites, but their role is also to advance the development of private sector initiatives that complement digital government and thus make it a success. Through their public policy acts, governments and public institutions must demonstrate their commitment to the cause of ICT and consequently digital government. This should happen at two levels: at a higher level, public institutions must set up a National eStrategy which is including a transformational plan of action that includes the vision and priorities initiatives. This is has just started taking place at UAE central government level. They are contemplating setting up different committees to deal with the different aspects of the National eStrategy. At the local government level, each Emirate in the UAE has own



committees and institutes that coordinate with the national committee and will be charged with a detailing of the strategy and with its implementation.

### *6.2.2 ICT infrastructure and staffing strategy*

Investment in technology infrastructure (telecommunications, networks and systems) is the main bridge for individuals, business, institutions and government to information and knowledge societies and digital economies. The UAE in that respect spare no effort in this domain where government leaders know full well that ICT and tGovernment can only thrive when the necessary technical infrastructure is available. Sufficient investments are in place with wide-reaching backbone networks, broadband access and the required systems and networks. There is no delay in developing the telecommunications sector. This is by putting in fast and secure ICT networks to encompass voice, data and media, will promote the economic prospects of the UAE, closing the gap of the digital divide with the rest of the world and shift the process of innovation and technical progress to transformational level. For these reasons, Dubai is establishing a modern and secure telecommunications and networks infrastructure, an info-structure, relying on an efficient and developed telecommunications sector. There is a strong believe in the government leadership where it will be a determining factor in economic development, and in raising total factor productivity growth. It is sound to recall in this respect that telecom sector reform and efficient private sector participation in telecommunications in a large number of countries, has generated more competition, more job opportunities, generating higher investment rates in the strategic sectors of the media, telecommunications and IT, as well as stimulating the financial markets as a result of share ownership in privatised entities and the financing of new companies. The recent opening of Dubai Financial Centre is a product of the vision that is shaping modern Dubai.

For the success of transformational government, citizens, corporations and institutions need to be able to handle the new emerging technologies that come with it. Therefore, it is crucial to invest in human capital. The two most prominent ways to achieve this include an institutionalisation of eLearning i.e. the usage of ICT in all areas and to be part of an integrated framework of education with the advancement of education in the field of ICT. This should include education at all levels, i.e. from universities down to primary schools, with degrees and certificates to be earned in the field of ICT, such as the ECDL driving license which is recognised and encouraged in the UAE. Just as important as the type of education is the quality of education: where Dubai Police set up aeTQM College to train

initially own personnel as part of officers development program which later on extended to serve the rest of the Arab World. This is allowing government agencies and educational bodies to direct their expenditures toward programs that further the level of proficiency and research of their work force.

### *6.2.3 The three Pillars of ICT-enabled Transformational Government*

As detailed earlier, the main obstacle to moving towards a citizen-oriented service delivery model is the administrative and managerial culture coupled with the resistance to change. However, there is a certain degree of awareness amongst government leaders that administration departments need to collaborate, breaking down the very powerful silo organisation within the Dubai central administration. From this perspective, government leaders and local government administrations have the opportunity to play a key pivotal role in promoting a new relationship with citizens and businesses. A key fundamental success factor for the balanced implementation of tGovernment initiatives is visionary political leadership that supports organisational change for benefit realisation and the actualization of transformed government services. This adoption in itself is a key element contributing to a wider public administration reform process. Adding further other categories that form the foundation pillars of transformation government namely:

- **Key Motivators**

Improved customer satisfaction, Service quality enhancement, Improved process efficiency, Cost reduction, Cultural change, Flexible / better work practices, Achieve functional integration, Eliminate non value adding processes, Better strategic exploitation of ICT, Improved image and branding

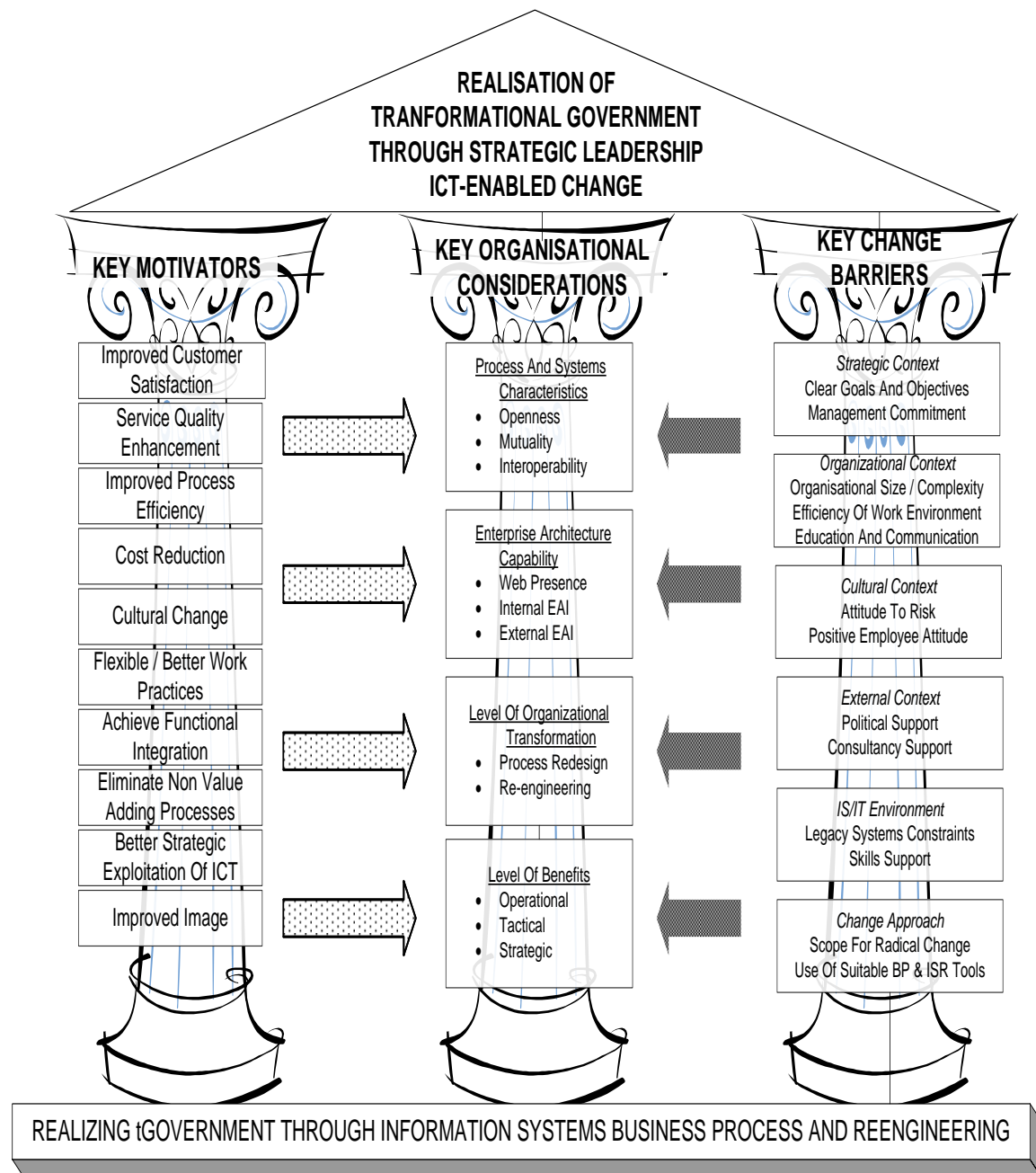
- **Key Organisational Considerations**

- Process and systems characteristics (openness, mutuality, interoperability)
- Enterprise Architecture capability (web presence, internal EAI, external EAI)
- Level of organizational transformation (process redesign engineering)
- Level of benefits (operational, tactical, strategic)

- **Key Change Barriers**

- Strategic context (clear goals and objectives, management commitment)
- Organizational context (organisational size/complexity, efficiency of work environment, education and communication)
- Cultural context (attitude to risk, positive employee attitude)
- External context (political support, consultancy support)
- IS/IT environment (legacy systems constraints, skills support)
- Change approach (scope for radical change, use of suitable tools)

Where they provide the basis for realising transformational government through restructuring, information systems enabled technology with redesign of business processes and reengineering. The level of interaction between these key dimensions is illustrated in Figure 6.1 below.



**Figure 6.1: Sub-themes -the three pillars for transformational government realisation**

### 6.3 Revised Conceptual Model for tGovernment

As discussed in Chapter 3, the proposed conceptual framework consisted of three different models, namely, the theoretical model that guide this research (see Figure 3.1), the stage of growth model for the eGovernment gap “eChasm” in the stages of tGovernment to identify key enablers for tGovernment (see Figure 3.2), which represents the fundamental element of the proposed framework, eGovernance-technology-organisational-domains model (see Figure 3.3). In Chapter 3, this research developed what might be considered an appropriate framework that could fit the context of case studies in Dubai. In doing so, become a flexible basis that can be validated through other fieldwork.

#### 6.3.1 Emerging Themes in tGovernment

Six key main themes emerged from this empirical research for tGovernment:

- Visionary/Strategic Leadership
- Stakeholders’ Expectations
- Business Model Transformation through Business Process Reengineering
- People and Cultural Change
- Appropriate Technology Considerations for Organisational Change
- Multi-Channel Management
- ePayment

As explained and analysed in detail in Chapter 5, the application of the proposed conceptual framework in fieldwork had been placed in different contexts amongst case organisations. This would help to develop an integrated framework that can be used as a guide in context of government organisations for the implementation of tGovernment. In doing so, this research developed an evaluation matrix from those emerged themes that shows the similarities of the proposed elements and their components across the three case organisations. The following Table 6.1 shows the synthesis of the revised conceptual framework components using findings derived from empirical data. This table confirms the validity of the conceptual framework and also identifies those factors that influence the process of tGovernment implementation.

| <b>Parameters of Emerging Themes for tGovernment</b>   |   |   |  |
|--|---|---|--|
| <b>Stakeholders' Expectations</b>  | <b>Business Model Transformation</b>  | <b>Strategic Leadership/People and Cultural Change</b>  | <b>Appropriate Technology Considerations</b>   |
| <ul style="list-style-type: none"> <li>•<b>Not in-line but on-line strategy:</b> Citizens and businesses demand services through more convenient innovative channels</li> <li>•Citizens and businesses require <b>24x7 High Quality</b> Services</li> <li>•Citizens and businesses require <b>Multi-channel availability and consistent</b> services; internet access mobility, call centre, etc.</li> <li>•Citizens and businesses require consistent <b>Multi-lingual</b> services: Arabic and English</li> <li>•Citizens and businesses demand <b>High-performance</b> services</li> <li>•Citizens and businesses demand <b>secure and trusted</b> services</li> <li>•Citizens and businesses require <b>one-stop-shop</b> in order to minimise the physical interactions with various government agencies</li> </ul> | <ul style="list-style-type: none"> <li>•Dubai Government provides <b>1900+ services provided by 20+ Government Departments</b></li> <li>•Some Government services have complex rules and regulations resulting in <b>bureaucracy and red-tape</b></li> <li>•While providing traditional counter based services, each service needs to be <b>migrated from counter based to innovative channels;</b> hence significant amount of time and resources are required on top of the existing ones</li> <li>•Requires <b>radical changes in business processes</b>(in certain cases full reengineering, in some other cases phased approach via continuous improvement)</li> <li>•Each <b>eService implementation goes through multiple phases</b> business re-design, technical design, development, testing, implementation, go-live.</li> </ul> | <ul style="list-style-type: none"> <li>•Requires <b>innovative leadership at various critical levels</b> to implement the new initiative</li> <li>•Requires <b>new skills to manage new culture, redesign and implement business processes</b></li> <li>•Establish new approaches and methods to <b>manage the new access channels</b></li> <li>•The technical divisions need update <b>new skills for new emerged technologies</b></li> <li>•Requires both <b>the augmentation of existing skills and also the acquisition of new skills</b></li> <li>•<b>Skills and competency planning, training, skills enrichment</b> become key issues in people management</li> <li>•New style of management, <b>leading edge skills were already scarce both regionally and globally</b></li> </ul> | <ul style="list-style-type: none"> <li>•<b>Technology is rapidly changing</b> with new technologies emerging at an accelerated pace</li> <li>•<b>Life-cycle of technologies is short</b> resulting in a <b>disruptive change</b> in some cases</li> <li>•<b>The life-cycle of an eService</b> today from the design &amp; implementation to achieving benefits through adoption by Citizens and businesses is in some cases <b>greater than the life-cycle of technology</b></li> <li>•In some cases, <b>technology has not fully matured</b> but is still <b>in the process of build-up and standardisation</b></li> <li>•<b>Islands of information systems,</b> legacy systems need to be <b>integrated and interoperable</b> while implementing the new ones</li> </ul> |

**Table 6.1: Dubai Government Initiative Future Challenges**

As presented in Table 6.1, the empirical data and key issues within each theme derived from the case studies revealed that the proposed conceptual framework that consisted of the stage of growth model that were adaptable for the research context; the Government of Dubai. The reason for this is that these factor elements were precisely identified by this research as influencing the process of tGovernment implementation in all the three case organisations. The selection of suitable stage of growth model, during literature analysis, was made in systematic way and exclusively to fit and be compatible with the context of government organisations in Dubai. This had led the validation process of the proposed conceptual framework became more logical with fieldwork and not at odd with empirical data.

Furthermore, the findings of the empirical analysis illustrated in Chapter 5 provided significant modifications for the proposed model; i.e. complete transformation. The implementation sequence for the stages of growth model has been restructured, and the functionality of final stage of the growth model has been changed (the revision of this model will be elaborated further in later section). The reason for this is that the strategy for implementing tGovernment in Dubai was based on a series of government initiatives, and the priority for implementing these projects was based on certain factors, such as eGovernment readiness, availability of finance, leadership desire to change, and availability of new technology that is compatible with existing legacy systems.

According to Chapter 5, the analysis of empirical data revealed that the most of factors proposed in conceptual framework have been supported by fieldwork, as presented in Table 6.1. The findings also have derivative to new influential factors that should associate with the revised model in which they are playing a significant role in the process of change and tGovernment implementation in Dubai. The implication of these factors is that they influence the process of decision-making in all case organisations and consequently determine the attainment of maturity level of tGovernment. A detailed presentation of the case organisations in Chapter 5 has confirmed the strategic role of leadership for benefit realisation in the revised model for tGovernment. The findings have also supported many of barriers and benefits that have found in the literature as Chapter 2 has reported. In addition, empirical data has confirmed new benefits that promoted the case organisations to adopt tGovernment and also has identified new barriers that negatively influenced the implementation process of tGovernment in Dubai.

The following sections will elaborate on the revision of the proposed conceptual model and provide a detailed description for the revised models and their components, which is illustrated in Figure 6.1.

### *6.3.2 Revision of the eGovernment Stage Model*

The case studies of the three government agencies in Dubai presented in Chapter 5 have shown that the implementation of tGovernment requires visionary leadership to move the government agenda for a digital future. The progress through the stages to reach seamless integrated services requires a number of successive initiatives and identifiable champions among different stages. This is the case as each stage reflects a particular level of maturity in terms of the use and management of ICT-enabled change in government organisation. In particular, the case of Dubai municipality with its innovative initiatives that has to instigate transformational services which resulted in a significant knowledge in dealing with radical transformation. This is directly related to domain II of the conceptual model. The senior management of the three organisation places citizens and businesses at the centre of their redesign process, which is in line with the reported literature for a successful implementation of tGovernment. In addressing stakeholders need in the design process has provide valuable information about the organisation ability to cope with change, and afterwards, it developed a series of projects to advance the functionalities and to provide mature interactive services.

Currently, the Dubai Naturalisation and Residency Department (DNRD), for example by using the eGate, provide a quick and easy access (count in seconds) for registered individual and businesses through Dubai International Airport. This is also providing advanced online monitory end-to-end visa transactions to businesses operating in Dubai (i.e. Domain II). Whereas Dubai Police relocate some of its operations to shopping malls and car dealers showrooms to make it easy for motorists to complete all transactions if necessary in one place without visiting different departments. Hence, effectively managing channels to comply with stakeholders need. All these successful government initiatives have a strong visionary leadership in senior management of public services that personally leading this strategic change through an innovative application of ICT-enabled transform. This is to reach that level of maturity for seamless integration and supports the need of having a stage of growth model for tGovernment implementation and adoption in public sector organisations, as shown in Figure 3.3).



