Exploring the role of a government authority in managing transformation in service reengineering – Experiences from Dubai police

Elnaghi, M., Alshawi, S. N., Kamal, M. M., Weerakkody, V. & Irani, Z.

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Exploring the Role of a Government Authority in Managing Transformation in Service Re-Engineering – Experiences from Dubai Police

Abstract

E-Government adoption and implementation has gained noticeable momentum across many developed and developing economies. Nevertheless, transitioning from the "electronic" to the stage of "transformational" domain – coined as t-Government – is posing the greatest challenge of how government services respond to changes in the broader economy and society. Despite considerable investments and the wide use of Information and Communications Technology (ICT), research literature on e-Government suggests that government services have yet to reach the full potential of seamless integration, where all transactions are completed electronically. Through a detailed analysis of the extant e-Government literature and a case study based empirical research, this paper explores the domain of e-Government in identifying the possible reasons for this potential shortfall in achieving full integration. Furthermore, the paper intends to highlight an aspect of complexity surrounding crossing the integration gap as the authors denote by "eChasm" in the e-Government conceptual model that leads to transformation. In addition, it focuses on radical change through Business Process Re-engineering (BPR) and the call for strategic style of leadership, for cross-agency collaboration leading to a successful realisation of transformational government (t-Government). It is interesting to note that researchers and public sector leaders have started to realise that implementing and managing the transformation of public services, copiously satisfying the users and stakeholders, is a task of multi-dimensional complexity.

Keywords: e-Government; t-Government; Maturity model; eChasm; Strategic leadership; Organisational change; Business Process Re-engineering

1. Introduction

The phenomenon of e-Government coupled with the transformational domain has received much attention over the last two decades from researchers, practitioners, and government officials alike. This endeavour pursuit has led to the development of different theoretical and conceptual models to understand the evolution process of e-Government and capture its complexity (e.g. Dawes et al., 2004; Gupta & Jana, 2003; Gil-García & Pardo, 2005; Osman et al., 2014; Kolsaker & Lee-Kelley, 2008; Layne & Lee, 2001; Moon, 2002; Sandoval-Almazan & Gil-Garcia, 2012; Andrade & Joia, 2012; Joseph, 2013). As a result of this phenomenon, governments around the world have been affected to dramatically change their practices and processes by becoming more aggressive in the deployment of electronic services to their citizens and businesses. Since the 1990s, the public sector has undergone through a phase of a 'service revolution', where some governments are fundamentally changing the way they perform business internally and externally and in meeting those challenges for a digital future (Ke & Wei, 2004; Ongaro, 2004; Skelcher, 1992). Where recent empirical studies have identified the dynamics and complexities surrounding e-Government evolution that is taking place (Gil-Garcia & Martinez-Moyano, 2007) and added further to the confusion of what constitute e-Government and transformational government (t-Government). Furthermore, globalisation and the innovative internet based advancement of web technology changed the working environment of governments, thereby offering rich opportunities for governments to significantly improve the delivery of their services and to interact with citizens and businesses (Osman et al., 2014). This is by which stimulating economic development that will require government support and action for economic competitiveness to enable any given country to respond rapidly to the changing global marketplace. Throughout the 1990s this has gathered further momentum, as Woolridge (2002) asserts that we are probably in the midst of the most intensive program of change the public sector has ever seen. It should; however, also be recognised that e-Government is still about 'government' rather than about 'e' technology for it to reach its full benefit realisation and consequently reinvent government leading to transformational change (OECD, 2003, Heeks, 2000b, Bannister & Connolly, 2014). In line with the latter argument, Pedersen and Tjørnehøj (2017) advocate that e-Government initiatives have struggled in realising the transformational objectives as outlined in the e-Government maturity models and ambitious e-Government programs. Further research indicates that, e-Government initiatives have to some extent improved the public sector efficiency through incremental developments across the developed economies, but at large failed in realising the transformational changes including inconsistent orientation towards transformational government (Pedersen & Tjørnehøj; 2017; Mawela et al., 2017).

To achieve the previously mentioned, a strategic, dynamic and innovative leadership style is seen central to the debate for successful implementation of e-Government and eventually accomplishing seamless integration, i.e., the highest level of maturity. Therefore, providing a presence on the World Wide Web (WWW) is not enough whereby restricting the limit to the whole objective of e-Government. This issue has raised the argument further that e-Government is not just about creating portals. It is more about transforming the whole government into a complete entity where citizens and businesses seamlessly interact, participate in policy making and participatory budgeting, and with ease, with government agents and services (Schmidthuber et al., 2018; Bertot & Jaeger, 2008; Caldow, 2001). More importantly, the aim is to encourage change within government authorities by transforming their organisational practices, predominately to transform the organisational culture (Seitanidi, 2007). This organisational transformation is a mode of social change that involves a sharp and simultaneous shift in strategy, structure, process and distribution of organisational power (Shen, 2005). The authors argue that it is imperative to have a strong and dynamic senior management team with a strong visionary leadership that is capable of cross boundary collaboration and influence for a successful implementation of e-Government. Indeed, implementation obstacles preventing rapid progress in that direction are not merely technical. In fact, the technology side may prove the least difficult to address (Layne & Lee, 2001), whereas the organisational, legal, political and social aspects of cross agencies collaboration may prove to be much more of a challenge (Seitanidi & Crane, 2009).

