Realising T-Government: A UK Local Authority Perspective

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ABSTRACT

Having successfully e-enabled customer facing processes, the UK government is now working towards reengineering and e-enabling back office processes and information systems to facilitate more joined-up and citizen centric e-government services; these efforts are referred to as the transformational stage of e-government or T-Government. This paper seeks to explore what T-Government means to local authorities in the UK and what process related challenges have to be overcome to successfully implement transformational change in local government. While a number of broader issues of strategic, organisational, socio-cultural and technical origin are identified in the literature as presenting a considerable challenge for this goal, using a case study of a key local government service this paper shows that more obvious, but often ignored process and information systems related issues pose an even more significant challenge in practice.

***Keywords*:** T-government**,** E-government, Citizens, Process Reengineering,

1. Introduction

Since the advent of the Internet some forty years ago (Ho, 2002), the number of Information and Communication Technology (ICT) driven services have quadrupled making today's society a technology and Internet savvy one. The Internet has enabled businesses to trade and offer services using ICT to respond to consumer needs around the clock and from any location. While the 1990s saw the internet enabled e-Commerce revolution with private and multinational organizations, in the new millennium we have witnessed public sector organizations embracing the same principles of e-business through the introduction of national Electronic Government (e-government) initiatives. Since the mid 1990s ICT has played an important role in incrementally changing and shifting traditional and bureaucratic government models into the current e-government model where services are delivered according customers' needs (Wimmer, 2004). The drivers for e-government broadly include improving internal cost and management efficiencies, encouraging citizen participation, promoting economic development and improving overall governance (Schware *et al.*, 2003; Gandhi and Cross, 2001; Lee *et al.*, 2005). All developed countries have now implemented some form of e-government (Al-Kibsi et al. 2001; Palanisamy, 2004; Accenture 2005) – with most having implemented transactional level services (See for instance Layne and Lee, 2001; Weerakkody et al., 2007); and the majority of developing countries are beginning to follow suit (Karunanada and Weerakkody, 2006). E-government is seen as no longer an option but a necessity for all countries aiming for better and efficient governance (Gupta and Jana, 2003).

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With the popularity of e-government growing, various researchers have offered different definitions to explain the concept (Seifert and Petersen, 2002; Holden et al., 2003). However, these definitions differ according to the varying e-government focus and are usually centered on technology, business, process, citizen, government or a functional perspective. For instance, Seifert and Petersen (2002) explains e-government with a *functional* focus; Burn and Robins (2003) defines it with a *citizens* focus; Zhiyuan (2002) views e-government with a *technology* focus; Wassenaar (2000) classifies it with a *business* focus; Wimmer and Traunmuller (2000) takes a more *government* centered view; and Bonham et al. (2001) defines it with a *process* focus. In essence therefore, *e-government 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 other stakeholders (*Lee and Hong, 2002; Gupta and Jana, 2003; Evans, 2003; Basu , 2004; Gandhi and Cross, 2001; Burn *et al.,* 2003; Stoltzfus, 2004).

Many researchers have proposed various stages of e-government development (Layne and Lee, 2001; Siau and Long, 2005). These stages revolve mainly around four phases, which are web presence, interaction, transaction and transformation (Baum and Di Maio, 2001; Balutis, 2001; Layne and Lee, 2001). The transformational phase of e-government implementation (or T-Government) is the highest level of maturity for e-government programmes, thus it is also the most challenging phase to reach (Layne and Lee, 2001). The transformation phase encompasses redefining the delivery of government services by providing a single point of contact to citizens' that makes the government completely transparent to citizens and businesses (Affisco and Soliman, 2006). To realise the aforementioned and to provide citizens with seamless services, e-government will therefore need business processes that can be continuously optimized and expanded outside the enterprise and outside internal enterprise systems (Fagan, 2006; Fustes, 2003a; Champy, 2002). However, many researchers such as Lee *et al.*, 2005, Holden *et al.*, (2002), Layne and Lee (2001), and Sarikas and Weerakkody, (2007) identified that most e-government initiatives often stagnate at the transaction stage of development; only a few will succeed to offer sophisticated, value added and truly efficient and transparent online services using a single point of contact. The reason being that the transformation stage of e-government 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). Therefore, it is arguable that in order for e-government to progress to a high level of IS/IT and process integration, governments will need to radically transform most public sector agencies.