## 6.4 A Leadership Model for Transformational Government

The challenge for leadership strategic thinking is to address the largest gap between the Dubai government vision and the current implementation resides in the government integration area across all agencies and ministries. This gap is due to much more needed transformation of internal organisation and radical processes design to facilitate seamless delivery of government services in a customer-focused fashion, and lack of collaboration across government agencies. The tGovernment initiatives require substantial investments and innovation before they are ready for public use. Therefore, transformation implies administrative and civil service reform as part of the business process re-engineering of government. This is led by a strong, high-level leadership, which is typically at the level of the head of state, such as the case of Dubai government. With much needed leadership to supply the vision, establish a national eStrategy and a core ICT task force together with rallying support from the public sector organisations and the private sectors. This resonates with the vision of Dubai government leadership in setting the intensity of strategy of Dubai government that there is no room for complacency as the Ruler of Dubai stated on many occasions in addressing government officials. This is truly reflected in this research on the ground in translating those visions in making Dubai a ‘Business Hub’ and easing the life of citizens and businesses:

*“I request one thing from you, but I request that you do it today and not tomorrow, for in my terminology there is no such thing as “doing tomorrow”, but rather “doing today”. I request that you stand by my side in the development and building journey of our nation. We must all build our nation with our hands and brains; we must serve our beloved and giving nation in a manner that enables us to pay back its generosity through creative work and preserve its dignity, pride, and great achievements”<sup>23</sup>*

The resulting principal that lies beneath ‘Digital Economy Transformation’ is effective government leadership. Since achieving transformation requires the mobilisation of those with the power to redefine the role of government. In reproducing government online by mere use of technology is not the desired outcome of future government. Without

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<sup>23</sup>-- His Highness Ruler of Dubai and Prime Minister of UAE during his passing by a workshop for the UAE Government Leaders Program, June 2008

further effort to transform and integrate will limit the benefit of digital government. Therefore, strong visionary leaders are essential- those who can best help navigate unknown challenges ahead. Where in harnessing the power of Information and Communications Technology requires strong leadership with the vision to formulate strategy that makes services more accessible through multi-channels management and more responsive to the needs of the stakeholders. Transformation is a highly on demand environment that is extremely responsive and that extends dynamically across extended organisations. That means an even more drastic transformation where the government has to rethink how it makes strategic decisions and delivers quality services. In moving towards single access point the on demand model involves major trends namely: business model transformation, infrastructure transformation and cultural transformation. These trends are combined with those themes emerged as a result of this research which illustrated in Figure 6.2 and discussed below.

Governments, similar to businesses, must meet the rising expectations of citizens and businesses, serving them as ‘customers’- just as private sector and eBusinesses already do - by transforming the way they run their ‘business’. This is to use technology in an innovative way and more effectively to create a better ‘user’ experience.

#### *6.4.1 EGovernance Domain: Visionary Strategic Leadership*

- Demonstrate proactive senior leadership by:
  - a. providing a compelling vision and reason to change
  - b. encouraging government officials to act in unity
  - c. focusing on one or two priorities at a time and initiating change
- Change the culture of service offering by:
  - a. focusing on the customer experience (i.e. not just government offerings)
  - b. utilising customer advocates to redefine their needs
  - c. providing a clear plan for employee development and rewards system
- Create governance system by:
  - a. having clear reporting structure to senior management
  - b. clearly position business leaders as champions
  - c. providing clear ownership for initiatives and accountability for results
- Develop on performance-driven environment by:
  - a. identifying key performance measures
  - b. developing a sound business cases and metrics
  - c. tracking and measure those added values

#### 6.4.2 Organisational Domain: Business model transformation

- Re-think the government business model by:
  - a. adding value services provided to customers
  - b. reducing cost
  - c. adding flexibility into the processes through BPR
  - d. considering the unique advantages (e.g., risks, privacy, security, etc.)
- Identify core- and non-core processes:
  - a. reconstruct the business architecture
  - b. identify natural processes for integration (e.g., administrative processes – human resources, Finance, eProcurement)
  - c. determine critical functions
- Establish Partnership Models:
  - a. assess partnership benefits, costs and risks
  - b. set performance standards, and establish monitoring framework
  - c. establish security-rich, compatible technology environments
  - d. evaluate different funding models.

At this phase of transformation, which is the most sophisticated level in the on demand hierarchy, organisations embrace the concept of virtual government, in which one government may partner with other governments or business partners to respond more rapidly to changing environments and stakeholder needs. For example, agencies could establish a reciprocal relationship by making their resources available to one another in a security-rich, real-time environment. Collaboration at this level is defined as demonstrated qualitative improvement of sharing and integration with unpredictable partners. This requires a strong leadership who has a 'horizontal muscle' to manage the complex relationship of diverse interest groups. Whereby is able to differentiate and extend core services and to address unpredictable conditions and respond accordingly.

The largest gap 'eChasm' between eGovernment-given importance to complex components of transformation and change - with the current stage of tGovernment implementation occurs in the organizational process transformation. This is to say that transforming governmental organisational processes requires a shift in the way governments manage citizens and businesses requirements. As discussed earlier and evident from case research structural change is eminent. Managing the move from vertical and separate service delivery, by each internal organisation and agency, is fundamental to

seamless horizontal integration, cooperation and interoperability. This requires a transformation of their system infrastructures.

#### *6.4.3 Appropriate Technology Domain: Infrastructure transformation*

- Optimize the Infrastructure by:
  - a. consolidating systems to reduce cost and complexity
  - b. build integrated security features into the system making them an ‘add-on’
- Establish architecture and standards by:
  - a. using authentic industry standards, not product defaults
  - b. defining the overall organisation architecture
  - c. defining the agency portal strategy (e.g. look/feel, linkages, updates)
- Extend infrastructure to other governments and private sector partners by:
  - a. paying attention to identity, security and privacy
  - b. developing web interfaces based on industry standards
  - c. forcing electronic interchange (whenever possible)
- Consider utility IT capabilities by:
  - a. introducing grid computing (e.g. dynamic/variable computing power)
  - b. considering autonomic features (e.g. manageability, availability)
  - c. providing sourcing alternatives

Although the dominant view in the literature is that government policies reflect national cultures, government’s actions are an important source of influence on cultural change. Government organisations must be prepared to reengineer their processes to adapt to the demands of an unpredictable environment. Consequently, citizens and businesses are demanding more effective and efficient delivery of services as well as an improvement in the quality of information received. While ICT-enabled change can be used to transform the way in which governments offers their services, it should be acknowledged that a detailed business case for implementing the technology must be undertaken with emphasis on cultural change, greater degree of commitment, organisational structure and business processes.

While the government of Dubai recognises the need for profound restructuring in internal organisation, processes and collaboration across agencies to achieve real value of government, transformation has not, yet, allowed for the development of the capabilities to accomplish fully this vision. However, with the support of visionary leader, such as the Ruler of Dubai as the case in this research, in simplifying the processes and transforming government from a bureaucracy-centered structure to a citizen-centered structure, this may

happen. This is recognized and acknowledged in an early study conducted in two developed countries where lack of leadership as a major challenge in the context of tGovernment as well as culture and resistance to change (Kamal *et al.*, 2011).

The model presented in Chapter 3 is completely transformed as a result of the literature review supported by empirical case study analysis presented in Chapter5 to the illustrated model in Figure 6.2 below.

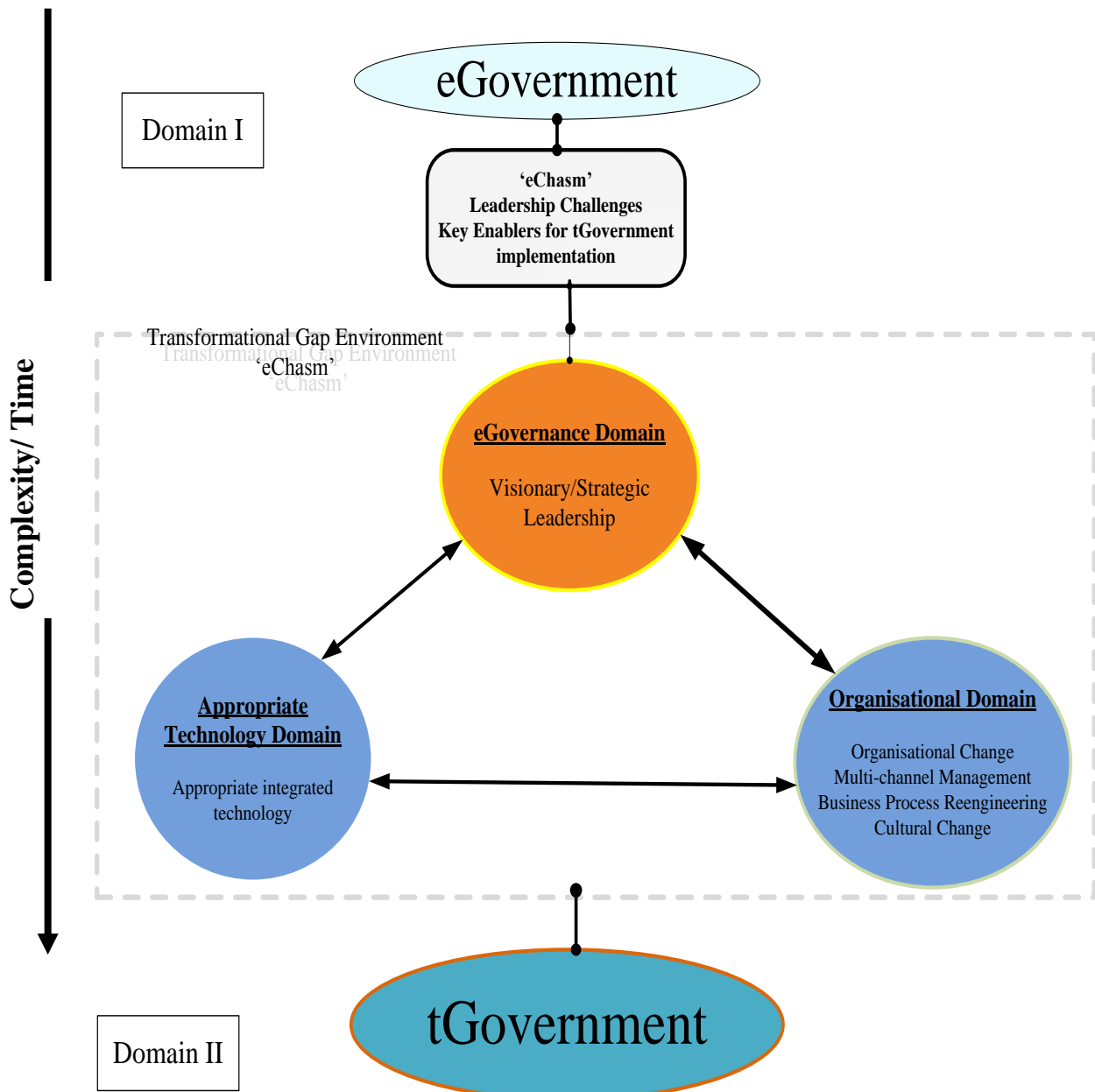


Figure 6.2: Visionary Leadership Challenges Model in Transformational Government

The empirical evidence presented in this thesis confirms early research reported which indicates that success or failure is less of a technological issue and more a people issue (United Nations, 2008). In particular the ability to change public service cultures and motivates public sector workers to new ways of working, and provides adequately skilled and competent management and visionary leadership.

As a result of this research transformational government is redefined as follows:

*“tGovernment is the radical transformation of government where visionary leaders are able to exercise horizontal muscle in crossing traditional boundaries through ICT-enabled government operations, the deployment of business process reengineering to internal and external processes, create new structures and culture to enable the full realisation of citizen-centric government that are transparent, cost effective and efficient.”*

## **6.5 Conclusions**

This chapter is the result of an extensive literature review and case study research which has concentrated on the revision and validation for the development of a proposed model for tGovernment implementation and adoption. Identified themes have been integrated into a unified model based on the empirical evidence presented, analysed and justified in Chapter 5.

The revised stage model and framework is argued to be an effective instrument for leaders in government organisations to support their decisions towards the implementation of tGovernment. This Chapter highlights the importance of strategic leadership in initiating change through ICT-enabled technology to achieve the desired transformation for improving citizens' experience with government. Hence, many information systems decisions for tGovernment in the case organisations are political and these decisions are influenced by many aspects, such as political condition in the country, the level of commitment in local agencies, and the support from central government. The empirical data revealed that strategic followers and collaboration amongst agencies are paving the way for a new style of leadership that can fill the 'eChasm' gap in the progression from domain I (eGovernment) to Domain II (tGovernment). Additionally, the case organisations would not succeed in achieving progress without the support from stakeholders. The findings also elicited new

factors within emerged themes (Table 6.1) that pose major challenges for the Dubai Government. These factors will play a key role in the case organisations to speed up the process of seamless implementation and promote systematic approach for future development.

This research indicates that leaders in the public sector and government agencies are facing enormous challenges for the development and implementation of transformational government. Therefore, the government is undertaking a restructuring at a very high government level of its governance. This restructuring also implies some radical changes in policies, procedures and business process that require a complete strategic rethink to accommodate ICT-enabled change. The eGovernment maturity curve is our primary measure of progress in electronic service delivery. In putting services online, governments typically start with simple publishing, then move toward greater interactivity, and ultimately transaction and seamless capabilities. External pressures – both service and cost-related – are forcing governments to invest in the integrated systems that transformation required to enable effective tGovernment. This is further to complete the transformation to flexible, outcome-focused organisations that citizens and businesses are learning to expect. In order to do so, governments will need to develop on demand capabilities. Moving to an on demand environment will require an open and scalable infrastructure, new technologies, and appropriate and targeted implementations of reengineered processes. These steps will help break down traditional service delivery silos and challenge the very roots of government culture.

Organisational structure and culture have an influential role in the ability of all organisations, including government ones, to build on-demand projects. Culture and structure also contribute to resistance for change for political reasons. Therefore, the role of senior management is considered essential in this issue, since they can send strong signals about the importance of transformation to other stakeholders within the government organisation to involve them in the project process, build support, and then eliminate resistance. This was evident in the case of Dubai Municipality. For instance, information technology training courses could be one of the solutions provided to employees to educate them how to use computer systems and enrol them on accredited courses such as ECDL driving licence. It would be useful also that top management show strong commitment to the adoption and usage of new business systems within the organisation and refusal to accept any excuses for not using the computer system in all business functions. This was evident in the case of DNRD where it took a long leading time to adopt the new installed system. Governments

need to integrate services seamlessly across horizontal and vertical levels of agencies. The technology challenges and the complexities of governance mean the task will not be easy.

Finally, the analysis of empirical data also shows that case organisation with government officials that recognise the full benefit of tGovernment has initiated fundamental organisational change and transformation of their services. This was more promoted, and acted as champion, to adopt tGovernment than those whose management had a lower level of appreciation of the perceived benefits. This provides further evidence that perceived benefits influence the process of tGovernment implementation. The empirical results also indicated relationship between barriers and tGovernment implementation. This dynamic relationship affects organisational considerations between key motivators and key change barriers as illustrated in Figure 6.1. To conclude with the ruler of Dubai in emphasizing the importance of collaboration amongst government departments and ministries: *“by bringing in change the federal government processes will not only improve the efficiency of the government, but will also enhance and improve the mechanism of cooperation between the federal and the local governments”*<sup>24</sup>. This is the vision of a leader facing leadership challenges who is transforming the business of Dubai Government.

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<sup>24</sup>-- Ruler of Dubai and Prime Minister of the UAE, Dubai Vision 2010.





## **Chapter 7: Contributions, Limitations, Recommendations for Future Research, and Conclusions**

### **Summary**

The purpose of this chapter is manifold: (a) to conclude the empirical research carried out in this thesis, (b) to present its achievements and contributions, (c) to highlight the limitations in the research and finally, (d) to propose a Government research domain of influence for further investigation. Chapter 7 begins by an overview of the research conducted in this thesis drawing conclusions derived from the normative literature and empirical findings that are reported in Section 7.1. The research novelty claimed in this thesis is summarised in Section 7.2. Thereafter, in Section 7.3 the limitations of this research are identified and presented. Finally, this chapter concludes in Section 7.4 with the identification and discussion of further research directions and conclusions in Section 7.5.