This research is in line with the recent UK government strategy, as a developed country, in moving to the t-Government domain (CabinetOffice, 2007). For the purpose of this research, this paper critically analyses the model proposed by Layne & Lee (2001) that includes four phases of development to e-Government implementation (I to IV). Moreover, it fills an identified gap in the literature by taking an organisational change perspective on e-Government implementation that leads to transformation. As a result, this research aims to answer the following question:

RQ: What constitutes the domain of transformational government in the four stages of the maturity model proposed by Layne and Lee (2001), and what is required to achieve seamless integration throughout?

To respond to the above research question and further explore this challenging domain of transformation, this paper is structured as follows. The next section offers a literature review on the evolution process of e-Government with the research theme on leadership and transformational government. Then, coupling diffusion of innovation theory with leadership leads to formulating a modified e-Government maturity model. This is followed by an outline of the research approach adopted that was used in the case study in Dubai – this is thoroughly explained through a detailed research design illustrating all the sequential stages covered to complete this research. Thereafter, the literature and empirical findings are synthesized. Finally, the paper discusses the findings and presents conclusion; recognising limitations and recommending future research for transformational government.

2. Transformational Government and Leadership: A Literature Perspective

Literature indicates a surge in the growth of e-Government adoption and implementation research studies with several proposing e-Government maturity models. A recent review on e-Government research (Osman et al., 2014; Luk, 2009; Morse, 2010; Nograšek & Vintar, 2014) clearly demonstrates that issues such as leadership, radical organisational change, business process re-engineering for seamless integration, are not the focus of e-Government research leading to transformation. Where to a certain extent, literature on the implementation of e-Government systems and applications comprises predominately themes such as: information quality, efficiency and effectiveness, cost, and data quality improvement gains (Danziger & Andersen, 2002). Table 1 illustrates some of the key elements in migrating from e-Government to t-Government with a brief description. It shows that there are critical variables differentiating e-Government from t-Government and the consequent actions that are required for an effective migration process.

	e-Government	t-Government	Migration from e-Government to t-Government
Focus	Putting government services on line	Making the government transformational through IT	Transformational leadership
Citizen Involvement	Access and 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	_
IT Role	Enabling online delivery	Enabling the transformation of the business of government	Transformational IT
Smart Technologies	Digital Presence	Transforming public and government through faster ICT strategy	Harnessing Digital Innovation

Table 1: Differentiation of migration strategy: From e-Government and t-Government

 (Source: Adapted from Irani et al., 2007c)

2.1 Enactment Leadership Milestones for t-Government

The aforesaid context suggests that a strategic leadership which has specific characteristics is required in order to advance the agenda of t-Government development and implementation, thereby reaching the highest level of maturity for seamless service integration. Furthermore, this development should be signposted where it can encapsulate the whole aspect of e-Government. For this reason, Caldow (2001) proposed seven e-Government leadership milestones including integration, economic development, e-Democracy, e-Communities, intergovernmental, policy environment and next generation internet – all supporting in achieving competitive advantage. It can be further argued that leaders, who define e-Government in a narrow sense by simply moving services online, will miss larger opportunities which will determine competitive advantage in the long run. To demonstrate this, a broader grasp of e-Government strategy is needed for leaders to be able to position their government, citizens, businesses and communities at large for a sustainable strategic advantage. This further illustrates the main milestones and highlights the main areas of achievement with brief descriptions of each milestone for a successful implementation of e-Government. These seven milestones encapsulate what t-Government is all about and provide government leaders with a framework to conduct the transformation process and reach the highest level of e-Government maturity. The overall literature findings are summarised in Table 2 below.

Milestone	Area of Achievement	Brief Description
One Integra	Integration	• Process and technology integration through a single one-stop portal.
	6	• Government use of the Internet is vital.
Two	Economic Development	 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.
Three	e-Democracy	 The manifestation of e-democracy stretches across the spectrum of democratic process. It is needed to inform and engage citizens.
Four	e-Communities	 Government is intrinsic to communities in fundamental ways. Public health and safety, i-parks and recreation, elderly and youth services. Electronic technologies offer governments ample opportunities to enhance communities.
Five	Intergovernmental	 The intergovernmental phenomenon is a core ingredient of e-Government. At global level, quasi-governmental bodies are emerging to pool knowledge and resources. Higher performance would be achieved.
Six	Policy Environment	• Creating a new legal framework to cope with the digital age, such as digital signature, digital divide, and hacker's law.
Seven	Next Generation Internet	 This is the capstone of a competitive e-Government strategy. Where e-Government will be defined in tomorrow's environment to gain advantage.