In most countries the focus of the early stages of e-government has been to e-enable existing front office processes in their current state without significant improvements or efficiency gains. Consequently, many of these governments are now embarking on the final stage of e-government (i.e. transformation of internal back office and external inter organisational processes). In the UK for instance, the government is pursuing a far-reaching and ambitious programme of innovation and radical change in the public sector (Daniel and Ward, 2006; Beynon-Davies and Martin, 2004). The modernisation agenda of public services in the UK is termed "transformational government", which aims to place technology at the heart of agenda to improve services from technological investment through business process reengineering (BPR) and re-designs (Cabinet Office, 2006). In comparison, the American government has also proposed a transformational stage e-government project called "Reengineering through Information Technology" and the Canadian government launched the "Blueprint for Renewing Government Services Using IT" (Li, 2005). In the UK, the Transformational Government Strategy was introduced in 2005 and sets out a six-year improvement journey for public services in the UK (Cabinet Office, 2006). The UK target for reaching the transformational stage of e-government is 2011 (ibid). The overall emphasis of the transformational government strategy is therefore to increase the amount of data availability through digitisation and to allow data sharing between departments (Caldwell, 2005; McIvor *et al.*, 2002).

Transformational government is defined by Murphy (2005) as radically changing the way government conducts its business internally and externally. The transformational phase of e-government should primarily focus upon cost savings and service improvement through back-office process and IS/IT change. Ultimately, the objective of the transformational stage of e-government implies that process reengineering is needed to rethink the value propositions of the government and how they function in serving citizens more efficiently and effectively (Palanisamy, 2004). A major goal therefore is also to change the behaviour and culture of government (ibid 2004).

In this paper we seek to examine the true *practical* meaning of 'transformational government' (or what is popularly referred to in the UK as T-Government). The motivation for the research is therefore to examine whether 'transformation' really means radical change of public sector processes [as in the case of BPR (Hammer and Champy, 1993)] or is it merely incremental business process and IS/IT change. Therefore, the research questions guiding this paper are: a) *what does T-Government mean to local authorities in the UK; and b) what process related challenges do they need to overcome in order to implement T-Government.* To explore these questions we undertook a case study in a large local authority in London, UK and this paper analyses the initial empirical findings from this study. The case study examines a core public service process that is executed at local government level and highlights key process and information systems challenges and consequent realities of implementing transformational stage e-government in the UK.

The research is timely since currently most governments around the globe, in particular developed countries, have already e-enabled their key customer facing or front office processes (referred to as e-government) and are now preparing to transform their administrative and back office processes (under the guise of t-government). Therefore, we believe that our analysis will be useful to local government agencies and policy makers seeking to promote the 'transformational government strategy' in the UK. Researchers in the area of business process management can also benefit by obtaining insights into the application of ICT and the resulting influence it has on local government processes. In order to explore the abovementioned issues, this paper is structured as follows: the next section offers a contextual background of the transformational stage of e-government; this is followed by a summary of the empirical data collection strategy; thereafter the key empirical findings are presented; finally the paper concludes by providing a discussion of the key findings and answering the research questions set out above.

2. T-Government: A Contextual Background

At present, technology has been the driving force behind e-government, but governments globally have finally realized that it is only one of the important components needed for successful transformation (Di Maio, 2006). Conversely, e-government implementation does not only mean developing well designed websites but also adapting the internal business processes to handle the input from online services (Mansar, 2006). Adapting business processes implies radically rethinking the way business processes work currently (Mansar, 2006; Hammer and Champy, 1993; Davenport, 1993). Researchers such as Mansar (2006) and Layne and Lee (2001) highlights that business process reengineering is particularly important when e-government projects reach the later stages of development such as the transformational stage where all services are centralised in a one-stop-shop environment. In particular, it has been reported that 85% to 95% of public sector e-commerce websites are not linked up with their back office processes (Mansar, 2006). Therefore, it is arguable that for the UK government to reach a high level of e-government development, process reengineering and process integration techniques are categorically needed. Moreover, from an e-government growth perspective [see for instance Layne and Lee (2001)] the UK is in its third wave of development; having already established the infrastructure and basic services (Daniel and Ward, 2006; Weerakkody *et al.*, 2006), the focus is now on ICT-enabled business transformation (Murphy, 2005). However, Murphy (2005) argues that the transformation stage of e-government (or T-Government as a buzzword) is about changing fundamentally the way government does what it does. Altghough many have argued that e-government implies dramatic organizational and institutional changes (Montagna, 2005;