## 7.1 Main Findings of this Thesis

The main findings derived from the work are:

- The literature is rather limited regarding tGovernment implementation and adoption in government organisations. This has been confirmed while conducting empirical research in different government organisations.
- The analysis of the literature has led this research to identify issues, with some limitations, that are already considered challenges in organisational change. Many of the limitations identified from the literature are empirically confirmed and reflected on in Chapter 5.
- Several studies exist that investigated various factors that influence integration technologies. However, those factors from these studies may be specific to one sector (private) and may not be applicable to other sectors (public) and accordingly, may not influence tGovernment. The lack of studies in the context of government provided the rationale for this study and its contribution to knowledge. Based on the literature analysis and findings, several factors are proposed that may be influencing transformational change in government organisations. These suggest that these factors can be used by government leaders to better understand their organization, culture and other factors before embarking on major radical change of government eServices. Most of the factors are validated with the identification of emerged themes that could constitute new factors from the case organisations as demonstrated in Chapters 5 and 6.
- It is recognised that there is a literature gap in that none of the previous studies on tGovernment implementation and adoption have investigated leadership challenges on the technology adoption lifecycle phases. This research has fulfilled this literature gap by proposing adoption lifecycle phases and using technology adoption diffusion to highlight early adopters of technology to initiate transformational change. These phases are validated with case organisations identifying new adoption lifecycle phases as exhibited in Chapters 5 and 6.

- Theory formulation that is drawn from other disciplines whereby it captures the dynamics of change from eGovernment domain to tGovernment domain. This has assisted in identifying the importance emerging themes influencing the transformation of government organisations; (in their specific category) on different phases of the tGovernment implementation.
- In putting together the jigsaw of initiated reform in government organisations in the drive for tGovernment, interesting matters emerged regarding radical change. Leaders taking personal charge in leading transformation have successfully managed business processes by applying business process reengineering. This consideration has become critical at the boundary of transition from domain I (eGovernment) to domain II (tGovernment) and which was reflected in the conceptual model in Chapter 3. The proposed model is validated through the empirical research conducted in Chapter 5 and resulted in the revised transformational model presented in Chapter 6. This research asserts that the model can be used as a tool to support the development of a more detailed evaluation tools for tGovernment implementation and adoption. Further, to allow practitioners to comprehend and analyse the complexity of the adoption process from the stakeholders' perspective.
- Most investment in ICT is to enable transformation in government, and this is where certain areas may require significant transformation in business culture. Successful initiatives where visionary leaders combine appropriate technology investments with business and organisation transformation are needed. A case in point, eWeek, for example, makes DM internal users more aware of the capabilities and constraints of their services, where the customer support team has established a more in depth knowledge of the issues facing their customers. Senior management became more committed to the transformation primitives and, more importantly, the DM image was enhanced as a professional eServices provider for citizens, businesses and foreign investors.

In achieving the aim for understanding and encouraging a move from eGovernment to tGovernment, the Online Week could be seen as a successful study to realize the 'Zero Visit'

strategy for DM. Motivating online usage of eServices should be seen as a continuous process not an occasional endeavour. However, this requires considerable effort and dedication from different stakeholders that goes beyond the responsibilities and capabilities of one single department within DM.

## **7.2 Statement of Contributions and Research Novelty**

The contributions made by this research could be addressed from different angles that were formulated in this thesis. The work presented in this thesis has made its novel contribution to the area of transformation in government organisations and the leaders' quest for public reform and seamless integration of services across government agencies and, hereby, has extended the boundaries of knowledge.

This research claims of novel contributions, both theoretically and practically, in the study of organisational change in government agencies and transformational government domain:

- In investigating different models and proposing a stage model (Figure 3.3), novelty in evaluating and identifying the 'eChasm' gap in the transitional domains. The strategic leadership challenges facing transformational government. Identifying those issues (e.g. cross collaboration, data consistency, stackholder's expectations, and marketing awareness).
- There is novelty in formulating a theoretical lens that acts as a guide for this empirical research (Figure 3.1) and in identifying a critical set of relevant theories for realising transformational government. In addition, mapping those emerged themes that pose future challenges for the Dubai Government in developing on-demand services as is summarised in Table 6.1. Considering the implementation and adoption of tGovernment, it allows government officials and practitioners to better analyse and explore the implementation aspects of tGovernment.
- A novel Taxonomy for tGovernment Barriers and Benefits. Although the literature indicated what these barriers of tGovernment might be and the benefits of their implementation, the contribution of this research has been to validate both barriers and

benefits through the analysis of empirical data derived from case organisations and then to propose a novel taxonomy. The findings confirmed some of these barriers and benefits identified in Chapter 2, and also derived new barriers and benefits as indicated in Chapter 6. Therefore, this research updated the classification presented in Chapter 2, and categorised barriers and benefits based on their contexts and level of importance for each analysed case organisation (Chapter 5).

- As presented in Table 6.1, these emerging themes in conjunction with the literature proposed present novelty in formulating an evaluation framework that can be of benefit to determine the existing stage model of government organisations based on the four-stage model proposed in this research. The role of visionary leader in overcoming those identified barriers (Figure 3.3).
- Identification of the importance of organisational challenges facing tGovernmentorganisations. So doing can lead to an improvement in analysis through enhancing the mechanism of decision makers allowing visionary leaders to reach the transformational stage. It can also assist practitioners in understanding organisational challenges facing public entities and systems.
- A new model for strategic leadership challenges in achieving ICT-enabled transformational government. This model provides government authorities, senior management and other stakeholders with a clear guideline when implementing tGovernment.
- Another novel contribution of this research has to do with the fact that it looks at an emerging economy/country and in so doing shows the characteristics of developing country for transformational government. Research into this area has uncovered no published studies related to transformational government studies, either in the region of the Middle East more generally or in Dubai, specifically.
- The transformational stage of the model is linked to the relevant theories that are needed to realise that mature stage, coined fully integrated stage, and provides an insight of the inter-relationship between infrastructural facilities and government agencies.

The key beneficiaries of these contributions are the decision makers and practitioners within government authorities and municipalities, and researchers within the academic community. All of these benefit from the research in this thesis as a guideline to better understand and to further analyse tGovernment implementation and adoption. In doing so, this research work significantly contributes to the body of knowledge and practice in the areas of transformational government by providing sufficient support to the decision makers in leading public reform and which in turn may transform the way government interacts with stakeholders.

The aim of the research undertaken and described in this thesis has explored the strategic leadership challenges in the implementation process of ICT-enabled Transformational Government. In doing so, it has resulting in the development of a framework reference model supported by theoretical principles underlying stages maturity models that help to assist senior management of government authorities in their strategic decision-making process for the critical transition from eGovernment to tGovernment.

### **7.3 Research Limitations**

The theoretical and empirical data collected are confined to the limited context of government in Dubai within the UAE. The structure of government authorities varies in different parts of the world as there are different types of governments in the world. Moreover, the organisational structure, nature and size of each government agency also varies within the same country and, in this case, from one Emirate to another (the UAE comprises seven Emirates). The results are therefore not generalizable to other parts of the Arab world and/or to other countries worldwide. Further, there is another element of bias from those leaders who were willing to share their success stories in the selected case organisations. They may have, for whatever reason, focused on strong leadership in overcoming those identified challenges for realising transformational government, that is, an over-emphasis on their own role in the success stories in light of overcoming those challenges in achieving transformational government. Trends in the use of three case studies, as used here, can be identified

(Walshman, 1995) but it is acknowledged that a limitation of the qualitative research method is that it is difficult to generalise from case studies.

Qualitative methods for collecting the data for this study were used. However, despite the advantages that qualitative research provides, this method does have disadvantages as well. The amount of data collected in three case organisations was more contextual. This made the interpretation difficult and there is always the matter of bias on the part of the person looking at the data and/or interpreting it in a different way than that intended by the person or people who provided the data. Qualitative research is also criticised for its inability to make a full scientific link between theory and research. Considering the nature of some government organisations, some interviewees in one organisation were reluctant to give access to information such as documents representing aspect of analysis processes, which was due to confidentiality reasons.

#### **7.4 Recommendations for Future Research**

Overall, this discussion raises some important conceptual and theoretical issues for future consideration in conducting research in government organisations. Much remains to be done in refining and repositioning our understanding of transformational government and the strategic role of leadership in bridging the ‘eChasm’ gap, to address the transition from eGovernment domain to tGovernment domain. This thesis has shed some light on what some public leaders are able to achieve in managing such complex phenomena. Effective leadership in the context of tGovernment certainly merits further exploration and research, as it is a critical key factor in the advancement of public reform and transformation.

The research findings described in this thesis indicate that tGovernment implementation is complex and multidimensional in nature given that it involves the function of financial, technical, and human resources. Government agencies and municipalities implementing new or significantly expanded eGovernment platforms must realise the importance of making sustained human capital investments. In other words, government leaders that view tGovernment related ICT staff as part-time support consultants -- individuals brought in primarily at the development and implementation phases or individuals who are tapped only periodically -- are not likely to have comprehensive and fully dynamic tGovernment

applications. Internet technology is rapidly evolving and changing (Web 2.0 is an example of current development in this regard), and thus keeping pace requires a commitment to maintaining full-time staff who, in contrast to part time staff, are more capable of coping with such dynamic change.

Political support is another critical determinant of tGovernment implementation. Visionary leaders who think strategically would be able to gain enough momentum to bridge the 'eChasm'. This is consistent with Carrizales' (2008) study of municipal managers who found that if a municipal manager held a positive view of eGovernment, then that municipality was more likely to have an advanced eGovernment platform, hence leading to transformation. The empirical research presented in this thesis, although it is validated the proposed conceptual model, has its own specific context; as a result this research can be further developed to cover other contexts. In the light of the reflections and the limitations, it is recommended that further work could usefully be pursued as follows.

The tGovernment model developed is based on three case organisations in Dubai. It could well be validated in other organisational structures within a similar culture or in other cultures with different characteristics to Dubai. It can also be said that government authorities in other cities within the UAE and other countries may as well be different in their operational activities. In addition, the type of community may as well be different. Validating this model in the context of different culture, regions and even countries is recommended.

It was noted that there are multiple internal and external stakeholders that indirectly or directly influenced the implementation of tGovernment in the case organisations. Another recommendation for the future study may be the detailed identification and analysis of additional internal and external stakeholder(s) that may influence tGovernment implementation and adoption on different stage lifecycle phases. Also, the interrelationship of factors influencing change with internal and/or external stakeholder(s), that is, which stakeholder(s) is/are related or not related to a specific factor (or a number of factors) with regard to different adoption lifecycle phases, as this may further enhance and support the decision makers in identifying different stakeholders and factors influencing tGovernment. Also, this is to deal with the security issues at different stage levels. Examples include privacy, electronic authentication via digital signatures or certificates, and sharing of information across agency boundaries.



Although dynamic capabilities have received little attention in the literature on the stage model, they can help demonstrate that stage models reinforce the technological bias pushed by organisations due to path inter-dependencies. On the basis of dynamic capability theory, it is argued that an appropriate and timely development of the capabilities can improve transformation. In addition, a further analysis capability is essential for each of the stages. There are four groups of essential capabilities: stakeholder, technology, transformation, and service delivery. It is clear that each stage may require different types of capabilities, which is something that has not yet been examined.

It is important to gain top-level commitment in order to drive the required business transformation. This step is essential to verify that departments or agencies that have a share interest to play in a single customer-centric transaction so they can understand and modify the processes and information flows that best support the desired outcome. It is also necessary to reach a degree of technical convergence on how information is to be shared and how processes are to be integrated to achieve the desired outcomes for citizens and businesses.

Another important recommendation is to suggest more quantitative research to determine whether there is a correlation between maturity stages and organisation performance within and across agencies. There is also a need to, validate the revised model with more quantitative based research to assess stakeholders' interactions with a transformational government system as this will provide a broader view. Lastly, an important recommendation is to explore other emerging integration concepts to introduce flexibility in system design. The level of citizen and business orientation and sophistication increases with every stage of the maturity model, as does the level of flexibility. Flexibility is necessary, as on-demand-driven service delivery requires the creation of often a unique business processes crossing multiple organisations and departments. In addition, it would be worthwhile to look at different ways to overcome the discontinuity that takes place when moving from one stage to the next. Also, transformation and reengineering approaches, methods, and tools aimed at achieving joined-up government, as well as the corresponding need for external/internal resources should be further examined.

## 7.5 Conclusions

The fact that there are other factors maybe associated with the identified ‘eChasm’ gap in order to reach the transformational domain of eGovernment, other than those raised in this thesis, does not, however, invalidate their importance, or their significance. By reintroducing and refining the notions of ‘tGovernment’, though the examination of such a real case study, it is hoped that other government organisations around the world will undertake similar case research on ‘effective leadership’ such that comparisons may be drawn, and that this style of strategic visionary leadership be better conceptualised, better appreciated and understood to be incorporated in the evaluation process of transformational government. In addition, there may be political and legal hurdles that make it difficult to progress from one stage to the next. While the political and legal dimensions are interesting, they are outside the scope of this research. They should, however, be included in future research and may be part of future interdisciplinary research that focuses on joining-up from political, legal, organisational, and technical perspectives.

In this research it is found that growth stages are useful for providing guidance and could be used by policymakers to stimulate the developments of capabilities needed by organisations to migrate from one stage to another. The grey area known as the ‘eChasm’ identified by the research has established the distinct domain for eGovernment and tGovernment. Crossing this gap reaching the transformational domain, tGovernment is rapidly developing as an area of great research interest that is truly interdisciplinary in nature. This research has tried to put the strategic leadership at the centre of organisational challenges facing transformational government system into perspective. An interesting foundation pillars has been laid down to study the role of leadership in achieving ICT-enabled transformational government domain and concrete inferences to be drawn from such studies. Furthermore, strong leadership can enhance cross-agency cooperation and integration. The historical government organisation is vertically forced by traditional budgeting and funding mechanisms that rarely allow for cross-department or cross-agency resource requirements. All of these factors can also become major obstacles to the progress of transformation.

In conclusion, visionary leaders have the potential to address these complex issues associated with tGovernment and create significant benefits in working with citizens and businesses, with employees, and with other ministries and government agencies. However, tGovernment involves more than simply delivering services online. It involves transformation government around a citizen-focused model (i.e., one that is capable of meeting the complex pressures of

stakeholders, threats and opportunities of today's global environment). As such, it requires a much more holistic approach to modernisation as well as strong leadership with the skills and vision necessary to drive transformation throughout the organisation and beyond. The change from eGovernment to tGovernment requires a major shift in paradigm thinking and strategic direction. It requires a new style of leadership that will be able to foster this transformation and provide the appropriate management and ICT-enabled infrastructure to support that dynamic and critical change. Hence, tGovernment requires 'out-of-the box' system thinking approach, crossing the traditional boundaries of current departments and organisations.



## References

- Alawadhi, S. & Morris, A. (2009) Factors influencing the adoption of eGovernment services. *Journal of Software*, 4, 584-590.
- Aldrich, D., Berlot, J. C. & McClure, C. R. (2002) E-Government: initiatives, development, and issues. *Government Information Quarterly*, 19, 349-355.
- Altameem, T., Zairi, M. & Alshawi, S. (2006) Critical success factors of eGovernment: a proposed model for eGovernment implementation. *Innovations in Information Technology*, Nov, 1-5.
- Abdulla, M. M. (2007) A Conversation with Lieutenant General Dhahi Khalfan Tamim, Commander-in-Chief of the Dubai Police, United Arab Emirates. *Police Practice and Research*, 8, 79 - 91.
- Abie, H., Foyn, B., Bing, J., Blobel, B., Pharow, P., Delgado, J., Krnouskos, S., Pitkanen, O. & Tzovaras, D. (2004) The need for a digital rights management framework for the next generation of e-government services. *Electronic Government*, 1, 8-28.
- Accenture (2004) Egovernment leadership: high performance, maximum value. *The Government Executive Series*. Available at: <http://www.accenture.com>. (Accessed May 2008)
- Affisco, J. & Soliman, K. (2006) EGovernment: Strategic operations management framework for service delivery. *Business process management journal*, 12, 13-21.
- Agle, B. R., Nagarajan, N. J., Sonnenfeld, J. A. & Srinivasan, D. (2006) Does CEO charisma matter? An empirical analysis of the relationships among organizational performance, environmental uncertainty and top management teams perceptions of CEO charisma. *Academy of Management Journal*, 49, 161-174.
- Aichholzer, G. & Schmutzer, R. (2000) Organizational challenges to the development of electronic government. *In the Proceedings of the International Workshop on Database and Expert Systems Applications*, London, UK.
- Al-Kibsi, G., de Boer, K., Mourshed, M. & Rea, N. P. (2001) Putting citizens on-line, not in line. *The McKinsey Quarterly*, 2, 64-73.