 Table 2: Seven Leadership Milestones for Successful e-Government Implementation

 (Source: Adapted from Caldow, 1999)

As discussed earlier, the process of implementing an e-Government 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. Generally, the normative literature is in thorough agreement about the evolutionary process that e-Government passes through, and the complexity surrounding its implementation that leads to transformation (Affisco & Soliman, 2006, Bannister et al., 2005). It is worth noting that the work done to explain the transaction stage of an e-Government system, its location and importance is well documented and discussed (Osman et al., 2014). This empirical work provides an insight into the complexity surrounding the attainment of Phase IV, as it represents the biggest challenge to any government leader since it requires cross-boundary integration. Hence, it is the transition from phase III to phase IV that provides the biggest challenge of all for t-Government and calls for a different type and style of leadership. Consequently, this is the critical stage where leadership will have to adopt innovative technological solutions and employ new techniques for cross boundary integration referred to as horizontal integration. In order to capture the dynamic transformation of government, the authors employ the theory of diffusion (Rogers, 1995) coupled with the e-Government stages of development in order to indicate the strategic style of leaders that are required for the final stage of seamless integration of e-Government.

The literature clearly indicates that the real value of e-Government lies in the ability to induce an agency to rethink, fully engage stakeholders, reorganise and streamline their service delivery before going online (Heeks & Bailur, 2007, Kaylor et al., 2001). It is all too easy to build a website without actually improving service (Al-Kibsi et al., 2001). This is resonant of Hammer's (1990) 'Business Process Re-engineering' which is developed over a decade ago, that the power of modern ICT should be used to radically redesign

business processes in order to achieve dramatic improvements in their performance (Hammer, 1990). Moreover, integration across functions and automation require a radical redesign of internal processes or process innovation (Davenport, 1993). BPR that is also known as Business Process Redesign (Davenport and Short, 1990), is a concept within the field of change management which to a large extent is undertaken by private industry as well as by government public services (Davenport, 1995, Willcocks, 1995). The basic distinction of change management methods is that between incremental and radical methods. The system of e-Government requires a holistic view of government as a holistic system organisation, its culture, sub-systems, processes and stakeholders, with its dynamic and long-term vision of the change process itself to be understood in its entirety. Change processes exhibit dynamic and unforeseeable patterns of behavior. Furthermore, for change to have a fundamental effect, comparatively long time lead must be assumed. The leadership needs to be capable of developing a vision for such dynamic and long-term processes, which must be done not only at the outset, but also throughout the entire organisational change. Therefore, the more fundamental and strategic the business process change, the less likely it can be planned in the traditional management sense (Hammer & Champy, 1993).

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 e-Government 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 BPR services around citizens and businesses rather than automating existing services should become the central focus of future efforts to make e-Government work (Cheng et al., 2009). The challenges of leadership in this digital age offer great promise and great opportunities. To be successful in e-Government implementation that leads to transformation, leaders must manage across networks and leverage partnerships and resources across organisational boundaries. The lack of authority is considered one of a major contributing barrier for a national level e-Government 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 e-Government leadership, since achieving transformation requires the mobilisation 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 e-Government implementation (Osman et al., 2014). Organisational innovation and change is known to be a complex phenomenon and that is not well understood in the context of government growth (Snyder et al., 2016; Criado, 2014; Hartley, 2010; Smith, 2000). Taking multiple perspectives on the problems of change – what drives it, what enables it, and what factors facilitate and hinder its success (Rouse & Baba, 2006).

2.2 Realisation of t-Government Complexities

The strategic thinking of implementing t-Government is still by far an institutionalised project led phenomenon. It can be appropriate to suggest that a trigger for changing this may be to adopt the view proposed (Yang, 2003), that to achieve the great transformation made possible, public administrators' strategic choice, initiative and entrepreneurship are necessary while public administrators must have conviction, be resilient and act strategically. Coordinating this virtual organisation composed of networked agencies requires trust among these agencies and demands strong leadership. Taking the above mentioned complexities into consideration, there is a new dimension to research in the digital divide and t-Government areas. For instance, Ke and Wei (2004) identified some of the issues that led to a successful e-Government strategy in Singapore. They emphasized matters such as a strong leadership with vision and the need for comprehensive strategic planning and implementation. Strong strategic leadership can speed up the process of t-Government implementation, promote coordination within and amongst agencies/departments and help reinforce good governance objectives. The domain of t-Government has

multiple dimensions is a complex issue. Each dimension demands a strong leadership, clear strategy, cross-coordination and know-how, all combined with a technology strategy to take the country's vision to reality. With goals to facilitate easier, less time-consuming, and more interactive engagement with government departments, and to make the business of government more effective and efficient through the use of technologies and ubiquitous ICT infrastructures, transformational government leaders are embarking on a wide range of t-Government initiatives. For instance, to stimulate the development of new services and creating environments more efficient in collaborative problem-solving, several developed economies/governments (e.g. US) are making use of digital assistants (often with cognitive services such as language translation support) – to interact and engage with community citizens. Moreover, the use of emerging technologies such as Artificial Intelligence (AI) and Internet of Things (IoT) are being deployed to facilitate the government divisions in forecasting the needs and envision issues to prepare and act accordingly (López-Quiles & Rodríguez Bolívar, 2018; Anthopoulos, 2017).