Murphey, 2005); few governments have reached the process integration or transformation stages (O'Donnell *et al.*, 2003). On the contrary, studies suggest that ICT has been used in the public sector most often to reinforce existing organizational arrangements and power distributions rather than to change them (Kraemer and King, 2005).

Many academics and practitioners have referred to the final stage of e-government systems by different names such as horizontal integration (Layne and Lee, 2001), transformation (Baum and Di Maio, 2001), transforming government (Murphy, 2005; Balutis, 2001) and fully integrated or single point of access (Layne and Lee, 2001; Irani *et al.*, 2006). However, it is arguable that many scholars have also agreed on the purpose of this final stage of e-government implementation, i.e. that it leads to integrated government services and information is accessible by citizens and businesses from a single point (one-stop-shop) (Irani *et al.*, 2006). In particular Murphy's (2005) interpretation of the evolution of e-government below (Figure 1) distinguishes from the classifications suggested by for instance Baum and Di Maio (2001) and Balutis (2001) who describe the final stage as 'transformation and transforming government'; and Layne and Lee (2001) who refine the 'transform' stage into two stages: 'vertical integration' and 'horizontal integration'. Figure 1 shows the evolution of e-government according to Murphy (2005) and relates particularly well to the UK's transformational government agenda.

2.1 Where is the UK in terms of T-Government?

As identified before, the UK e-government initiative is in its third wave of development (as in figure 1, Murphy, 2005). In the third wave of development the increasing emphasis is upon the automation of existing back-office processes and integration both within and between services. In this context, the UK is promoting the development of closer horizontal and vertical integrations between different government services and departments. Furthermore, the emphasis is on the need to radically reengineer their business processes, and implement smarter, quicker processes which are enabled through ICT. Ultimately local authorities have to restructure their organisations to create a leaner organisation and move staff to more value adding roles to improve service delivery (Murphy, 2005). Thereafter, the fourth and final wave of development emphasizes next generation government, where most business processes are radically reengineered and IS/IT systems are collaborated vertically and horizontally throughout the entire organisation with relevant private sector organisations also linked together. This stage implies total transformation of government, where re-organisation is radical and across organisational boundaries and challenging traditional bureaucratic structures (Murphy, 2005; also see Champy, 2002).

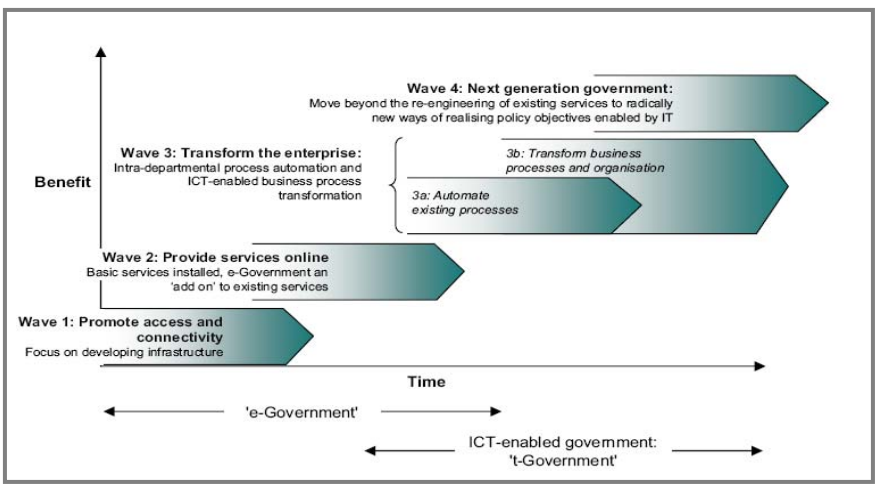

Figure 1: The Evolution of E-Government (Adapted from Murphy, 2005)