- Allen, B. A., Juillet, L., Paquet, G. & Roy, J. (2001) E-Governance & government on-line in Canada: Partnerships, people & prospects. *Government Information Quarterly*, 18, 93-104.
- AlNaqi, M. (2004) Let's open our e-doors to the public. *e4All magazine*, April, 12-13.
- Andersen, K. V. & Henriksen, H. Z. (2006) EGovernment maturity models: Extension of the Layne and Lee model. *Government Information Quarterly*, 23, 236-248.
- Andersen, K. V. & Henriksen, H. Z. (2006) Reorganizing government: Bhutan visa online. *Proceedings of the 39th Hawaii International Conference on Systems Sciences*.
- Atallah, S. (2001) EGovernment: Considerations for Arab States. *United Nations Development Program*, New York.
- AuditCommission (2002) Message Beyond the Medium: Improving Local Government Services through EGovernment. *Audit Commission*, London.
- Avolio, B. J. (1999) *Full leadership development: Building the vital forces in organizations*. California, USA: Sage.
- AustralianGovernment (2005) *Australians' Use of and Satisfaction with EGovernment Services*. Barton: Commonwealth of Australia.
- Azad, B. & Faraj, S. (2008) Making eGovernment systems workable: Exploring the evolutions of frames. *Strategic Information Systems*, 17, 75-98.
- Azad, B. & Faraj, S. (2009) EGovernment Institutionalizing Practices of a Land Registration Mapping System. *Government Information Quarterly*, 26, 5-14.
- Baker, J. (1992) *Paradigms: The Business of Discovering the Future*. New York: Harper Business.
- Bala, H. & Venkatesh, V. (2007) Assimilation of interorganizational business process standards. *Information Systems Research*, 18, 340-362.
- Bass, C. & Lee, J. M. (2002) Building a Business Case for Eai. *EAI Journal*, 18-20.
- Bass, B. M. (1985) *Leadership and performance beyond expectations*. New York: Free Press.
- Basu, S. (2004) EGovernment and developing countries: An overview. *International Review of Law Computers*, 18, 109-132.
- Battilana, J., Gilmartin, M., Sengul, M., Pache, A. C. & Alexander, J. A. (2010) Leadership competencies for implementing planned organizational change. *The Leadership Quarterly*, 21, 422-438.

- Beaumaster, S. (2002) Local Government It Implementation Issues: A Challenge for Public Administration. *Proceedings of the 35th Annual Hawaii International Conference on System Sciences, IEEE Computer Society*, 1725-1734.
- Benbasat, I., Goldstein, D. & Mead, M. (1987) The case research strategy in studies of information systems. *MIS Quarterly*, 11, 368-386.
- Benington, J. (2000) The modernisation and improvement of government and public services. *Public Money and Management*, 20, 3-8.
- Bennis, W. G. & Nanus, B. (1985) *Leaders: the strategies for taking charge*. New York: Harper & Row.
- Berson & Avolio (2004) Transformational leadership and the dissemination of organizational goals: A case study of a telecommunication firm. *The Leadership Quarterly*, 15, 625-646.
- Bertot, J. C. & Jaeger, P. T. (2008) The Government paradox: Better customer service doesn't necessarily cost less. *Government Information Quarterly*, 25, 149-154.
- Beynon- Davies, P. (2005) Constructing electronic government: The case of the UK Inland Revenue. *International Journal of Information Management*, 25, 3-20.
- Beynon-Davies, P. & Martin, S. (2004) Electronic local government and the modernisation agenda: Progress and prospects for public service improvement. *Local government studies*, 30, 214-229.
- Beynon-Davies, P. & Williams, M. (2003) Evaluating electronic local government in the UK. *Journal of Information Technology*, 18, 137-149.
- Biggart, N. W. & Hamilton, G. G. (1987) An Institutional Theory of leadership. *The Journal of Applied Behavioral Science*, 23, 429-441
- Bingham, R. D. (1976) *The Adoption of Innovation by Local Government*. Lexington, KY: Lexington Books.
- Bleicher, J. (1980) *Contemporary Hermeneutics: Hermeneutics as Method, Philosophy and Critique*. Routledge & Kegan Paul, London and Boston.
- Boal, K. B. & Hooijberg, R. (2001) Strategic leadership research: Moving on. *Leadership Quarterly*, 11, 515-549.
- Bogdan, R. & Taylor, S. J. (1975) *Introduction to qualitative research methods*. New York: Wiley.
- Bogdan, R. C. & Biklen, S. K. (2003) *Qualitative research for education: An introduction to theory and methods*. Allyn and Bacon, London, UK.

- Bommer, W. H., Rich, G. A. & Rubin, R. S. (2005) Changing attitudes about change: Longitudinal effects of transformational leader behavior on employee cynicism about organizational change. *Journal of Organizational Behavior*, 26, 733–753.
- Bonoma, T. (1985) Case Research in Marketing: Opportunities, Problems and a Process. *Journal of Marketing Research*, 22, 199-208.
- Borras, J. (2011) Towards a transformational government framework. *tGov Workshop'11 (tGOV11)* Brunel University, London.
- Boyatzis, R. E. (1998) *Transforming qualitative information: Thematic analysis and code development*. Sage.
- Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.
- Bremser, W. G. & Chung, Q. B. (2005) A framework for performance measurement in the e-Business environment. *Electronic Commerce Research and Applications*, 4, 395-412.
- Bretschneider, S. (2003) Information technology, eGovernment, and institutional change. *Public Administration Review*, 63, 738-741.
- Brown, C. L. (2002) G-8 Collaborative Initiatives and the Digital Divide: Readiness for EGovernment. *Proceedings of the 35th Hawaii International Conference on Systems Sciences (HICSS'02)*.
- Brown, T. (2001) Modernisation or failure? IT development projects in the UK public sector. *Financial Accountability and Management*, 17, 363-381.
- Brown, M. E. & Gioia, D. A. (2002) Making things click: Distributive leadership in an online division of an offline organization. *The Leadership Quarterly*, 13, 397-419.
- Bryman, A. (1999) *Leadership in organizations*. In S. R. Clegg, C. Hardy, & W. R. Nord (Eds.). *Managing organizations: Current issues* London: Sage.
- Buchholz, R. A. & Rosenthal, S. B. (2005) Toward a contemporary conceptual framework for stakeholder theory. *Journal of Business Ethics*, 58, 13-148.
- Burn, J. & Robins, G. (2003) Moving towards eGovernment: A case study of organisational change processes. *Logistics Information Management*, 16, 25-35.
- CabinetOffice (2005) Connecting the UK: the Digital Strategy. Available at: [www.strategy.gov.uk/downloads/work\\_areas/digital\\_strategy/digital\\_strategy.pdf](http://www.strategy.gov.uk/downloads/work_areas/digital_strategy/digital_strategy.pdf). (Accessed May 2006).
- Cardoso, J., Bostrom, R. P. & Sheth, A. (2004) Workflow management systems and ERP systems: Differences, commonalities, and applications. *Information Technology and Management*, 5, 319-338.

- Chen, Y. C. & Gant, J. (2001) Transforming Local E-Government Services: The Use of Application Services Providers. *Government Information Quarterly*, 18, 343-355.
- Chowdhury, H. G., Habib, M. W. & Kushchu, I. (2006) Success and failure factors for eGovernment projects implementation in developing countries: A study on the perception of government officials of bangladesh. *Paper presented at the Proceedings of Euro mGov 2006: The Second European Conference on Mobile Government, Brighton, UK., Sep.*
- CabinetOffice (1999) Modernising Government (Cabinet Office). Available at: <http://www.cabinet-office.gov.uk/modergov/download/modgov.pdf>. (Accessed May 2005)
- CabinetOffice (2000) Electronic Government: A Strategic Framework for Public Services in the Infonation Age Services for the 21st Century. *Cabinet Office*, London, UK.
- CabinetOffice (2006) Annual Report. Available at: [http://www.cio.gov.uk/documents/annual\\_report2006/trans\\_gov2006.doc](http://www.cio.gov.uk/documents/annual_report2006/trans_gov2006.doc). (Accessed July 2008)
- CabinetOffice (2007) Transformational Government 2006 Annual Report.
- Caldow, J. (1999) The Quest for Electronic Government: A Defining Vision. *Institute of Electronic Government*, IBM Corporation, USA.
- Caldow, J. (2001) Seven EGovernment Leadership Milestones. *Institute for Electronic Government*, IBM Corporation, USA.
- Cannon, A. R. & Woszczyński, A. B. (2002) Crises and revolutions in information technology: Lessons learned from Y2K. *Industrial Management & Data Systems*, 102, 318-324.
- Carr, D. & Johansson, H. (1995) *Best Practices in Re-Engineering: What Works & What Doesn't in the Re-Engineering Process*. NY, McGraw-Hill.
- Carrizales, T. (2008) Critical factors in electronic democracy: A study of municipal managers. *Electronic Journal of e-Government*, 6, 23-30.
- Carroll, A. B. (1996) *Business & society: Ethics and stakeholder management*. 3rd Ed. Cincinnati: South-Western Publishing Co.
- Carter, L. & Belanger, F. (2003) The influence of perceived characteristics of innovating on eGovernment adoption. *Electronic Journal of eGovernment*, 2, 11-20.
- Cavalluzzo, K. S. & Ittner, C. D. (2004) Implementing performance measurement innovations: Evidence from government. *Accounting Organizations and Society*, 29, 243-267.



- Cavaye, A. L. M. (1996) Case study research: A multifaceted research approach for IS. *Information Systems Journal*, 6, 227–242.
- Chadwick, A. & May, C. (2003) Interaction between states and citizens in the age of the internet: EGovernment in the United States, Britain, and the European Union. *Governance*, 16, 271-300.
- Chamberlain, J. & Castleman, T. (2005) Moving personal tax online: The Australian Taxation Office's e-Tax initiative. *International Journal of Cases on Electronic Commerce*, 1, 54-70.
- Chatterjee, D., Grewal, R. & Sambamurthy, V. (2002) Shaping up for e-Commerce: institutional enablers of the organizational assimilation of web technologies. *MIS Quarterly*, 26, 65-89.
- Chiasson, M. W. & Davidson, E. (2005) Taking industry seriously in information systems research. *MIS Quarterly*, 29, 591-605.
- Chief Information Officer Council (2006) Cabinet Office Report. Available at: [http://www.cio.gov.uk/documents/annual\\_report2006/trans\\_gov2006.doc](http://www.cio.gov.uk/documents/annual_report2006/trans_gov2006.doc). (Accessed May 2007)
- Choudrie, J., Ghinea, G. & Weerakkody, V. (2004) Evaluating global eGovernment sites: A view using web diagnostic tools. *Electronic Journal of eGovernment* 2, 105-114.
- Clarkson, M. B. E. (1995) A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review*, 20, 92–117.
- Clarkson, M. (1998) (Ed.), *The corporation and its stakeholders: Classic and contemporary readings*. Toronto: University of Toronto Press, Toronto.
- Crossrail. (2006). About us, corporate website, Cross London Rail Links Limited, London, UK. Available at: <http://www.crossrail.co.uk/pages/aboutus48.html>, (Accessed July 2008).
- Currie, G., Lockett, A. & Suhomlinova, O. (2009) Leadership and institutional change in the public sector: The case of secondary Schools in England. *The Leadership Quarterly*, 20, 664-679.
- Currie, W. L. & Guah, M. W. (2007) Conflicting institutional logics: A national programme for information technology in the organizational field of healthcare. *Journal of Information Technology*, 22, 235-247.
- Currie, W. L. & Swanson, E. B. (2009) Special issue on institutional theory in information systems research: Contextualizing the IT artefact. *Journal of Information Technology*, 24, 283-285.
- Currie, W., Finnegan, D., Gozman, D. & Koshy, M. (2011) Transforming the English NHS Using Information Technology: The Story So Far. *tGov Workshop'11 (tGOV11) Brunel University, London*.

- Daniel, E. M. & Wilson, H. N. (2003) The Role of dynamic capabilities in e-Business transformation. *European Journal of Information Systems*, 12, 282–296
- Danziger, J. N. & Andersen, K. V. (2002) Impacts of IT on politics and the public sector: Methodological, epistemological, and substantive evidence from the golden age of transformation. *International Journal of Public Administration*, 25, 591-627.
- Davenport, T. H. (1993) Process innovation: Reengineering work through information technology. Boston: *Harvard Business School Press*, Boston, MA.
- Davidson, E. J. & Chismar, W. G. (2007) The interaction of institutionally triggered and technology-triggered social structure change: An investigation of computerized physician order entry. *MIS Quarterly*, 31, 739-758.
- Davison, R. M., Wagner, C. & Ma, L. C. K. (2005) From government to eGovernment: A transition model. *Information Technology and People*, 18, 280-299.
- Dawes, S. S. (2009) Governance in the digital age: A research and action framework for an uncertain future. *Government Information Quarterly*, 26, 257-264.
- DCITA (2000) Government Online-the Commonwealth Government's Strategy. The Australian Government Information Management Office, Canberra, Australia. Available at: [http://www.agimo.gov.au/archive/publications\\_noie/2000/04/govonline#Contents](http://www.agimo.gov.au/archive/publications_noie/2000/04/govonline#Contents) (Accessed April 2007).
- DeLone, W. H. & McLean, E. R. (2004) Measuring e-commerce success: Applying the Delone & Mclean information systems success model. *International Journal of Electronic Commerce*, 9, 31-47.
- Denhardt, R. B. & Denhardt, J. V. (1999) *Leadership for Change: Case Studies in American Local Government*. The PricewaterhouseCoopers Endowment for The Business of Government, Grant Report.
- Denzin, N. K. & Lincoln, Y. S. (1998) *The landscape of qualitative research: theories and issues*. Sage publications, London, UK.
- Denzin, N. Y. K. (1978) *The Research Act: A theoretical introduction to sociological methods*. McGraw Hill, New York, USA.
- Denzin, N. Y. K. & Lincoln, Y. (1994) *Handbook of qualitative research*. SAGE Publications, London, UK.
- Devadoss, P. R., Pan, S. L. & Huang, J. C. (2002) Structural analysis of eGovernment initiatives: A case study of Sco. *Decision Support Systems*, 34, 253-269.
- Dhillon, G. S., Weerakkody, V. & Dwivedi, Y. K. (2008) Realising transformational stage e-government: a UK local authority perspective. *Electronic Government, An International Journal*, 5, 162-180.

- Di Maio, A. (2006) Moving from eGovernment to government transformation. *Business Issues*, 1, 1-3.
- Dill, B. J. & Anderson, R. E. (2003) Ethics-related technology policies in schools. *Social Science Computer Review*, 21, 326-339.
- DiMaggio, P. & Powell, W. (1983) The iron cage revisited: Institutional isomorphism and collective rationality in organisational fields. *American Sociological Review*, 48, 147-160.
- Dyer, W. G., Wilkins, A. L. & Eisenhardt, K. M. (1991) Better stories, not better constructs, to generate better theory: The case for rigor and comparative logic. *Academy of Management Review*, 16, 613-627.
- Esteves, J. & Joseph, R. C. (2008) A comprehensive framework for the assessment of eGovernment projects. *Government Information Quarterly*, 25, 118-132.
- Ebbers, W. E. & van Dijk, J. A. G. M. (2007) Resistance and support to electronic government, building a model of innovation. *Government Information Quarterly*, 24, 554-575.
- Eisenhardt, K. M. (1989) Building theories from case study research. *Academy of Management Review*, 14, 532-550.
- EL-Haddadeh, R., Weerakkody, V., AL-Shafi, S. H. & Ali, M. (2010) EGovernment Implementation Challenges: A Case Study. *AMCIS 2010 Proceedings. Paper 312*. Available at: <http://aisel.aisnet.org/amcis2010/312>. (Accessed May 2011).
- Elmagarmid, A. K. & McIver, W. J. J. (2001) The ongoing march towards digital government. *Computer*, 34, 32-38
- Elnaghi, M., AlShawi, S. & Missi, F. (2007) A leadership model for eGovernment transformation. *Proceeding of European and Mediterranean Conference on Information Systems (EMCIS2007)*, Polytechnic University of Valencia, Spain.
- Elnaghi, M., AlShawi, S., Weerakkody, V., and Aziz, W. (2009). *Instigating transformational government at a municipality level: A case study*. Handbook of Research on ICT-Enabled Transformational Government: A Global Perspective'. IGI Global Publishing USA.
- EU (1999) E-europe: An information society for all. Communication on Commission initiative for the special European Council of Lisbon Commission of the European Communities, Brussels. COM/99/0687 final. 2002, Available at: [http://europa.eu.int/information\\_society/eeurope/news\\_library/pdf\\_files/initiative\\_en.pdf](http://europa.eu.int/information_society/eeurope/news_library/pdf_files/initiative_en.pdf). (Accessed Jan 2007).
- Evans, G. (2003) *Implementing eGovernment: An executive report for civil servants and their advisors*,. Gower Publishing Limited Hampshire, England.