The following are a selection of the main reasons why there is a need for a visionary strategic leadership to lead the transformational process and this is because of:

- *Task is complex:* Awareness of new technology and trend, overcoming barriers, organisational change;
- *Transformation is high in cost:* Budget allocations, system development and management, infrastructure change, business process reengineering;
- *Requires a long term commitment:* Risk factors, change of technology;
- *The need for an understanding of the whole government strategy:* Formulating new strategy, awareness of cross boundary barriers and policies; and
- *Authority:* Such integration will facilitate a single one-stop portal for stakeholders. Each agency/department may have to give up some power to move to this stage.

The authors argue that a strategic visionary leader is required for successful implementation of transformational government and in moving from e-Government to t-Government. This is because t-Government is not a simple matter, as it involves significant business process re-engineering and governmental organisational change, long term planning and commitment, colossal financial investment, continuous training and professional development of personnel and strategic marketing efforts (both internally and externally) to create awareness. For this reason, leadership as it is commonly defined focuses on the accomplishment of the mission and goals of particular organisations. The performance of leaders in organisations is measured by the delivery of value products and services to meet the needs of its stakeholders. The aforementioned research challenges for e-Government where successful leaders of organisations have well developed '*vertical muscles*' but leaders who assume responsibility for crossboundary change initiatives need to exercise '*horizontal muscles*' (McDaniel, 2005).

Table 3 provides a suggested list of competencies that leaders should have acquired for a successful implementation of e-Government projects. This first generation of e-Government leaders implementing projects across sectors and levels are pioneers. They are tackling the big challenges of e-Government and assuming professional risks as they exercise their skills in cross-boundary leadership, while they create from their experiences a set of promising practices and policies for future generations of e-Government leaders. They must keep an eye on their organisation's mission and goals, manage the attitude and commitment of senior leaders of their own organisations, and select concrete evidence of the impact of inter-governmental activities and projects that can be communicated easily, quickly and powerfully to justify participation beyond their individual organisation's boundaries. In line with the latter, Scholl (2003) asserts that the active involvement and continued commitment of senior government leadership is indispensable to the success of any major electronic government project. The main objective is to adapt existing e-Governments to new computing requirements based on the citizens' new service concept of citizen-centric services (Bertot & Jaeger, 2008; Kolsaker & Lee-Kelley, 2006).

Competencies	Descriptions		
Setting New Directions			
Long-Term Policy	• Understanding the environment, principles, policies and foundations of t-		
	Government.		
Critical Thinking	 Applying systems thinking to complex t-Government challenges. 		
Long-Term Planning	 Planning and organising strategically for t-Government. 		
Innovative Change	• Transforming organisations and cultures to sustain t-Government.		
Transforming Processes and Resource Use			
Active Collaboration	 Collaborating across boundaries to achieve t-Government goals. 		
Architecture and Enterprise	• Understanding and applying effective architecture, BPR and systems for t-		
Integration	Government.		
Human Capital	• Using new models to extend human capital for t-Government.		
Financial Resources and	• Planning and managing fund resources strategically for t-Government.		
Investment Management			
Performance Management	 Managing performance-based t-Government programs and projects. 		
Execution/Implementation	Strategically moving from concept to reality.		
Using Information Strategically			
• Information and Knowledge	• Providing the right information and knowledge at the right time within and		
Resources	across boundaries.		
• Security and Privacy	• Balancing security, privacy, access issues and protection of information.		
• Emerging Technologies	• Understanding strategic use of information through the use of the latest technologies.		

 Table 3: Leadership Competencies Vital for Transformational Government (Source: McDaniel, 2005)

2.3 Innovation Leading to Transformation

The success of fully implementing t-Government requires a careful adoption and full understanding of the technology that is being applied. This view is supported in the diffusion of innovations theory where there is a gap or '*chasm*' that exists 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, exploring these differences and suggesting techniques to successfully cross the '*chasm*' (Moore, 1999). This research suggests that this could well be equally applied to government implementation and adoptions of technology in its quest for e-Government system development, and consequently, leading to transformational government. In order to reach the stage of full maturity (stage IV), or horizontal integration, a gap which the authors refer to as '*eChasm*' is closely related to the technology adoption lifecycle. In this, there are five main segments that can be recognised; *innovators, early adopters, early majority, late majority* and *laggards*. Therefore, it is emphasized that those visionary leaders who possess the quality of innovators and early adopters would be able to move successfully into the final stage of the e-Government maturity model (Elnaghi et al., 2007).

The following section briefly explains the importance of understanding the technology lifecycle, and how government leaders play an important and critical role alongside technology in making the move towards a complete transformation of e-Government. Figure 1 illustrates the proposed position of those leaders that will be able to cross the '*eChasm*' gap and advance in the domain of e-Government transformation. It further indicates that innovators are technology enthusiasts, whereas the early adopters are the visionaries.