However, in order to achieve significant results in terms of phase 3 (transformation), research indicates that different government entities must work together by adopting processes that enable collecting data once for multiple uses and by streamlining redundant processes (Fagan, 2006; Weerakkody et al., 2007). Therefore, shallow e-commerce portals overlaid as a thin veneer on top of outdated organisational processes and aging IT systems will fail to transform the way of doing business or fail to deliver return on investment (Fagan, 2006). While the transformation stage of e-government proposes radical change in a manner that has not been seen before in the public sector, it is arguable that transformational change initiatives are highly complex and challenging endeavours (Earl, 1994; West, 2004; Scholl, 2002). The bitter lessons that were learned in the private sector should serve as a stern reminder of this (Willcocks, 1995). Like BPR in the 1990's, some argue that more than 70% of e-government initiatives have failed to meet the initial transformation objectives in the early stages of e-government implementation (Gandhi and Cross, 2001; Beynon-Davies and Martin, 2004; Di Maio, 2006). Most of these failures have been attributed to the inability of governments to change business processes in response to the e-government model (ibid). Therefore, ultimately, these early failures have resulted in an even more pressing need to integrate the front-end and back-end systems and processes (West, 2004; Sarikas and Weerakkody, 2007) and changes to business processes in order to reap the full potential of e-government initiatives (Kim *et al.*, 2007). In this context, analysis of a variety of e-government efforts suggests that incorporating lessons learned from BPR can provide insight into what is needed to achieve the transformational stage of e-government (figure 1, 3rd and 4th phases) (Fagan, 2006; Weerakkody et al., 2006). Also, significant social, organisational and technical challenges will need to be understood well and overcome in those efforts that strive to achieve governmental transformation (Affisco and Soliman, 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; Weerakkody et al., 2006).

3. Research Approach

This study uses a qualitative research approach utilising semi structured interviews, observations and document reviews in a case study setting (Myers, 1997; Kaplan and Duchon, 1988; Knott and Waites, 1998; Silverman, 2000; Walsham, 1995; Dix *et al.*, 2004; Gable, 1994). The advantages of using qualitative research are that it provides in-depth insight, provides flexibility and the results obtained are in real life like and rich with ideas (Ruyter and Scholl, 1998; Creswell, 2003). Furthermore, case studies are useful in providing a multidimensional picture of a situation (Whitman and Woszczynski, 2004). Case studies also offer the potential for generating alternative explanations from different stakeholder perspectives, thereby allowing the researcher to highlight contradictions and misunderstandings (Flick, 2006). Conversely, Yin (2003) suggests that case studies are appropriate where the purpose is to study current events, and where it is not necessary to control behavioural events or variables.

Open-ended semi-structured interviews were conducted with key figures involved in the e-government implementation programme in a large local authority in London UK (hereafter referred to as Council Y) during the period January to March 2006. The council was initially contacted using personal connections. Emails and telephone conversations were exchanged at the beginning which then led to the identification of relevant people to interview in the council. The actual interviews were then conducted by the researchers visiting the council premises during the aforementioned periods. A semi-structured interview approach was used in the research, as it was not necessary to ask questions in a specific order (Yin, 2003; Chen, 2004). Before the interviews were conducted, the participants were emailed with the interview questions so that the participants could familiarize themselves with the questions and also a suitable date and time convenient for the participants was arranged (Smith, 2004). Furthermore, the participants were given a consent form to read through regarding ethical considerations and their rights to withdraw from the study anytime without any prior notice or explanation. The formal interviews lasted approximately one to one

and a half hours, and were undertaken in a meeting room of the council buildings. This allowed the researchers and respondents to build the necessary rapport and privacy for the required questions. The interviews were audio recorded with the consent of participants as this allowed an easier analysis of the information and allowed the participants to be quoted when writing the results of the research (Crane, 2005). Further, to validate and verify that the results were true and accurate transcripts of the interviews were sent back to the respondents and followed up with brief telephone and email exchanges.