- Evans, D. & Yen, D. C. (2005) EGovernment: An analysis for implementation: framework for understanding cultural and social impact. *Government Information Quarterly*, 22, 354-373.
- Fagan, M. (2006) Exploring city, county and state eGovernment initiatives: An East Texas perspective. *Business Process Management Journal*, 12, 101-112.
- Fahey, L., Srivastava, R., Sharon, J. S. & Smith, D. E. (2001) Linking e-Business and operating processes: The role of knowledge management. *IBM Systems Journal*, 40, 889-907.
- Fairholm, M. R. (2004) Different perspectives on the practice of leadership. *Public Administration Review*, 64, 577-590.
- Feeny, D. F. & Willcocks, L. P. (1998) Core IS capabilities for exploiting information technology. *Sloan Management Review*, 39, 9-21.
- Ferlie, E., Hartley, J. & Martin, S. (2003) Changing public service organizations: Current perspectives and future prospects. *British Journal of Management*, 14, 1-14.
- Finkelstein, S. & Hambrick, D. C. (1996) *Strategic leadership: Top executives and their effects on organizations*. St Paul, MN: West.
- Flick, U. (1998) *An introduction to qualitative research: Theory, method and applications*. SAGE Publications, London, UK.
- Fligstein, N. (1990) *The transformation of corporate control*. Cambridge, MA: Harvard University Press.
- Fountain, J. E. (2001) *Building the virtual state: Information technology and institutional change*. Brookings Institution Press, Washington, D.C.
- Freeman, R. E. (1984) *Strategic management: A stakeholder approach*. Marshfield, MA: Pitman.
- Gioia, D. A. & Thomas, J. G. (1996) Identity, image, and issue interpretation: Sensemaking during strategic change in academia. *Administrative Science Quarterly*, 41, 370-403.
- Goings, D., Young, D. & Hendry, S. (2003) Critical factors in the delivery of eGovernment services: Perceptions of technology executives. *Communications of the International Information Management Association*, 3, 1-14.
- Grimsley, M. & Meehan, A. (2007) E-Government information systems: Evaluation-led design for public value and client trust. *European Journal of Information Systems*, 16, 134-148.
- Galliers, D. R. & Land, F. F. (1987) Choosing an appropriate information systems research methodology. *Communications of the ACM*, 13, 900-902.

- Galliers, R. D. (1985) *In search of a paradigm for information systems research*. In E. Mumford, R. Hirschheim, G. Fitzgerald and T. Wood-Harper (Eds), *Research methods in information systems*, Amsterdam: North-Holland, 281-297.
- Galliers, R. D. (1992) *Choosing information systems research approaches*. In Galliers, R. D. (Ed.) *Information Systems Research: Issues, Methods and Practical Guidelines*. Oxford, Blackwell Scientific.
- Galliers, R. D. (1994) Information systems, operational research and business reengineering. *int.Trans.Opl. Res.*, 1, 159-167.
- Galliers, R. D. (1994) Points in understanding information systems research. *Systemist*, 16, 32-40.
- Galliers, R. D. (2004) Research notes: Trans-disciplinary research in information systems. *International Journal for Information Management*, 24, 99-106.
- Gandhi, S. & Cross, C. (2001) *EGovernment initiative at City of Orlando: Current trends and future directions*. Urisa, Long Beach, California.
- Ghasemzadeh, F. & Sahafi, L. (2003) E-Commerce adoption: A two dimensional maturity model. *4th World Congress on the Management of Electronic Business*. McMaster University, Hamilton, On., Canada, January 15-17.
- Ghauri, P. N. & Grønhaug, K. (2002) *Research methods in business studies: A practical guide*. Harlow, UK: Financial Times and Prentice Hall.
- Giddens, A. (1979) *Central problems in social theory: Action, structure and contradiction in social analysis*. Berkeley: University of California Press.
- Giddens, A. (1984) *The constitution of society*. Stanford California: Stanford University Press.
- Gilbert, D., Balestrini, P. & Littleboy, D. (2004) Barriers and benefits in the adoption of eGovernment. *The International Journal of Public Sector Management*, 17, 286-301.
- Gil-García, J. R. & Pardo, T. A. (2005) Egovernment success factors: Mapping practical tools to theoretical foundations. *Government Information Quarterly*, 22, 187-216.
- Gillen, D. (2000) *The leadership of learning: The core process of strategy implementation*. In P. Flood, T. Dromgoole, S. J. Carroll, & L. Gorman (Eds.), *Managing strategy implementation*. Oxford, UK: Blackwell, 138-151.
- Glaser, B. & Strauss, A. (1967) *The discovery of grounded theory – strategies for qualitative research*. Weindenfeld and Nicolson, London, UK.
- Gortmaker, J. & Janssen, M. (2004) Business process orchestration in eGovernment: A gap analysis. *Proceedings of the 15th International Resources Management Association (IRMA) International Conference*, New Orleans, LA, USA, 1-6.

- Gottschalk, P. (2009) Maturity levels for interoperability in digital government. *Government Information Quarterly*, 26, 75-81.
- Greenwood, R. & Hinings, C. R. (1993) Understanding strategic change: The contribution of archetypes. *Academy of Management Journal*, 36, 1052-1081.
- Greenwood, R., Oliver, C., Sahlin, K. & Suddaby, R. (2008) *The Sage Handbook of organisational institutionalism*. London: Sage.
- Greunz, M., Schopp, B. & Haes, J. (2001) Integrating eGovernment infrastructures through secure XML document containers. *In the Proceedings of 34th Hawaii International Conference on System Sciences*, Hawaii, USA.
- Guba, E. G. & Lincoln, Y. S. (1994) *Competing paradigms in qualitative research*. In N. K. Denzin and Y S. Lincoln (Eds.), *Handbook of qualitative research*. Thousand Oaks, CA: Sage.
- Guijarro, L. (2004) Analysis of the interoperability frameworks in eGovernment initiatives. In R. Traummüller, (Ed.), *Electronic government: Third international conference, Zaragoza, Spain, August 30-September 3, 2004. Proceedings (Vol. 3183, Lecture notes in computer science, pp. 36-39)*. New York, NY: Springer-Verlag Berlin Heidelberg.
- Gupta, M. P. & Jana, D. (2003) EGovernment evaluation: A framework and case study. *Government Information Quarterly*, 20, 365-387.
- Hakim, C. (1992) *Research design: Strategies and choices in the design of social research*. Routledge.
- Hambrick, D. & Mason, P. (1984) Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9, 193-216.
- Harrington, H. (1991) *Business process improvement: The breakthrough strategy for total quality*. Productivity & Competitiveness. New York, McGraw Hill.
- Haughton, M. A. (2006) Information technology projects by international logistics services providers: The case of Canada's small customs brokers. *Canadian Journal of Administrative Sciences*, 23, 17-33.
- Hayes, N. (2008) Institutionalizing Change in a High-Technology Optonics Company: The Role of Information and Communication Technologies. *Human Relations The Tavistock Institute*, SAGE Publications, London UK, 61, 243-269.
- Hazlett, S. A. & Hill, F. (2003) EGovernment: The realities of using IT to transform the public sector. *Managing Service Quality*, 13, 445-452.
- Heeks, R. & Bailur, S. (2007) Analysing eGovernment research: Perspectives, philosophies, theories, methods and practice. *Government Information Quarterly*, 24, 243-265.

- Heeks, R. & Stanforth, C. (2007) Understanding eGovernment projects trajectories from an actor-network perspectives. *European Journal of Information Systems*, 16, 165-177.
- Heeks, R. (1999) *Reinventing Government in the Information Age*. Routledge, London, 1999.
- Heeks, R. (2000) *Reinventing Government in the Information Age. International Practice in IT-enabled public sector reform*, In Heeks, R. (eds), Routledge, London, UK.
- Heeks, R. (2001) Understanding E-Governance for Development. *Institute for Development Policy and Management*, Manchester, UK.
- Heeks, R. (2005) EGovernment as a carrier of context. *Journal of Public Policy*, 25, 51-74.
- Herriot, R. E. & Firestone, W. A. (1983) Multi-site qualitative policy research: Optimising description and generalisability. *Educational Researcher*, 12, 14-19.
- Hirschheim, R. (1992) *Information Systems Epistemology: A Historical Perspective*. In R.D. Galliers (Ed.). *Information Systems Research: Issues, Methods and Practical Guidelines*. Blackwell Scientific Publications.
- Hirschheim, R., Klein, R. K. & Lyytinen, K. (1995) *Information Systems Development and Data Modelling: Conceptual and Philosophical Foundations*. Cambridge University Press, Cambridge, UK.
- HMSO (1999) *Modernising Government*. 4310, HMSO, London.
- Ho, A. T.-K. (2002) Reinventing local governments and the eGovernment initiative. *Public Administration Review* 62, 434 - 45.
- Hofstede, G (2003). Geert Hofstede™ Cultural Dimensions, Website, ITIM International, Stockholm, Sweden. Available at: [http://www.geert-hofstede.com/hofstede\\_dimensions.php](http://www.geert-hofstede.com/hofstede_dimensions.php), (Accessed July 2008).
- Holloway, I. & Todres, L. (2003) The status of method: Flexibility, consistency and coherence. *Qualitative Research*, 3, 345-57.
- Horst, M., Kuttschreuter, M. & Gutteling, J. (2007) Perceived usefulness, personal experiences, risk Perception and trust as determinants of adoption of eGovernment services in the Netherlands. *Computers in Human Behavior*, 23, 1838-1852.
- Horton, K. S. & Wood-Harper, T. A. (2006) The shaping of IT trajectories: Evidence from the UK public sector. *European Journal of Information Systems*, 15, 214-224.
- Howell, J. M. & Avolio, B. J. (1993) Transformational leadership, transactional leadership, locus of control and support for innovation: Key predictors of

- consolidated business unit performance. *Journal of Applied Psychology*, 78, 891-902.
- Heeks, R. (2003a) Causes of eGovernment success and failure: Factor model. *Institute for Development Policy and Management, University of Manchester*.
- Heeks, R. (2003b) Most e-Government for development projects fail: How can risks be reduced? *e-Government Working Paper Series, IDPM, University of Manchester, UK*.
- Hudson, J. (2001) Digitising the structures of Government: The UK's information age government agenda. *Policy & Politics*, 30, 515-531.
- Hu, H., Li, Q. & Lin, Z. (2003) From concept towards implementation: EGovernment in China. *In the Proceedings of Americas Conference on Information Systems, Tampa, Florida, USA*.
- Hu, P. J.-H., Cui, D. & Sherwood, A. C. (2006) Examining cross-agency collaborations in eGovernment initiatives. *Proceedings of the 39th Hawaii International Conference on System Sciences (HICSS'06)*.
- Huang, S.-M., Wang, K., Li, S.-H. & Chen, M.-C. (2006) Estimating web services reliability: A semantic approach. *International journal Information Systems and Change Management*, 1, 82-98.
- Huang, W., Ambra, J. & Bhalla, V. (2002) Key Factors Influencing the Adoption of E-Government in Australian Public Sectors. *In the Proceedings of Eighth Americas conference on Information Systems, Dallas, Texas, USA*.
- Huang, Z. (2007) A comprehensive analysis of U.S. counties' eGovernment portals: Development status and functionalities. *European Journal of Information Systems*, 16, 149-164.
- IBM (2005) Realizing the potential of government transformation. *IBM On Demand Operating Environment Executive Brief*.
- IPS (2008) Ips Online Passport Pre-Application Site. eGovernment website, UK Home Office: Identity and Passport Service (IPS). Available at: <https://www.ips.gov.uk/epa1r1a/about.aspx>. (Accessed May 2009)
- Irani, Z. & Elliman, T. (2007a) Electronic transformation of government in the UK: A research agenda. Project VIEGO: *The Virtual Institute for Electronic Government Research*.
- Irani, Z., Al-Sabie, M. & Elliman, T. (2006) Transaction stage of eGovernment systems: Identification of its location and importance', *Proceedings of the 39th Hawaii International Conference on System Sciences*. 1-9.
- Irani, Z., Elliman, T. & Jackson, P. (2007b) Electronic transformation of government in the U.K: A research agenda. *European Journal of Information Systems*, 16, 327-335.



- Irani, Z., Ezingeard, J. N., Grieve, R. J. & Race, P. (1999) Investment justification of information technology in manufacturing. *The International Journal of Computer Applications in Technology*, 12, 90-101.
- 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*, 17, 155-164.
- Irani, Z., Love, P. E. D. & Montazemi, A. (200c) EGovernment: Past, present and future. *European Journal of Information Systems*, 16, 103-105.
- Irani, Z., Sahraoui, S., Ozkan, S., Ghoneim, A. & Elliman, T. (2007d) T-Government for benefit realisation. *Proceedings of European and Mediterranean Conference on Information Systems (EMCIS2007) Spain*.
- Irani, Z., Sharif, A. M. & Love, P. E. D. (2005) Linking knowledge transformation to information systems evaluation. *European Journal of Information Systems*, 14, 213-228.
- Ituma, A. & Simpson, R. (2007) Moving beyond schein's typology: Individual career anchors in the context of Nigeria. *Personnel Review*, 36, 978-995.
- Ives, B. & Olson, M. (1984) User involvement and MIS success: A review of research. *Management Sciences*, 30, 586-603.
- Jackson, J. (2001) Prioritising customers and other stakeholders using AHP. *European Journal of Marketing*, 35, 858-871.
- Jackson, P. J. (1999) Organizational change and virtual teams: strategic and operational integration. *Information Systems Journal*, 9, 313-332.
- Jaeger, P. T. & Thompson, K. M. (2003) EGovernment around the world: Lessons, challenges, and future directions. *Government Information Quarterly*, 20, 389-394.
- James, G. (2000) Empowering Bureaucrats. *MC Technology Marketing Intelligence*, 20, 62-68.
- Janesick, V. (2000) *The Choreography of Qualitative Research Design*. In Handbook of Qualitative Research (Ed, Lincoln, Y. S.), SAGE Publications, Thousand Oaks, California, USA, 379-399.
- Jankowicz, A. D. (2000) *Business Research Project*. Business Press, London.
- Janssen, M. & Cresswell, A. (2005) Enterprise Architecture Integration in EGovernment. *Proceedings of the 38th Hawaii International Conference on System Sciences (HICCS'05)*.
- Janssen, M. & Shu, W. S. (2008) Transformational Government: Basics and Key Issues. *ACM International Conference Proceeding Series*, vol. 351.