Figure 1: Technology Adoption Lifecycle as applied to e-Government (*Adapted: Moore, 1999*)

It is proposed that these two groups of leaders, '*Innovators*' and '*Early Adopters*' (Pioneers) are the pioneers in moving the concept of e-Government forward. The authors further argue that it is the '*Innovators' and 'Early Adopters*' leaders that drive the e-Government agenda and progress successfully through the various stages of e-Government evolution. Those leaders who are innovators and early adopters will live up to the expectations of fully integrated services that citizens and businesses want from their government. Indeed, what has been brought into focus is that, at a time when one has just achieved great initial success in launching a new e-Government initiative, creating an early established presence, one must undertake an immense effort and radical transformation to make the transition into the final stage of e-Government and that is the seamless integration challenge.

3. Defining Transformational Government Boundary

The maturity model developed by Layne & Lee (2001) has been recurrently cited by various researchers and is one of a few examples of studies within e-Government where one can identify a linkage and value realisation (Andersen & Henriksen, 2006; Rose et al., 2003). The argument in this research begins with a description of the nature of e-Government and builds a case for a new kind of leadership that must emerge to meet the expectations and challenges of e-Government revolution. The competencies of these new kinds of leader are the foundation towards developing cross-boundary leaders to meet the challenges of t-Government, by which to reach horizontal integration, i.e. phase IV in the Layne & Lee model (2001). However, the transition from the vertical to the horizontal stage is not easy as it requires cross agency collaboration and a complex technological and organisational integrated platform (Kamal et al., 2011). To achieve a customer focused e-Government facility requires significant cross-coordination and '*joined-up*' government (Al-Kibsi et al., 2001). However, this presents something of an '*interesting quandary*' (Allen et al., 2001). Recent public sector reforms have focused on devolving responsibility and giving more autonomy to organisational units at local level; nevertheless, successful and seamless joined-up government such as that proposed by government reform requires significant central coordination. This is in effect re-centralising the decision-making process. Indeed, there are pressures to effectively coordinate

information platforms that have always been present in government but the wide use of internet intensifies that need to an extraordinary different level. Even though the answer might come from a variety of agencies and departments, citizens and businesses expect some reliability and consistency in the provision of government services (Charalabidis et al., 2018).

What will be required are new types of collaborative mechanisms and joined decision-making models in order to encourage administrative cultural change. This is without leaving the burden of integrating services to stakeholders. Although complex transformations require cross-disciplinary skills (Winter, 2002), the proposed gap that exists in the maturity model of transition from vertical to horizontal integration is what this paper refers to as the 'eChasm' of t-Government as shown in Figure 2. This indicates that the progression of e-Government integration is a matter of technological and organisational complexity. The term 'eChasm' can be thought of as the result of this new, large-scale computing age of reinventing government, with its highly complex dynamic development and implementation. The e-Government architecture became pervasive in this century, due to its significant growth in terms of huge volume transactions, and adding to its stakeholders' high expectations and perception of a high quality seamless integrated service, as well as sophisticated businesses (Wu, 2007). Technology use by governments is not new; however, putting an 'e' into government, to indicate electronic government, designates a major shift in this information digital age and the way citizens and businesses look at government and, more importantly, the way governments perceive themselves.



Figure 2: The e-Government Gap 'eChasm' in the Stages of t-Government Development in moving from Domain I to Domain II (*Adapted: Layne and Lee, 2001*)

During the last decade, there appears to be a major shift in government to be more citizen and business focused. This falls in line with e-Business concept to satisfy customers. There is a clear effort to reinvent government as smarter, faster and more effective will lead to a major transformation in the way government employees perceived their jobs and how they performed them. This will further call for a new style of leadership to take government truly into t-Government, hence, reaching the desired level of seamless horizontal integration. This paper therefore argues that '*e-Government crossing the eChasm leads to transformational government*.' That is to say, e-Government is an evolutionary phenomenon and that e-Government development, vertical integration across different levels within similar functionality is positioned to precede the horizontal integration across different functions. This is the case because the discrepancy between different services of government is larger than the discrepancy between levels of government where vertical integration will be attained first before horizontal integration (Layne & Lee, 2001; Osman et al., 2014).

Smarter technology adoption to move the e-Government into the highest level of integration as discussed earlier requires a wider understanding and awareness of the technology capabilities from government leaders. Progress on e-Government data integration is a matter of technological and organisational complexity. This is especially true in moving from stage III (vertical integration) to stage IV (horizontal integration). The existence of a gap in the long evolutionary process of e-Government indicates the high risk involved in crossing boundaries in the successful implementation of t-Government. This is to indicate that crossing boundaries or borders matters because they outline the authority, power, responsibility, funding and mission of an organisation.