The data analysis was done by transcribing the information onto a document and later analysing the document using a thematic analysis process. This involved a process that involved encoding the qualitative information in order to identify a particular theme with the information; that is, if some sort of pattern is identified within the information that may have some relevance to the area of research (Boyatzis, 1998). Furthermore, data triangulation was used by comparing and contrasting the interview findings with observation results and document reviews as it was necessary to validate and verify the findings of the primary data with secondary information (Saunders *et al.*, 2002; Mingers, 2003). This ensured that no bias emerged from either the participants or the researcher, thus the findings and conclusion made from the cases are valid (Yin, 2003).

4. Process Transformation: A UK Local Government Perspective

In section two a literature review identified numerous challenges that local government agencies may face when moving from the 'e-enabling' to the 'transformational stage' of e-government. In this section we explore the impact of these issues in real life. As mentioned before we examine the execution of a key public service processes and related process management and integration issues in a large local council in the UK (identified as Y). By examining these key processes we hope to answer the two research questions set out in the introduction section of this paper: a) *what does T-Government mean to local authorities in the UK; and b) what process related challenges do they need to overcome in order to implement T-Government.*

4.1 Case Study: The Abandonment of Motor Vehicles Process at Council Y

Council Y is an outer-London borough that is the second largest borough in the London region. The Council is currently home to 248,000 residents, which are vastly ranging from different cultures and nationalities (Council report, 2005). From the archival documentation and references from the internet the following information regarding Council Y was obtained. Council Y was formed in 1965 and is London's second largest unitary borough covering 42 square miles. This case examines the activities that are involved when a citizen wants to report an *abandon a motor vehicle* (AMV). Interviews were conducted primarily at council Y's abandoned vehicles division (AMD). These interviews identified a scenario where lack of harmonisation and integration between business processes and underlying IS/IT systems has resulted in inefficient and ineffective process execution and service delivery in local government (LG). Based upon the information gathered from interviewing the service area participants from the abandoned vehicles division, the data flow diagram in figure 2 illustrates the overall procedures of the entire service of reporting and removing an abandoned vehicle.

The AMV process operates in the following manner. As illustrated in figure 2, when a citizen wants to report an abandoned motor vehicle he/she needs to inform the local authority telephone, fax, email or an online report form. The enquiry is sent to the central CRM (Customer Relationship Management) system at the contact centre. The citizen's enquiry is automatically logged onto the system and a CSA (Customer Service Administrator) is alerted about the enquiry via an email system. Thereafter, the CSA determines whether the provided information by the citizen is accurate and correct by checking the system to see if the vehicle has been reported prior to the enquiry. If the vehicle is established as taxed, then the process must end. However, if the vehicle is untaxed then the enquiry is processed and marked onto the CRM system. The information is then sent to the abandoned vehicle section that has the responsibility to print out details

of the enquiry and give it to an inspector. The inspector then must make a visit to the location and assess the condition of the vehicle and document the assessment. If the vehicle is taxed and does not look abandoned then the council cannot remove the vehicle and the process ends. However, if the vehicle is determined abandoned then the inspector will affix a message onto the vehicle stating that the council are aware of the vehicle. If the vehicle still remains after two days then the inspector revisits the vehicle and once again affixes a notice stating that the vehicle will be removed in 24 hours. Once the assessment report has been completed it is given to the senior vehicle inspector, who has the final decision to remove the vehicle. If the senior inspector decides to remove the vehicle then a legal document to remove the vehicle is sent through to the contractor. The contractor is responsible for the actual removal and disposal of the vehicle. The removal instructions are physically delivered to the contractor. Once the vehicle has been removed all the details are logged onto the CRM system and also statistical information is distributed to the West London Waste Authority and the Association of London Government.