- Janssen, M. & Van Veenstra, A. F. (2005) Stages of growth in eGovernment: An architectural approach. *Electronic Journal of eGovernment*, 3, 193–200.
- Janssen, M. & Wagenaar, R. (2003) Customer Relationship Management in EGovernment: A Dutch Survey. *Proceedings of the 3rd European Conference on EGovernment*, Trinity College, Dublin, Ireland, 227-238.
- Janssen, M. (2010) Governing and Integrating Public Service Networks. *tGov Workshop'10 (tGOV10)* Brunel University, London, UK.
- Janssen, M., Chun, S. A. & Gil-Garcia, J. R. (2009) Building the next generation of digital government infrastructures. *Government Information Quarterly*, 26, 233-237.
- Janssen, M., Joha, A. & Weerakkody, V. (2007) Shared service arrangements in the public sector: An exploratory study. *Transforming Government: People, Process and Policy*, 1, 271-284.
- Janssen, M., Kuk, G. & Wagenaar, R. W. (2008) A survey of web-based business models for eGovernment in the Netherlands. *Government Information Quarterly*, 25, 202–220.
- Jas, P. & Skelcher, C. (2005) Performance decline and turnaround in public organisations: A theoretical and empirical analysis. *British Journal of Management*, 16, 195-210.
- Javidan, M. & Waldman, D. A. (2003) Exploring charismatic leadership in the public sector: Measurement and consequences. *Public Administration Review*, 63, 229-242.
- Joia, L. (2004) Developing government-to-government enterprises in Brazil: A heuristic model drawn from multiple case studies. *International Journal of Information Management*, 24, 147-166.
- Johnson, O. A. & King, S. F. (2005) Best Practice in Local E-Government: A Process Modelling Approach. *e-Government Workshop (Egov05)*, 1-14.
- Khalifa, G., Irani, Z. & Baldwin, L. P. (2001) IT Evaluation in the public sector. *Proceedings of the 7th Americas Conference on Information Systems - AMCIS'01*, 1381-1387.
- Kable (2010) Life on the plateau. *Government computing magazine: Public Service Transformation Through Technology*, January, 24.
- Kakabadse, N. K., Kakabadse, A. & Kouzmin, A. (2003) Reviewing the knowledge management literature: Towards a taxonomy. *Journal of Knowledge Management*, 7, 75-91.
- Kamal, M. M. (2008) Investigating Enterprise Application Integration (Eai) Adoption in the Local Government Authorities (Lgas). *PhD Thesis, Department of Information Systems and Computing*, Brunel University, London, UK.

- Kamal, M., Weerakkody, V. & Irani, Z. (2011) Analyzing the role of stakeholders in the adoption of technology integration Solutions in UK local government: An exploratory study. *Government Information Quarterly*, 28, 200-210.
- Kanter, R. (1999) Change is everyone's job: managing the extended enterprise in a globally connected world. *Organisational Dynamics*, 28, 7-23.
- Kaplan, B. & Maxwell, J. A. (1994) *Qualitative Research Methods for Evaluating Computer Information Systems*. In Evaluating Health Care Information Systems: Methods and Applications (Ed, Jay, S. J.), SAGE Publications, Thousand Oaks, California, USA, 45-68.
- Kaylor, C. H. (2005) The next wave of eGovernment: The challenges of data architecture. *Bulletin of the American Society for Information Science and Technology*, 31, 18-22.
- Ke, W. & Wei, K. K. (2004) Successful eGovernment in Singapore. *Communications of the ACM*, 47, 95-99.
- Khalil, O. E. M. (2011) EGovernment readiness: Does national culture matter? *Government Information Quarterly*, 28, 388-399.
- Kim, C. & Galliers, R. D. (2004) Toward a diffusion model for internet systems. *Internet Research*, 14, 155-166.
- Kim, H., Pan, G. & Pan, S. (2007) Managing IT-enabled transformation in the public sector: A case study on eGovernment in South Korea. *Government Information Quarterly*, 24, 338-352.
- Klein, H. & Lyytinen, K. (1985) *The Poverty of Scientism in Information Systems*. In E. Mumford, R. Hirschheim, G. Fitzgerald & T. Wood-Harper (Eds), Research methods in information systems, Amsterdam: North-Holland, 131-161.
- Klein, K. & Myers, M. (1999) A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 23, 67-94.
- Klievink, B. & Janssen, M. (2009) Realizing joined-up government: Dynamic capabilities and stage models for transformation. *Government Information Quarterly*, 26, 275-284.
- Kock, N. F., McQueen, R. J. & Corner, J. L. (1997) The nature of data, information and knowledge exchanges in business processes: Implications for process improvement and organizational learning. *The Learning Organization: An International Journal*, 4, 70-80.
- Kouzes, J. M. & Posner, B. Z. (1987) *The leadership challenge: How to get extraordinary things done in organizations*. San Francisco: Jossey-Bass.
- Kraemer, K. & King, J. (2005) Information technology and administrative reform: Will eGovernment be different? *International Journal of Electronic Government Research*, 1, 1-18.

- Krathwohl, D. (1997) *Methods of Educational and Social Science Research: An Integrated Approach*. 2nd edition, Addison Wesley Longman.
- Kvale, S. (1983) The qualitative research interview: A phenomenological and a hermeneutical mode of understanding. *Journal of Phenomenological Psychology*, 14, 171-196.
- Lam, W. (2005) Barriers to eGovernment integration. *Journal of Enterprise Information Management*, 18, 511-530.
- Land, F. (1992) *The Management of Change: Guidelines for the Successful Implementation of Information Systems*. In A Brown (ed), 'Creating a Business-Based IT Strategy', Chapman & Hall (and UNICOM).
- Layder, D. (1998) *Sociological Practice: Linking Theory and Social Research*. London:Sage.
- Layne, K. & Lee, J. W. (2001) Developing fully functional eGovernment: A four stage model.*Government Information Quarterly*, 18, 122-136.
- Lee, A. S. (1991) Integrating positivist and interpretative approaches to organisational research.*Organisational Science*, 2, 342-365.
- Lee, H., Irani, Z., Osman, I. H., Balci, A., Ozkan, S. & Medeni, T. D. (2008) Toward a reference process model for citizen-oriented evaluation of eGovernment services. *Transforming Government: People, Process and Policy*, 2, 297-310.
- Lee, S., Tan, X. & Trimi, S. (2005) Current practices of leading eGovernment countries. *Communications of the ACM*, 48, 99-104.
- Leitner, C. (2003) Egovernment in Europe: The state of affairs. eGovernment 2003 Conference Como, ISBN 90-6779-182-2, Italy.
- Lenk, K. & Traummuller, R. (2002) Preface to the focus theme on eGovernment.*Electronic Markets*, 12, 145-147.
- 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. *MIS Quarterly*, 31, 1-30.
- Lincoln, Y. & Guba, E. (2000) *Paradigmatic Controversies, Contradictions, and Emerging Confluence*. In N. Denzin and Y. Lincoln (Eds.) 2nd edition, Handbook of Qualitative Research, Sage publications, 163-188.
- Lubbe, S. (2003) The development of a case study methodology in the information technology field: A step by step approach. *In the Ubiquity ACM*, 4, 55-70.
- McIvor, R., Humphreys, P. & Huang, G. (2000) Electronic commerce: re-engineering the buyer-supplier interface. *Business Process Management Journal*, 6, 122-138.

- McIvor, R., McHugh, M. & Cadden, C. (2002) Internet technologies supporting transparency in the public sector. *The International Journal of Public Sector Management*, 15, 170-187.
- Mark, A. L. (2007) Modernising healthcare – Is the npfit for purpose? *Journal of Information Technology*, 22, 248-256.
- Marshall, C. & Rossman, G. (1999) *Designing Qualitative Research*. SAGE Publications, London, UK.
- McClure, D. (2001) Electronic government; Federal initiative are evolving rapidly but they face significant challenges. *Accounting and Information Management Division, Washington DC, USA*.
- McGrath, J. E. (1984) *Groups: Interaction and Performance*, Englewood Cliffs, Nj: Prentice-Hall.
- Meyer, J. W. & Rowan, B. (1977) Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83, 340-363.
- Miles, M. B. & Huberman, A. M. (1994) *Qualitative Data Analysis: An Expanded Sourcebook*. Newbury Park, CA, USA: Sage Publications.
- Mintzberg, H. (1979) An emerging strategy of “direct” research. *Administrative Science Quarterly*, 24, 590-601.
- Miranda, S. M. & Kim, Y. M. (2006) Professional versus political contexts: Institutional mitigation and the transaction cost heuristic in information systems outsourcing *MIS Quarterly*, 30, 725-753.
- Mitra, R. K. & Gupta, M. P. (2007) Analysis of issues of eGovernment in Indian Police. *Electronic Government, An International Journal*, 4, 97-125.
- Montagna, J. M. (2005) A framework for the assessment and analysis of electronic government proposals. *Electronic Commerce Research and Applications*, 4, 204-219.
- Moon, M. J. & Norris, D. F. (2005) Does managerial orientation matter? The adoption of reinventing government and eGovernment at the municipal level. *Information Systems Journal*, 15, 43-60.
- Moon, M. J. (2002) The evolution of eGovernment among municipalities: Rhetoric or reality? *Public Administration Review*, 62, 424-433.
- Moore, G. A. (1999) *Crossing the Chasm*. Harper Business, New York.
- Moore, S. & Read, I. (2006) Collective organisation in small- and medium-sized enterprises-an application of mobilisation theory. *Human Resource Management Journal*, 16, 357-375.

- Morse, R. S. (2010) Integrative public leadership: Catalyzing collaboration to create public value. *The Leadership Quarterly* 21, 231-245.
- Murphy, J. (2005) Beyond EGovernment the World's Most Successful Technology-Enabled Transformations, Executive Summary. (MP Parliamentary Secretary Cabinet Office Report) INSEAD the business school for the world, Retrieved March 2006 from: [www.localgov.org.uk](http://www.localgov.org.uk)
- Myers, D. M. & Avison, D. (2002) *Qualitative Research in Information Systems*, London, SAGE Publications.
- Myers, M. D. (1997) Qualitative research in information systems. *MIS Quarterly*, 21, 241-242.
- NAO (2002) E-Revenue. The National Audit Office, London, UK.
- Nevo, S., Wade, M. R. & Cook, W. D. (2007) An examination of the trade-off between internal and external IT capabilities. *Journal of Strategic Information Systems*, 16, 5-23.
- Nissen, H. E. (1985) *Acquiring Knowledge of Information Systems-Research in Methodological Quagmire*. In E. Mumfird, R. Hirschheim, G. Fitzgerald, and T. Wood-Harper (Eds), *Research Methods in Information Systems*, North-Holland, New York, 36-52.
- Norris, D. & Moon, M. (2006) Advancing eGovernment at the grassroots: Tortoise or Hare? *Public Administration Review*, 65, 253-272.
- Nutt, P. C. & Backoff, R. W. (1997) Crafting vision. *Journal of Management Inquiry*, 6, 308-328.
- OECD (2003a) Check List for EGovernment Leaders. Organisation for Economic Cooperation and Development. Available at: [http://www.oecd.org/publications/pol\\_brief](http://www.oecd.org/publications/pol_brief). (Accessed Aug 2006).
- OECD (2003b) The EGovernment Imperative. The Organisation for Economic Cooperation and Development, USA.
- OECD-Forum (2006) Balancing Globalisation. Available at: [http://www.oecd.org/site/0,3407,en\\_21571361\\_35842076\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/site/0,3407,en_21571361_35842076_1_1_1_1_1,00.html). (Accessed July 2008)
- Ogbonna, E. & Harris, L. C. (1999) Leadership style, organizational culture and performance. *International Journal of Human Resource Management*, 11, 766-788.
- Orlikowski, W. & Baroudi, J. (1991) Research approaches and assumptions. *Information Systems Research*, 2, 1-28.
- Osborne, D. & Gaebler, T. (1992) *Reinventing Government*. Reading, MA: Addison Wesley.

- Park, R. & Campbell, A. (2001) E-commerce in financial services: an e-agenda for the corporate parent. *European Management Journal* 19, 417-423.
- Phillips, E. M. & Pugh, D. S. (1994) *How to Get a PhD: A Handbook for Students and Their Supervisors*. London, UK, Open University.
- Palanisamy, R. (2004) Issues and challenges in e-Governance planning. *Electronic Government: An International Journal*, 1, 253-272.
- Peters, T. & Waterman, R. (1982) *In Search of Excellence: Lessons from America's best-run companies*. Harper and Row, New York.
- Peppard, J. & Ward, J. (2004) Beyond strategic information systems: towards an IS capability. *Journal of Strategic Information Systems*, 13, 167-194.
- Phippen, A., Land, F. & Ward, A. (2006) Community Information Line - an Evaluation of Citizen Engagement in Local E-government. *eGovernment Workshop '06 (eGOV06)* Brunel University London
- Popper, K. (1963) *Conjectures and Refutations: The Growth of Scientific Knowledge*. Harper Row, New York.
- Powell, W. W. & DiMaggio, P. (1991) (Eds.) *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago Press.
- Purvis, R. L., Sambamurthy, V. & Zmud, R. W. (2001) The assimilation of knowledge platforms in organizations: An empirical investigation. *Organization Science*, 12, 117-135.
- Ramanath, A. M. (2000) The Role of Information Systems Development Methods in Inter-Organisation Systems Development. Department of Information Systems and Computing, Brunel University, London, UK.
- Rao, S. S., Metts, G. & Monge, C. A. M. (2003) Electronic commerce development in small and medium sized enterprises: A stage model and its implications. *Business Process Management*, 9, 11-32.
- Reffat, R. (2003) Developing a Successful E-government. *Working Paper, School of Architecture, Design Science and Planning, University of Sydney, Australia*.
- Reinwald, A. (2010) Organizing to Achieve EGovernment Maturity – A case Study in a Danish Local Government. *AMCIS 2010 Proceedings. Paper 273*. Retrieved from <http://aisel.aisnet.org/amcis2010/273>.
- Remenyi, D. & Williams, B. (1996) The nature of research: Qualitative or quantitative, narrative or pragmatic? *Journal of Information Systems*, 6, 131-146.
- Reynolds, M. & Regio, M. (2001) E-government as a catalyst in the information age. Available at: <http://www.netcaucus.org/books/egov2001/pdf/EGovIntr.pdf>. (Accessed June 2007)

- Ritchie, J. & Lewis, J. (2003) *Qualitative Research Practice: A Guide for Social Scientists*. London, Sage.
- Robey, D. & Boudreau, M. C. (1999) Accounting for the contradictory organizational consequences of information technology: Theoretical directions and methodological implications. *Information Systems Research*, 10, 167-185.
- Roethlisberger, F. J. (1977) The elusive phenomena. *Harvard Business Review*, Boston, Massachusetts, USA.
- Rogers, E. M. (1995) *Diffusion of Innovations*. 4th ed., The Free Press, New York, NY.
- Rouse, W. B. & Baba, M. L. (2006) Enterprise transformation. *Communications of the ACM*, 49, 62-72.
- Rudestam, K. E. & Newton, R. R. (1992) *Surviving Your Dissertation*. London, Sage.
- Ryan, G. W. & Bernard, H. R. (2000) *Data Management and Analysis Methods*. In Denzin, N.K. and Lincoln, Y.S., editors, *Handbook of qualitative research*, second edition. Sage.
- Sanchez, A., Koh, C., Kappelman, L. & Prybutok, V. (2003) The Relationship between It for Communication and EGovernment Barriers. *In the Proceedings of Ninth Americas Conference on Information Systems*, Tampa, Florida, USA.
- Sandelowski, M. (1995) Focus on qualitative methods - Sample size in qualitative research. *Research in Nursing & Health*, 18, 179-183.
- Saunders, M., Lewis, P. & Thornhill, A. (2002) *Research Methods for Business Students*. 3rd ed., Prentice Hall, London.
- Sawyer, S., Wigand, R. T. & Crowston, K. (2005) Redefining access: Uses and roles of information and communication technologies in the US residential real estate industry from 1995 to 2005. *Journal of Information Technology*, 20, 213-223.
- Sang, S., Jeong-Dong, L. E. E. & Jongsu, L. E. E. (2009) A study on the contribution factors and challenges to the implementation of eGovernment in Cambodia. *Journal of Software*, 4, 529.
- Sang, S. & Lee, J. D. (2009) A conceptual model of eGovernment acceptance in public sector *In Proceeding ICDS '09 Proceedings of the 2009 Third International Conference on Digital Society*.
- Scholl, H. J. (2003) E-Government: A special case of ICT-enabled business process change. *Proceedings of the 36th Annual Hawaii International Conference on System Sciences, HICSS, Washington DC, USA, IEEE Computer Society*, 136-147.