4. Research Methodology

A suitable research methodology that acts a blue print for the research process was developed and utilised during this research. The research approach adopted for this study is qualitative in nature as the emphasis is on exploratory discovery and understanding. The advantages of using qualitative research are that it provides an in-depth insight, provides flexibility and the results obtained are rich with ideas (Creswell, 2003; Gable, 1994; Ruyter & Scholl, 1998). Taking into consideration the capacity, sensitivity and enormity of the research undertaken, the authors contemplate the interpretivist epistemological stance as appropriate. Thus, this empirical work followed an interpretive, qualitative single case study approach to conduct this research during the period (2006-2008) followed by an update visit in April 2012. An interpretive stance allows the researchers to navigate through the problem domain and better explain this phenomenon. The authors suggest that in the context of this research a qualitative approach is more appropriate as such an approach can be used to investigate new lesser known phenomena reminiscent of t-Government development, and hence, examine the phenomenon in its natural setting and to learn from real practice. Furthermore, case studies are useful in providing a multidimensional picture of a situation (Whitman & Woszczynski, 2004). To illustrate the implementation process, a qualitative research methodology can be split into three phases, which are namely, research design, data collection, data analysis and synthesis (as illustrated in Figure 3).

To understand the phenomenon under investigation, face-to-face semi-structured interviews were carried out to gather data, (Yin, 2003). All the interviews undertaken for this research 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 familiarise 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 e-Government, as it was considered important to interview senior staff involved in the strategic decision making in implementing e-Government. These were namely the Head of e-Government (HG), Technical Director (TD), Director of e-Services (DS) and Government Consultant (GC).



Figure 3: Research Design

This essentially meant that those interviewed provided senior managerial perspectives. Further to the faceto-face interviews, telephone and e-mail were used to clarify and probe more specific issues in some cases. The use of semi-structured interviews was judged most appropriate for exploratory research, because it allowed the researchers' understanding to increase incrementally throughout the series of interviews (Yin, 1994). The authors carefully ensured that the interviewees were fully informed about the purpose of the interviews and took steps to put the interviewees at ease so that a two-way, open communications climate existed. Shaughnessy & Zechmeister (1994) suggest that interviewer bias needs to be addressed when carrying out qualitative research of the described nature, which often results from the use of probes. These are follow-up questions that are typically used by interviewers to get respondents to elaborate on ambiguous or incomplete answers. Care was taken to reduce bias to a minimum through refraining as much as possible from asking leading questions. In trying to clarify the respondent's answers, complete care was taken not to introduce any ideas that may form part of the respondent's subsequent answer. Furthermore, the interviewer was also mindful of the feedback respondents gained from their verbal and non-verbal responses. The interviewer consequently avoided giving overt signals such as visible smiling and nodding sympathetically. After every interview, notes were given to each interviewee to check to resolve any discrepancies that may have arisen and eliminate any interviewer bias. This approach to interviewing has proved successful in a similar type of research (Osman et al., 2014; Janes, 2001).

The bias that is considered a danger in using a qualitative research approach is overcome in this research by data triangulation. In addition to the in-depth interviews, supplementary information was gathered from the Dubai Police website and through internal agency documentation, which were made available to the researchers. These documents were analysed for relevant themes in line with the focus of inquiry and research questions set out in the study. Wherever possible, observations of organisational processes and informal discussion with front line service staff were used as part of the research process. In doing so, it was possible to compare and contrast the interview findings with observation results and document reviews, thus, allowing validating and verifying the findings of the primary data with secondary information (Osman et al., 2014; Mingers, 2001; Saunders et al., 2002). This ensured that no bias emerged from either the participants or the researchers and ensured that the findings and the conclusion made from the case is valid (Yin, 2003). As pointed out by Saunders (2002), the use of multiple data collection methods makes triangulation possible and provides a stronger substation of theory. Although there is always difficulty associated with qualitative data analysis, as suggested by Miles & Hubennan (1994) the authors made use of content and thematic analysis to support their classification of the data, as well as to construct meaning from the data (Boyatzis, 1998).

4.1 Research Context

The Dubai government in the United Arab Emirates (UAE) was of interest because of its strategic location and its apparent commitment to developing e-Government 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 the first author working 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 e-Government to support and harmonise with local businesses.

4.2 Research Protocol

The prospective departments were initially contacted using general e-mail communication with customer services seeking basic information about Dubai Police early e-Government initiatives. The agency became interested in the research where 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 organisation of data collection, d) schedule the research process and e) format the documentation of analysis.

5. Dubai Police Strategy for t-Government

The literature reviewed earlier identified many challenges e.g. 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 is facing up to e-Government/t-Government implementation and adoption. Dubai is considered to be the first country in the gulf region to embark on such initiative and launch an e-Government portal in a short time scale. This is initiated prior to the formulation of the national e-Government strategy of the UAE. This initiative has the support of the federal government as well as the Ruler of Dubai who challenged those in his country to develop an e-lifestyle for citizens, visitors and businesses. 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 e-Government should be accompanied by an integrated approach to overcome the implementation problems in order to develop a successful e-Government (Reffat, 2003). Since the initial transformation efforts were launched more than a decade ago in Dubai, the country has made significant progress and is seen as a leader in digital government services in the region today. The Dubai Police department is seen as one of the most advanced in the GCC region of using digital services. By examining the journey of the police department's transformation efforts, this paper aims to draw vital lessons of transformation for other public services, particularly in the GCC region and more generally in the wider public sector context.