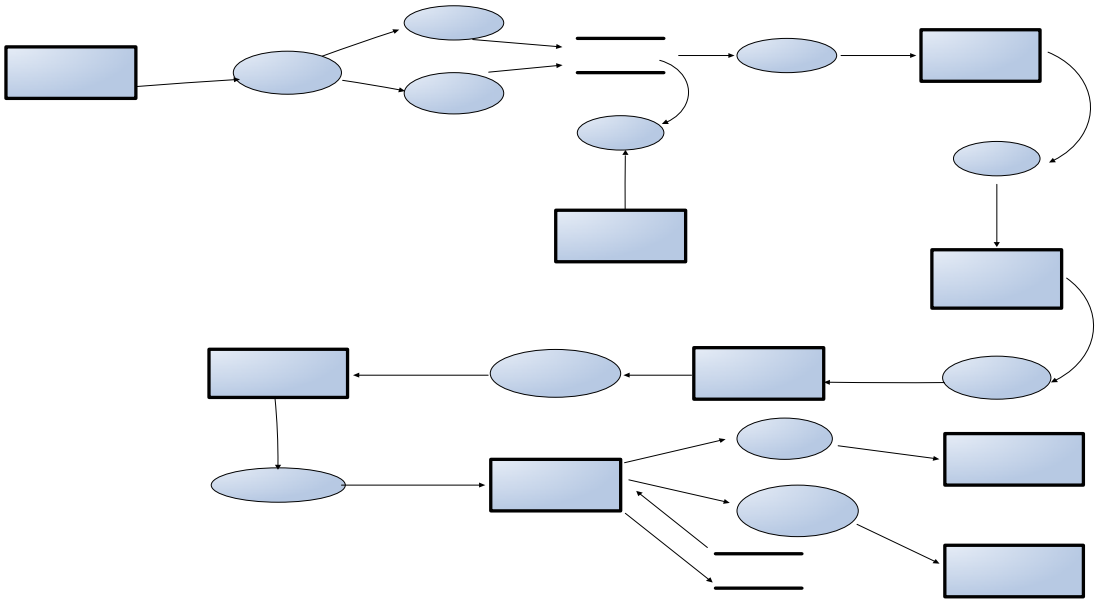

Figure 2: Data Flow Diagram for Abandonment of Vehicles

The scenario above clearly contradicts council Y's vision for improved services in the context of t-government and highlights a number of process management problems in a key public service process. The key problems lie in delays caused when retrieving and exchanging information between different internal departments as well as external entities. This is further compounded by delays that occur when physically delivering or handing over documentation from one employee (vehicle inspector) to another (senior inspector) as well as when information and documents are passed to the external contractors. Currently, the business processes and supporting systems that make up the AMV service were operating in isolation from each other resulting in several problems, more specifically in terms of communication. For example, a citizen was not aware of the outcome of his/her enquiry and the CSA in turn was not aware of the whole cycle. In this context, transforming the AMV service requires a radical reengineering of the process primarily to create a better harmonisation and integration of business activities and supporting ICT systems between the main stakeholders [citizens, government agencies (DVLA in this instance), employees (vehicle inspectors, administrators and CSA in this instance), and business partners (contractors in this instance)]; this mirrors the need for cross enterprise reengineering (or X-engineering) as suggested by Champy,

(2002). While the integration between two or more of these entities may allow the government to deliver e-services at a transaction stage [Figure 1, 2nd wave; or the 2nd phase of e-government as in the case of Layne and Lee, (2001)], in order to offer a fully integrated e-service for the AMV process, the overall integration and harmonisation of internal and external processes and systems will be imperative [see Champy (2002)].

5. Discussion and Conclusion

The two research questions this paper set out to address were: a) what does t-government mean to local authorities in the UK; and b) what process related challenges do they need to overcome in order to implement t-government. If the first question is viewed from a literature perspective, research by Lee *et al.,* (2005), Norris and Moon (2006) and Sarikas and Weerakkody (2007) finds that local e-government remains mainly informational and seldom is it achieving joined up service delivery or the potential positive impacts claimed by its most ardent advocates. Authors such as Kraemer and King (2005) have also argued that e-government is not transformational, but is incremental. These authors further predict that the trajectory of local e-government that has been observed to date (i.e. incremental change) is likely to continue into the foreseeable future. Although many governmental entities have built one-stop shops to streamline the waiting, the basic paper-based forms continue to rule the day (Conklin, 2007). It can be said that these forms are the items that enable the power base of significant numbers of bureaucrats, with careers to protect and they defend their turf fiercely through the application of complex and complicated rules and regulations, designed in part to maintain their status quo of power in the system (ibid).