- Schwester, R. (2009) Examining the barriers to eGovernment adoption. *Electronic Journal of eGovernment*, 7, 113-122.
- Signore, O., Chesi, F. & Pallotti, M. (2005) E-Government: Challenges and opportunities. *CMG Italy - XIX Annual Conference, Florence, Italy*, June.
- Scholl, H. J. & Klischewski, R. (2007) EGovernment integration and interoperability: Framing the research agenda. *International Journal of Public Administration*, 30, 889-920.
- Scholl, H. J. (2003) EGovernment: A special case of ICT-enabled business process change. *Proceedings of the 36th Annual Hawaii International Conference on System Sciences, HICSS, Washington DC, USA, IEEE Computer Society*, 136-147.
- Scholl, H. J. (2005a) Egovernment-induced business process change (BPC): An empirical study of current practices. *International Journal of Electronic Government Research*, 1, 25-47.
- Scholl, H. J. (2005b) Motives, strategic approach, objectives & focal areas in e-Gov-induced change. *International Journal of Electronic Government Research*, 1, 59-78.
- Scholl, H. J. (2006) Electronic government: Information management capacity, organizational capabilities, and the sourcing mix. *Government Information Quarterly*, 23, 73-96.
- Schubert, P. & Häusler, U. (2001) EGovernment meets e-Business: A portal site for startup companies in Switzerland. *Proceedings of the 34th Hawaii International Conference on System Sciences*.
- Schuppan, T. (2009) EGovernment in developing countries: Experiences from Sub-Saharan Africa. *Government Information Quarterly*, 26, 118-127.
- Schutz, A. (1967) *The Phenomenology of the Social World*. Evanston, IL: Northwestern University Press.
- Schware, R. & Deane, A. (2003) Deploying eGovernment programs: The strategic importance of "I" Before "E". *Emerald Research*, 5, 10-19.
- Scott, W. R. (1987) The adolescence of institutional theory. *Administrative Science Quarterly*, 32, 493-511.
- Scott, W. R. (2001) *Institutions and Organizations*. 2nd edn, USA: Sage Publications.
- Scott, W. R. (2005) *Institutional Theory: Contributing to a Theoretical Research Programme*, In M.A. Hitt and K.G. Smith (Eds.) *Great Minds in Management: The Process of Theory Development*. Oxford: Oxford University Press.

- Seifert, J. & Peterson, R. E. (2002) The promise of all things E? Expectations and challenges of emergent electronic government. *Perspectives on Global Development and Technology*, 1, 193-212.
- Seiffert, M. E. B. & Loch, C. (2005) Systemic thinking in environmental management: Support for sustainable development. *Journal of Cleaner Production*, 13, 1197-1202.
- Senge, P. M. (1990) *The Fifth Discipline: The Art and Practice of the Learning Organization*. DoubleDay Currency, New York, NY.
- Senyucel, Z. (2005) Towards Successful EGovernment Facilitation in UK Local Authorities. *eGovernment Workshop '05 (Egov05)*, 1-16.
- Shang, S. & Seddon, P. B. (2002) Assessing and managing the benefits of enterprise systems: the business manager's perspective. *Information Systems Journal*, 12, 271-299.
- Shareef, M. A., Kumar, V., Kumar, U. & Dwivedi, Y. K. (2011) EGovernment adoption model (Gam): Differing service maturity levels. *Government Information Quarterly*, 28, 17-35.
- Sharif, A. M. & Irani, Z. (2006) Applying a fuzzy-morphological approach to complexity within management decision making. *Management Decision*, 44, 930-961.
- Shaw, E. (1999) Guide to the qualitative research process: Evidence from a small firm study. *Qualitative Market Research: An International Journal*, 2, 59-70.
- Siau, K. & Long, Y. (2005) Synthesizing eGovernment stage models-a meta-synthesis based on meta-ethnography approach. *Industrial Management & Data Systems*, 105, 443-458.
- Signore, O., Chesi, F. & Pallotti, M. (2005) E-Government: Challenges and Opportunities. *CMG Italy - XIX Annual Conference, Florence, Italy*.
- Singh, H., Das, A. & Joseph, D. (2007) Country-level determinants of eGovernment maturity. *Communications of the AIS*, 20, 632-648.
- Smithson, S. & Cornford, T. (1996) *Project Research in Information Systems: A Student's Guide*. Antony Rowe Ltd., Wiltshire, UK.
- Soares-Aguiar, A. & Palma-Dos-Reis, A. (2008) Why do firms adopt e-Procurement systems? Using logistic regression to empirically test a conceptual model. *IEEE Transactions on Engineering Management*, 55, 120-133.
- Stoltzfus, K. (2005) Motivations for implementing eGovernment: An investigation of the global phenomenon. *Proceedings of the 2005 National Conference on Digital Government Research ACM*, Atlanta, Georgia, 333-338.

- Struckman, C. K. & Yammarino, F. J. (2003) Managing through multiple change activities: A solution to the enigma of the 21st century. *Organizational Dynamics*, 32, 234–246.
- Themistocleous, M., Irani, Z. & Love, P. E. D. (2005) Developing e-Government integrated infrastructures: A case study. *Proceedings of the 38th Annual Hawaii International Conference on System Sciences, Big Island, Hawaii, IEEE*, 1-10.
- Tan, C. & Pan, S. (2003) Managing e-Transformation in the public sector: An eGovernment study of the Inland Revenue Authority of Singapore (IRAS). *European Journal of Information Systems*, 12, 269-281.
- Teo, H. H., Wei, K. K. & Benbasat, I. (2003) Predicting intention to adopt interorganizational linkages: An institutional perspective. *MIS Quarterly*, 27, 19-49.
- Themistocleous, M. & Irani, Z. (2001) Benchmarking the benefits and barriers of application integration. *Benchmarking: An International Journal*, 8, 317-331.
- Themistocleous, M., Irani, Z. & Kuljis, J. (2004) Extending the Information System Lifecycle through Enterprise Application Integration: A Case Study Experience. *Proceedings of the 37th Annual Hawaii International Conference on System Sciences (HICSS'04)*, Big Island, Hawaii, IEEE, 1-8.
- The World Bank (2004) Building Blocks of EGovernment: Lessons from Developing Countries. Number 91.
- Thornton, P. H. (2001) Personal versus market logic of control: A historically contingent theory of the risk of acquisition. *Organization Science*, 12, 294-311.
- Timonen & et al (2002) Implementing EGovernment in Ireland-Lessons Learned, Issues to Be Addressed. *Proceedings of Second European Conference on EGovernment*, St Catherine's College, Oxford, UK, 403-415.
- Tingling, P. & Parent, M. (2004) An exploration of enterprise technology selection and evaluation. *Journal of Strategic Information Systems*, 13, 329-354.
- Tolbert, C. J. & Mossberger, K. (2006) The effects of eGovernment on trust and confidence in government. *Public Administration Review*, 66, 354 -370.
- Tolbert, C. J., Mossberger, K. & McNeal, R. (2008) Institutions, policy innovation, and eGovernment in the American States. *Public Administration Review*, 16, 15-249.
- Traunmüller, R. & Wimmer, M. A. (2002) Integration: The Next Challenge in Egovernment. *Paper presented at the EurAsia-ICT 2002*, Shiraz, Iran, Oct 29-31.

- Trauth, E. M. & O'Connor, B. (1991) A Study of the Interaction between Informations, Technology and Society: An Illustration of Combined Qualitative Methods. In Nissen, H. E., Klien, H. K. & Hirschheim, R. (Eds.) *Information Systems Research: Cotemporary Approaches and Emergent Traditions*. (North Holland), Amsterdam, The Netherlands, Elsevier Science Publishers B. V.
- Turban, E., King, D., Lee, J., Warkentin, M. & Chung, H. (2002) *Electronic Commerce - a Managerial Perspective*. International Edition. New Jersey: Pearson Education.
- United Nations (2008) UnEGovernment Survey 2008: From Egovernment to Connected Governance. United Nations Economic & Social Affairs, NY. Available at:  
<http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN028607.pdf> (Accessed July 2009)
- Urwiler, R. & Frolick, M. N. (2008) The IT value hierarchy: Using Maslow's hierarchy of needs as a metaphor for gauging the maturity level of information technology use within competitive organizations. *Information Systems Management*, 25, 83-88.
- Van Horn, R. L. (1973) Empirical studies of management information systems, *Data Base*, 5, 172-180.
- Van Wart, M. (2003) Public-sector leadership theory: An assessment. *Public Administration Review*, 63, 214-228.
- Van, M. J. (1983) *Qualitative Methodology*. Sage, London.
- Vassilakis, C., Laskaridis, G., Lepouras, G., Rouvas, S. & Georgiadis, P. (2003) A framework for managing the lifecycle of transactional eGovernment services. *Telematics and Informatics*, 20 315-329.
- Venkatesh, V. & Davis, F. (2000) A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46, 186-204.
- Venkatesh, V., Morris, M., Davis, G. & Davis, F. (2003) User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27, 425-478.
- Waldman, D. A. & Yammarino, F. J. (1999) CEO Charismatic leadership: Levels of management and levels of analysis effect. *Academy of Management Review*, 24, 266-285.
- Walsham, G. (1993) *Interpreting Information Systems in Organisation*. Wiley, Chichester, UK.
- Walsham, G. (1995) Interpretive case studies in IS research: Nature and Method. *European Journal of Information Systems*, 4, 74-81.

- Walsham, G. (1995a) The emergence of interpretivism in IS research. *Information Systems Research*, 6, 376-394.
- Ward, M. A. & Mitchell, S. (2004) A comparison of the strategic priorities of public and private sector information resource management executives. *Government Information Quarterly*, 21, 284-304.
- Warkentin, M., Gefen, D., Pavlou, P. & Rose, G. (2002) Encouraging citizen adoption of eGovernment by building trust. *Electronic Markets*, 12, 157-62.
- Weerakkody, V. & Currie, W. (2003) Integrating business process re-engineering with information systems development: Issues & implications. *Lecture Notes in Computer Science*, 302-320.
- Weerakkody, V. & Dhillon, G. (2008) Moving from e-Government to t-Government: A study of process reengineering challenges in a UK local authority context. *International Journal of Electronic Government Research*, 4, 1-16.
- Weerakkody, V. & Hinton (1999) Exploiting information systems and technology through business process improvement. *Business Change and Re-engineering*, 6, 17-23
- Weerakkody, V., Baire, S. & Choudrie, J. (2006) EGovernment: The need for effective process management in the public sector. *Proceedings of the 39th Hawaii International Conference on System Sciences*.
- Weerakkody, V., Dwivedi, Y. K. & Irani, Z. (2009) The diffusion and use of institutional theory: A cross-disciplinary longitudinal literature survey. *Journal of Information Technology*, 24, 354-368.
- Weerakkody, V., Janssen, M. & Dwivedi, Y. K. (2011) Transformational change and business process reengineering (BPR): Lessons from the British and Dutch public sector. *Government Information Quarterly*, 28, 320-328.
- Weerakkody, V., Janssen, M. & Hjort-Madsen, K. (2007) Realising integrated eGovernment services: A European perspective. *Journal of Cases in Electronic Commerce*, Idea Group, 3, 14-38.
- West, D. M. (2001) E-government and the transformation of public sector service delivery. *Paper presented at the 2001 Annual Meeting of the American Political Science Association, San Francisco, CA*.
- West, D. (2004) EGovernment and the transformation of service delivery and citizen attitudes. *Public Administration Review*, 64, 15-27.
- Willcocks, L. (1994) Managing information systems in UK public administration: Issues and prospects. *Public Administration and Development*, 72, 13-25.
- Wimmer, M. & Traunmuller, R. (2000) Trends in electronic government: Managing distributed knowledge. *In the Proceedings of 11 the International Workshop on Database and Expert Systems Applications*, London, UK.

- Wimmer, M. A. & Tambouris, E. (2002) Online one-stop government: A working framework and requirements. *In the Proceedings of 17th World Computer Congress of IFIP*, Montreal, Canada.
- Wood-Harper, T. & Wood, B. (2005) Multiview as social informatics in action: Past, present and future. *Information Technology & People*, 18, 26-32.
- Wood-Harper, T., Ibrahim, O. & Ithnin, N. (2004) An interconnected success factor approach for service functional in Malaysian electronic government. *12th February, ICEC'04, Sixth International Conference on Electronic Commerce*.
- Yang, K. (2003) Neoinstitutionalism and eGovernment: Beyond Jane Fountain. *Social Science Computer Review*, 21, 432-442.
- Yin, R. K. (2009) *Case Study Research: Design and Methods*. 4th edition, Thousand Oaks, CA: Sage Publishing.
- Yin, R. K. (1994) *Case Study Research: Design and Methods*. 2nd edition, Thousand Oaks, CA: Sage Publishing.
- Yukl, G. (2008) How leaders influence organizational effectiveness. *The Leadership Quarterly*, 19, 708-722.
- Zairi, M. (1999) Managing excellence: Leadership. *The TQM Magazine*, 11, 215-220.
- Ziegenfuss, J. T., Munzenrider, R. F. & Lartin Drake, J. (1998) Organisation change in a University Hospital: A six year evaluation report of the horizons project. *Systemic Practice and Action Research*, 11, 575-597.



## Appendix A:

### SECTIONS

**Section A1:** Abbreviations of Key Terms and their Definitions

**Section A2:** eGovernment and tGovernment Definitions

**Section A3:** Sample of Marketing Publications

## Section A1: Abbreviations of Key Terms and Their Definitions

**OECD:** Organization for Economic Cooperation and Development

**eTransformation:** the process organisations undertake to move from old ways of carrying out process to new ways of conducting these activities.

**Globalization:** the “process by which the experience of everyday life ... is becoming standardized around the world.” (The Encyclopedia Britannica) While some scholars and observers of globalization stress convergence of patterns of production and consumption and a resulting homogenization of culture, others stress that globalization has the potential to take many diverse forms.

**Government:** a body that has the power to make, and the authority to enforce rules and laws within a civil, corporate, religious, academic, or other organisation or group.

**Key Performance Indicators (KPI):** financial and non-financial metrics used to help an organization define and measure progress toward organizational goals. KPIs are frequently used to “value” difficult to measure activities such as the benefits of leadership development, engagement, service, and satisfaction. KPIs are typically tied to an organization’s strategy.

**Pixman:** a marketing research tool using the latest technology and media promotion systems that depend on direct interaction with the targeted public. It consists of a wearable audiovisual unit with a flat-screen suspended above a brand ambassador’s head. (<http://www.pixman-usa.com/index.htm>).

**eGovernment:** is a term emerged in the late 1990s out of the Internet boom, but the use of computing technologies in government organizations can be traced back to the beginnings of computer history (Grönlund, 2004).

**eTransformation:** is the process organisations undertake to move from old ways of carrying out process to new ways of conducting these activities

**GIN:** The Government Information Network (GIN) is a local web, based on the most advanced technologies from Etisalat. It operates using two nets: the basic net (known as ATM) and a



second reservenet designed to operate automaticallyin case of any breakdown in the mainnet. The reserve net is called ISDN.GIN connects businesses to differentgovernmentdepartments and with thepublic at the same time, supplyingadvanced levels of speed and safety.All Dubai residents can connect withgovernment departments at a personalor commercial level. They can carryout official procedures without havingto personally walk into one of the governmentbuildings.

**eGovernment Portal:**An imaginative unified compound of governmental services and information onthe net. It has a unified scale and a safe, anti-hacking system.The portal is based on two concepts: eJawaz and ePay. The central interactiveinformation services make it easy to provide visitors with what they are seeking.A more precise scientific definition of the portal would be a starting point to contactother web locations. The portal's high level of organization is unique, in additionto the availability and inclusiveness of its services. A search engine makes iteasy to access.

**eCitizen and Digital Employee:**This is an advanced training package of program in different I.T. applicationsthat aims at fostering an understanding of eManagement. The program wasdesigned in association with internationalspecialized organizations, to empowerDubai government department employeesand individuals to utilise computer andInternet applications and make greater useof eGovernment services. The programme'ssyllabus and curriculum are supervised byDubai eGovernment and intended to providesuccessful candidates with an eCitizen oremployee international certificate.

**eJob:**A new service has been launched in line with the transformation toeGovernment. This service gives job seekers access to vacancies advertised bygovernment departments. Users simply fill in a C.V. form on the portal and thenthe information is automatically made available to the departments using the service.The candidate is contacted as he requested. This service aims at a speedy linkbetween departments and job seekers.

**DM eServices:**This is the unit within Dubai eGovernment that is responsible for developing innovative eServices to ease the lives of people and companies in Dubai. This unitis responsible for e-enabling current government services and making them availableonline so that users can reach them easily from the comfort of their chair.The unit also manages the eGovernment gateway <http://www.dubai.ae>, whichrepresents a complex for all eServices offered by Dubai Government, and worksclosely with all government departments on updating these services. The unit isalso responsible for setting quality and security standards

for offering services through the gateway, and promoting these services through community outreach programs.

**DM Shared Services:** This is the unit responsible for providing the infrastructure and applications necessary to integrate all the government departments through the Government Information Network (GIN), which links the government departments with each other and provides them with access to the Internet. The unit is also responsible for resource planning to achieve the highest return on investment. The Shared Services unit provides government departments with technical expertise to publish content on Dubai eGovernment portal through the Content Management System (CMS) hosted on the eGovernment server.