5.1 Strategic Internal Reform through Business Process Re-Engineering

This empirical study, as outlined earlier, was conducted as the result of the authors' observations and interactions with Dubai Police when requesting simple general information about their services and interactions with the private business sector. Within two weeks of this request, an invitation was received; one of the authors flew to Dubai to conduct interviews with executives at the Dubai Police Head Quarter. These executives were involved in implementing e-Government within Dubai Police agency. Dubai is one of the seven emirates forming the United Arab Emirates, includes community members based on more than 100 different nationalities living and working. This indicates that Dubai represents a diverse community with a need for the stability and security of the country to be catered for. Furthermore, the crucial role 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*'. In this context, the Dubai Police Chief stated:

"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."

Reaffirming what the ruler of Dubai is aiming to achieve; the aim is to recognise Dubai as a leading center in the new global economy. To accomplish this aim, there is a need to redefine and transform the entire understanding of the role of government, and it is suggested that this aspect of transformation will be personally led by the ruler of Dubai. 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 new paperless and automated environment finally became reality (AlNaqi, 2004). For the purpose of this research the authors looked upon the complete approach to internal change of processes and the strategic introduction of the paperless environment as a key initial stage in leading the way in e-Government 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 globalisation and the changing business environment, as private companies turn to Business Process Re-engineering (BPR), so will governments, involving significant investment in ICT. Peppard (1996) asserts that business process reengineering is 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 (Hammer & Champy, 1993, Davenport, 1995, 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). Recognising 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, the Paperless Department and the Electronic Traffic and Traffic Education Campaigns.

5.2 Challenges for Expanding Country and Changing Environment

With all the exciting changes that are taking place within the Dubai Police, the authors 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 e-Government 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 e-Government lies in the ability to force an agency to rethink, reorganise 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 e-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 customers and employees' access to self-service tools, businesses can cost effectively scale their customer 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, customisation and across organisational boundaries (Zhang & 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 e-Government (HG) in the Dubai Police 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 e-Government (HG) highlighted that their daily volume exceeds 700 cases with an average of 30 papers for each. 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 houses and cars. Integrator Emirates Computers used IeStreamWMS software imaging and workflow to successfully implement a paperless management solution for the Dubai Police that is considered to be the first and largest workflow enterprise for the region. These changes led the head of e-Government 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, stressing on the timely interactions with citizens and businesses. 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 e-Government services. This is well supported by the senior management."

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 Arab World. Hence, this is resulting in providing an efficient and effective citizens' centered quality service enabled by technology.

What Dubai Police is trying to achieve is aligning itself within the overall strategy of the UAE. Governments are taking many different paths to try to reach this point of transformational domain, i.e. the seamless integration. Some have slowly built more sophisticated transactional capabilities into their program. Others have regrouped and developed more focused action plans that target maximum value from every e-Government investment they make. The leaders reap the real value of government, not only through measurably improved customer 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.

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 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, e-Government 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 organisational change and aligning its organisational set-up with the new capacities it has acquired as 'digital state'. The different stages of e-Government 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 e-Government 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 e-Government to t-Government in bridging the '*eChasm*'. Dubai Government in general and Dubai Police in particular are well positioned, given time, to make that quantum leap change into transformational government. Finally, the quest to transform government is the aim of all governments around the world. 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 main challenge for governments is to identify user needs and to design e-Government projects according to the identified target users, as the case with Dubai Police. Considering the above context, the use of the modified model developed by Layne and Lee (2001) was helpful in identifying the factors that prevent or promote e-Government in the transformation process in the Dubai Police. The model captures the process of transformation and integration aspects and the scope needed for a one-stop e-Government service. The most complex stage is horizontal integration where different services and functions within the same level of government are integrated to provide a one-stop point for all major services. The growing political interest in t-Government has given this vision great hope. If the promise of t-Government as the key principal to modernising government services is to be kept, this concept requires the inclusion of the full potential of flexibility offered by ICT as well as the complex reality of government and public governance. Needless to say, government transformation is a complex process that involves technology, BPR, strategy formulation and organisational change. That is to confirm, it is an iterative and evolutionary/revolutionary process that takes place over a long period of time and fundamentally changes both organisation functions and outcomes. Therefore, throughout the complexity of this ongoing process of transformation, government senior leaders must reassess and adapt to changes in the available evolving technology, the competitive local environment as well as the internal structure and culture of the organisation to ensure an effective successful transformed implementation and adoption.

6. Conclusions

The authors in this paper offer detailed grounds for greater understanding of the technological and organisational issues surrounding what may influence the realisation of fully integrated e-Government services. This is accomplished through extensive review of the literature and thorough empirical research, reasserting that t-Government requires strong political visionary leadership. In order to achieve the e-Government transformation, elected and appointed officials at all levels of government must understand the use and implementation of innovative technologies and the associated policy goals and be motivated enough to push reforms and lead change forward. Navigating through the digital domain of e-Government requires strong leadership that can ensure the long-term commitment of resources and expertise as well as the cooperation of disparate cross-agency departments. Furthermore, it requires the appropriate implementation of BPR for an effective and efficient change of processes that might impact other agencies (e.g. in this case Dubai Transport Agency). Professionalism and strong visionary leadership can also articulate a unifying theme that can push the e-Government initiative through all the stages (I to IV) of development that will be necessary. For example, by declaring internet access a human right, the Dubai executive leadership created strong national support for the implementation of the various aforementioned initiatives, with the eventual goal of creating a completely new base for a diverse and dynamic economy and effective e-Government services (Bataineh et al., 2017). It is worth noting that further research is

needed as BPR is emerging as a primary ingredient in a framework of several approaches that are harmonising in the quest of public sector transformation and performance improvement.