When viewed from an empirical perspective, the case study described in the previous section illustrates that although the UK is considered to be in the 3rd wave of e-government (or t-government; figure 1) services are still delivered to citizens with major inherent process and IS/IT inefficiencies. Lack of synergy between local government, other public sector and private agencies' business processes and IS/IT systems prove that much more needs to be done in terms of fundamentally rethinking and radical reengineering of these processes if joint up services are to be delivered through a single point of access [i.e. the 3rd wave of e-government according to figure 1, Murphy (2005)]. However, in general, it is accepted that public sector agencies are slower in achieving transformational benefits from technology than private sector organisations (Montagna, 2005) mainly due to bureaucratic business practices, lack of skills and organisational structures that are not prepared to face radical change (Holmes, 2001; Weerakkody *at al*., 2007). Furthermore, process and IS/IT related factors that influence 'radical change' have not been exhaustively researched to date in a public sector environment and therefore hitherto less well known. Given this context, there is much scope for local government agencies implementing t-government to learn from the lessons of organisational change in the private sector; certainly, before embarking on BPR type change they can identify factors that may challenge transformational change in the public sector (Wimmer, 2001; Fagan, 2006; Weerakkody *at al*., 2007). However, there has been relatively little research conducted on transformational stage challenges in e-government, thus there is a need to research further in this area of study (Kim *et al.,* 2007). Some of the key high level challenges that organisations faced during the BPR movement when radically changing their processes and IS/IT systems included resistance from employees, legacy systems constraints, cultural and political constraints, lack of senior management commitment, negative employee attitude and resistance to change (Weerakkody and Currie, 2003; O'Donnell *et al.,* 2003; Weerakkody and Hinton, 1999; Willcocks, 1995; Mumford, 1994). Therefore, it is arguable that for the public sector these challenges will be even more severe in an environment that can be described as bureaucratic, functionally oriented, and legacy system driven (Weerakkody *et al.,* 2007). Hence, understanding the key challenges will no doubt help facilitate the transformational stage of e-government better (Larsen and Klischewski, 2004).

In the context of the second research question (process related challenges impeding t-government), the case study described in this paper shows that the transfer of the *abandonment of motor vehicles* process from a

largely manual to an automated, fully e-enabled state would require radical reengineering of these processes. However, as illustrated in figures 2, this will require a high level of process harmonisation and systems interoperability between different internal functions and external organisations to enable better online-real-time communication and information exchange [as in the case of Champy (2002)]. While this research has identified one example of process inefficiencies at local government level, yet we can argue that there will be many other local authorities that repeat the same inefficient processes. Therefore, to realise more customer-focused and joined up service delivery in the UK (vis-à-vis t-government), public sector agencies will require a substantial level of integration of back-end information systems such as, council tax systems, benefits systems, electoral registers, land and property systems etc. (Beynon-Davies and Martin, 2004). Given this context, local authorities will need to explore emerging technologies such as service oriented architecture and web services that can offer fast and cost effective solution to councils (like Y) by helping to retain many existing (functional) legacy applications in the council, but instead of staying in relative isolation from each other, they can be integrated to create new services that are more attuned to the needs of the citizens (Fustes, 2003; Weerakkody et al., 2007). Yet, from an organizational perspective, the paradigm shift and change of culture that need to be realised to change these processes would mean that local government will need to breakdown their departmental or silo culture and overcome resistance to change as seen in other forms of organizational change such as business process reengineering (Avgerou, 1993; Sahay and Walsham, 1997; Weerakkody and Hinton 1999). Nonetheless, on the positive side, improving key processes such as the aforementioned and consequently succeeding at a local level is imperative as empirical research in the UK strongly suggests that successful local best practices can be mirrored at national level (Hackney and Jones, 2002; www.kable.com).

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