**Tejari.com:** Tejari.com is considered the first e-Marketplace in the region and is responsible for providing opportunities for commercial trade between companies and government organizations online, allowing both private and government sectors to achieve the highest returns by using their purchasing power. Through Tejari.com, suppliers and buyers can create their own direct channels for their products and services with a complete purchasing cycle that is totally automated and secure. Tejari also aims at enabling companies to access various markets freely, efficiently and quickly through offering delivery services. Dubai Ports Authority is considered a major partner to Tejari and plays a vital role as a link between Dubai and the rest of major ports around the world covering more than 100 maritime lines. Tejari is a fully owned and supported company by Dubai Government, and was established on June 20th, 2000.

## Section A2: Definitions of eGovernment and tGovernment

### *A2.1 A Critical Look at eGovernment and tGovernment Definitions*

The concept of 'eGovernment' is proven difficult to define where many scholars as well as development agencies<sup>25</sup> tried to conceptualise this new phenomenon in order to understand it, measure its maturity and capture its complexities. For example, (Grönlund and Horan, 2004) assert that the term eGovernment emerged in the late 1990s out of the Internet boom, but the use of computing technologies in government organisations can be traced back to the beginnings of computer history. (Hu et al., 2003) argue that the difficulty is associated with the fact that the eGovernment fields still an exploratory knowledge area and evolving field, and it encompasses a broad spectrum and affects many aspects of the government arena. Some scholars defined it as "the delivery of government information and services online via the Internet or other digital means", eGovernment or digital government has the potential to improve connections with citizens, businesses, and other governments (Fountain, 2001a, Thomas and Streib, 2003, West, 2004b). The eGovernment is now one of the fastest-growing activities online, where technology may also facilitate organisational change through the flattening of hierarchies, decentralisation, and the creation of new norms and practices (Tolbert et al., 2008). Recent research shows that the use of eGovernment can improve citizen confidence in government generally and, in some cases, can lead to more trust in government (Tolbert and Mossberger, 2006, Welch *et al.*, 2005). Other authors see eGovernment as the process of delivering information and services to customers (citizens, business, and public administration) electronically by the government (Lee et al., 2008). On the other hand, (Abie *et al.*, 2004) claim that eGovernment could be considered a powerful tool that can effectively manage and integrate the huge amount of existing information, as well as seamlessly integrating citizen interaction with its services. Whereas (Fletcher, 2004, Scott et al., 2004) give rather a simplistic view in their approach to address this phenomenon where they imply that the primary aim of eGovernment is to deliver the government's information and services online through the Internet or other digital means.

There are other authors (Aichholzer and Schmutzer, 2000) that appreciates different meanings of the eGovernment which are related to the varying priorities of the adopter and the adoption context; but basically in agreement that eGovernment stands for a comprehensive mode of using Information Communication Technology (ICT). Furthermore, (Beynon-Davies and

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<sup>25</sup> --eGovernment has been increasingly embraced by development agencies such as the United Nations Development Programme (UNDP) as well as the World Bank as a means towards achieving improved institutional performance, particularly in developing countries.

Williams, 2003) state that eGovernment is the government agencies use of Information communication technologies, including internet technologies, security techniques, and networks and communication infrastructures that have the ability to transform the effectiveness, security, and accountability of informational and transactional exchanges with in government and between citizens, businesses, industries and the whole society. These technologies, if correctly managed, should provide variety of tangible and intangible benefits such as improved communications with citizens, businesses, and industry, more efficient government management, less corruption, increased transparency, greater convenience, revenue growth, and cost reduction.

On the other hand, (Burn and Robins, 2003) have their managerial perspective of eGovernment, which is not just about electronic service delivery. They see it as it should provide the opportunities to evaluate and transform the management processes of government's organisation, completely rethink how government provide services in order to rebuild and link these services in a way that is tailored to citizen's need (see BPR in later section). (Bank, 2001, TheWorldBank, 2003), defines eGovernment as 'government owned or operated systems of ICT's that transform relations with citizens, the private sector and/or other government agencies so as to promote citizen empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government.' (Heeks, 2001) thinks of eGovernment as 'I-governance' (Integrated Governance) since it integrates people, processes, information, and technology in the service of achieving governance objectives. (Grönlund, 2002) reviews some of these definitions<sup>26</sup>and find that there are common three goals and objectives highlighted in them. These goals are: better services to citizens and businesses; more efficient government; and improved democratic processes. Finally, this phenomenon would be able to incorporate governance itself and change the way political and social power are organised and used.

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<sup>26</sup>-- Some define e-government more restrictively, focusing on stages two to seven, and making it the public sector equivalent of e-commerce. However, this research takes a broader approach to reflect the government perspective and the many benefits that can result from other ICT applications in the public sector. Major English dictionaries do not yet list "e-government", "digital government" or "electronic government."

## **Defining eGovernment**

World Bank defines eGovernment as follows: “*EGovernment refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government.*”

On the other hand, UNDP (United Nation Development Programme) define it as follows: “*EGovernment is the application of Information and Communication Technology (ICT) by government agencies.*” Meanwhile, a leading software vendor SAP has such a definition is quite unique, namely: “*EGovernment is a global reform movement to promote Internet use by government agencies and everyone who deals with them.*”

Whereas Caldw, Director of the Institute for Electronic Government (IBM Corporation) of the study along with the Kennedy School of Government, Harvard University, gave an interesting definition, as follows: “*Electronic government is nothing short of a fundamental transformation of government and governance at a scale we have not witnessed since the beginning of the industrial era.*”

## **Defining tGovernment**

The definition of Transformational Government used within the OASIS framework is as follows:

*“A managed process of ICT-enabled change in the government organisations, which puts the needs of citizens and business at the heart of that process and which achieves significant and transformational impacts on the efficiency and effectiveness of government.”*

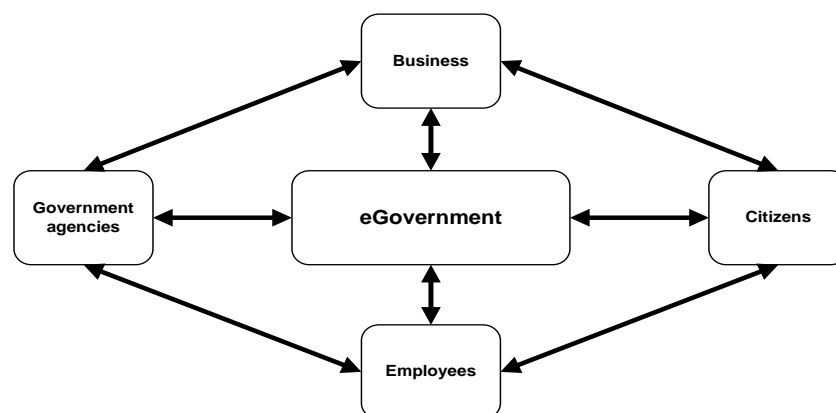
On the other hand, (Kamal et al., 2011) propose the following definition for t-Government:

*“t-Government is the ICT-enabled and organisation-led radical transformation of government operations, internal and external processes, structures and culture to enable the realisation of citizen-centric services that are transparent, cost effective and efficient.”*

## A2.2 ATaxonomy for Classifying Types of eGovernment Dimensions

One of the objectives of eGovernment initiatives is to improve the over all trust relationship between government and citizens by improving information flow, encouraging active participation of citizens in policy process, promoting transparency and accountability in government, and helping to prevent corruption (OECD, 2003b, Pascual, 2003). The concept of eGovernment innovations was classified and categorized in many ways, and according to (Poon and Wagner, 2001), eGovernment can be classified into five segments according to their application domains, which are: eDemocracy, eServices, eCommerce, eManagement, and eDecision-making. Other researchers have classified eGovernment according to the interaction between government and separate sectors. (Holmes, 2001) identifies three types of interaction. They are: Government to Citizen, Government to Business, and Government to Government. (Ndou, 2004) add a fourth one, which is Government to Employee.

- Government to Citizen (G2C): include putting public services online, in particular through the electronic service delivery.
- Government to Employee (G2E): Include initiatives that facilitating the management of the civil service and internal communication with governmental employees in order to make e-career applications and processing system paperless in e-Office.
- Government to Business (G2B): Include E-transactions initiatives such as e-procurement and the development of an electronic marketplace for government purchases.
- Government to Government (G2G): Include Inter-organisational workflow and exchange of data, exchanging policy and solution online, information and knowledge management.



**Figure A.1: eGovernment Stakeholders Interactions Model**

**Section A3: Sample of Marketing Publications**

Sample of Marketing Awareness Publications (e4all magazine):

These publications are part of initiatives to engage stakeholders and in particular citizens to participate in government decisions and be aware of latest available services. They are published on a monthly basis both in Arabic and English with a PDF file format available on Dubai Government website.





## Appendix B:

*Transformational Government  
(Dubai)  
United Arab Emirates*

### Introductory Statement

Thank you for taking part in this research. I am a researcher from the United Kingdom reading for a PhD degree investigating the transformational domain of eGovernment. In order to complete my task I require information and opinions from government officials in your organisations. The interview should not take more than 1 hour; please feel free to ask any questions, and discuss what you think is appropriate. Most of the questions are open ended and at the end of the session time is available, should you wish, where you can reflect on your general experience.

Please note that you have the freedom to withdraw at any time. Please also remember that I am not evaluating you as a person, I am documenting what organisations are initiating and implementing and how they are managing to cope with change introducing eGovernment and if there is any transformational dimensions to their activities.

Thank you for your time and effort.

Researcher Contact Details

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***This Questionnaire is being completed to capture the dynamic change in implementing Transformational Government***

The interview questionnaire is divided into 2 sections. The questionnaire aims to address the following sections:

**SECTIONS**

**Section B1:** General Interviewee Information.

**Section B2:** General Government Agency Information (Organisational Background) and Questions related to tGovernment Initiatives

**Section B1 – General Interviewee Information**

**B1.1** Interviewee’s Position and Contact Details.

**Telephone Number:**

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**E-mail address:**

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**B1.2** Interviewee’s Gender

- Female
- Male

**B1.3** Interviewee’s Position/Role

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## **Section B2 – General Government Agency Information (Organisational Background) and Transformation Initiatives Questions**

**B2.1** The structure of government organisations varies in different parts of Dubai, UAE. However, there are 3 different types of authorities in Dubai; these are divided into civilian, semi-civilian, and military; and two-tier government system as shown below. According to this structure, what is your status in the overall government hierarchy system?

- Organisation Type
  - Civilian
  - Semi-Civilian
  - Military
  
- Two-tier government
  - Federal Agency/Organisation
  - Local Government
  
- Other  Please specify \_\_\_\_\_

**B2.2** What is the population you serve in your community? (Approximately)

**B2.3** How many employees work in this government organisation? (Approximately)

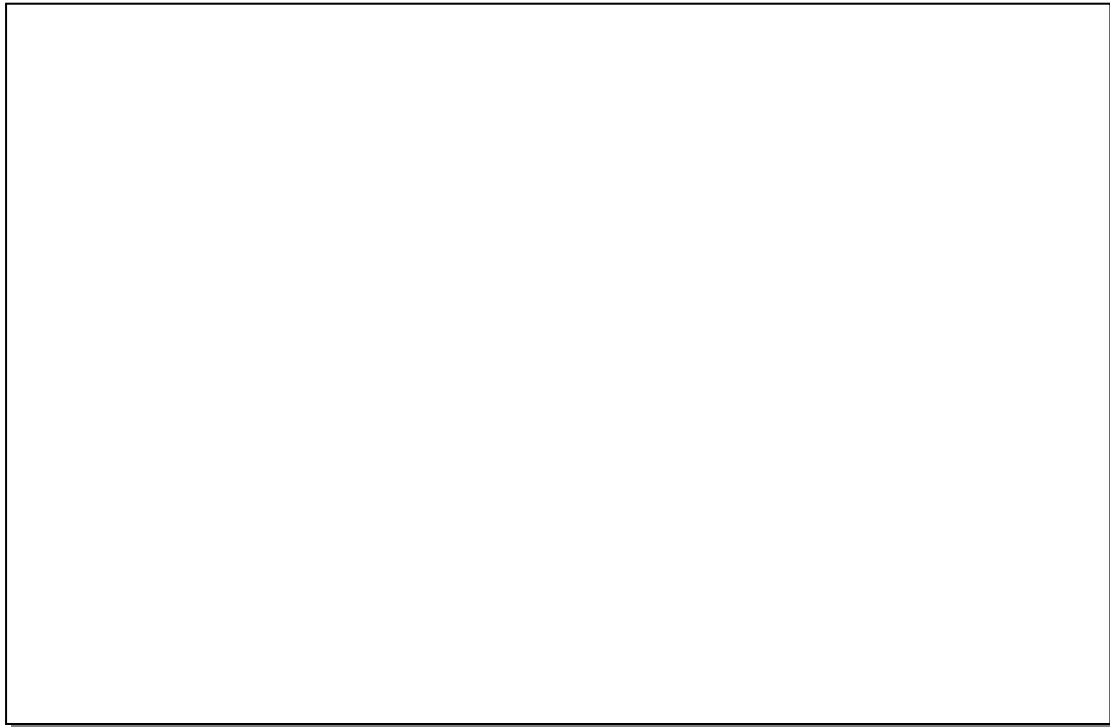
- Up to 50
- 51 – 500
- 501 – 1000
- 1000 – 5000
- 5000 or more

**B2.4** How many queries does your organisation receive on a daily basis? (Approximately)

**B2.5** How many queries (face-to-face) contacts does your organisation receive on a daily basis?

(Approximately)

**B2.6** Please draw the organisational chart of your department or provide a copy



**B2.7** Who initiated the concept of transformation in your organisation?

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**B2.8** What obstacles did you and your department encounter to modernise services?

Have you ever come across the need to integrate incompatible and heterogeneous systems?

- Yes       No

If yes, what were the challenges that made you integrate the systems?

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**B2.9** If you have come across the need for integration of your systems, can you please describe the process towards integration?

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**B2.10** If you have come across the need for integration of your systems with another agency or organisation, can you please describe this integration initiative?

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**B2.11** What do you think about the following limitations in IT Infrastructure?

- **Systems Failures:**

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- **Organisational Information Sharing and IS Integration:**

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• **Citizen Data Security and Privacy Issues:**

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• **Business Process Reengineering (BPR) in eGovernment Projects:**

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• **Front-Office/Back-Office Operations and Functioning:**

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• **Financial Issues in Implementing Integrated eGovernment:**

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• **Supporting Management and Decision Making Process:**

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**B2.12** It has been reported in the literature that some government departments lag behind in adopting technological solutions e.g. Did you face any kind of problem(s)?

- Yes                       No

If yes, then which factors do you think negatively affected by the process?

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**B2.13 ORGANISATIONAL ISSUES**

- In your opinion, has ‘managerial capability’ proved to influence your decision for any implementation? Please explain:

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- In your opinion, has ‘centralisation’ has an influential role in your decision for providing integrated services?

- Yes                       No

If yes, please explain:

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- What other benefits do you think your transformational services will offer?

| <b>Benefits</b> |  | <b>Moderate</b> | <b>More Important</b> |
|-----------------|--|-----------------|-----------------------|
| Other:          |  |                 |                       |
| Other:          |  |                 |                       |
| Other:          |  |                 |                       |
| Other:          |  |                 |                       |

- What other barriers do you think your transformational services will offer?

| <b>Barriers</b> |  | <b>Moderate</b> | <b>More Important</b> |
|-----------------|--|-----------------|-----------------------|
| Other:          |  |                 |                       |
| Other:          |  |                 |                       |
| Other:          |  |                 |                       |
| Other:          |  |                 |                       |



**B2.14** When did your agency start its electronic government initiatives?

|       |      |
|-------|------|
| Month | Year |
|-------|------|

*Please provide more details if the above headings are inadequate*

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**B2.15** How would you best describe your government activities?

*Please describe in words what is your main activities*

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**B2.16.** How many sites or facilities does the agency have?

*Please specify as many as you can*

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**B2.17.** Does your agency have a mission statement?

**No**

**Yes (please attach a copy if possible)**  **Not sure**

**B2.18. What do you see as the main constraints or problems limiting integrated services?**

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**B2.19. What are the opportunities and benefits do you see for integrated services?**

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**B2.20. What do you see as the main driver for transformation in your organisation?**

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