In this research, the authors have the leadership position in the transformation process emphasizing e-Government as an evolutionary/revolutionary process. We advocate that a more reflective, innovative and critical use of ICT is desired. Rather than focus on the front end, the authors argue that the core processes and activities involved are a more prosperous road to follow. E-Government transformation is one of the biggest challenges from the perspective of scale and complexity (AlEnezi et al., 2018). Whilst this research has provided a foundation for the study of e-Government in the UAE gulf region, which is witnessing rapid development with one government agency on the way to government transformation, there is still much to be done for other agencies in Dubai. Indeed, the political and organisational aspects are more challenging areas than technology. Through the maturity of the vertical integration concept and provision of cross-organisation sharing, service and information have a better chance of coping with both the political and organisational issues and in eliminating technical integration complexity. Moreover, it can be argued that the transfer of public administrative processes from a largely manual state to an electronic enabled real-time automated state would involve some fundamental rethinking and radical redesign of processes at both local and national government levels. 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.

6.1 Key Lessons Learnt

The development of t-Government is an evolutionary/revolutionary process, while leaders must ensure that it continually improves services through internal processes and efficiently responds to external demands, hence the need for wider choices in accessing government services with more open and transparent government decision making. E-Government's role is not only to have qualified e-employees, it is, rather, required to change the whole society and to train people how to use e-services and how to deal with related advanced technologies. This empirical research draws on similar findings of conclusions that outline some of the lessons learnt from an early empirical study in a developed country (Akesson et al., 2008; Heeks & Stanforth, 2007; Cheng et al., 2009; Osman et al., 2014), which confirm, as follows:

- *Lesson 1:* Senior government executives and public sector leaders should actively engage and participate fully with t-Government investment decision improving the decision-making processes.
- *Lesson 2:* A holistic and comprehensive strategic planning initiatives with more resources made available to accomplish complex processes.
- *Lesson 3:* Evaluation of organisations should consider the concepts of success other than cost, such as stakeholders and users satisfaction. This is to help appraise and improve understanding of e-Government and consequently t-Government implementations.
- *Lesson 4:* Government agencies and departments should plainly ascertain who is responsible for t-Government evaluation through a clear transparent system.
- *Lesson 5:* A senior government executive should support t-Government appraisal to drive and give significance to the radical change in business processes. This should be coupled with strong leadership stressing the importance of ensuring that the benefits of services offered are clearly emphasized to citizens and businesses.
- *Lesson 6:* The radical business redesign of the whole service process offering between different departments within Dubai Police has paved the way to eliminate redundancy and initiate cross collaboration change across agencies such as Dubai Transport Authority.
- *Lesson 7:* Collective t-Government goals and objectives with a clear, well-defined transformational government strategy that is considered a key instrument to producing a centralised approach to achieve benefits realisation.

6.2 Research Limitation

The authors fully acknowledge that this study has some limitations, and readers and future academics and researchers should be aware of it and indeed interpret the material presented in this paper within the context of the limitations. For instance, the main limitation of this study was the focus on one government agency such as Dubai Police department. The authors argued that technical complexities such as the need to integrate business processes and technology across different government agencies present the most significant challenge to implementing fully integrated t-Government services in Dubai. The single case study clearly shows that government agencies need to redesign their business processes and information systems. It is apparent that more empirical data from businesses are needed to understand the effects of e-Government implementation on business organisations that lead to transformation. Although this study gave an insight into the transformational aspect of government agency, the authors contend that comprehensive case studies or well-designed surveys might be suitable for this purpose. Hence, this presents a limited benefit and further research can be conducted to rectify these shortcomings.

6.3 Future Recommendations

The importance of strategic visionary leadership in bringing about a successful transformation in t-Government implementation is evident from the abovementioned lessons learnt. However, building upon the rich foundation of the conceptual as well as empirical research findings described and overall understanding acquired in this paper, the authors presents the concerns that merit further research and anticipate that these issues may hold the potential in contributing towards the future research studies. For instance:

- Senior government executives need to actively engage with the t-Government agenda and provide adequate leadership style, sponsorship, clarity of responsibility and resources to this important long-term public sector initiative.
- T-Government implementation should be well structured and be built in a systematic way based on an understanding of operating conditions, stakeholders need and the wider country environment. The main challenge identified in this research is to effectively manage and lead this recognised multidimensional complex change in such a way that will integrate all those factors needed to enable an effective and sustained transition from e-Government to t-Government. It is crucial to say, transformational government has a complexity that demands a real discipline.
- There is more research needed in the grey area of what the authors termed '*eChasm*' from government as well stakeholders' perspective.
- 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 Commander of Dubai Police.

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