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E-Government Implementation Challenges at Local Level: A Citizens' Centric Perspective

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ABSTRACT

Majority of the studies reported in e-government literature identify the challenges involved in any e-government implementation from technical or project implementation perspective. In contrast, in this study, we take the citizen centric perspective to identify the factors and issues that influence the success of e-government implementation at local level. In this paper, we report the findings of a case study of e-government implementation undertaken recently at a local government authority in the UK. We conducted the study in two phases. During the first phase, we interviewed operational and managerial staff members at a local government authority in the UK who were involved with the e-government implementation. In the second phase, we interviewed 88 citizens to understand the issues and perceptions about e-government services available to them. We use the design-reality gap analysis framework based on seven 'ITPOSMO' dimensions proposed by Heeks to compare and contrast the issues from citizens' perspective and those from government perspective. Our findings indicate that the success of e-government at local level requires a strong partnership between local government and citizens. The study results point to lack of clear strategy at local authorities' level for changing the way the government interacts with citizens. This paper contributes to our understanding of issues involved in implementing e-government at local level both from citizens' perspective and government perspective.

Keywords

E-government, Implementation, Electronic services

INTRODUCTION

The term 'e-Government', in general, can be considered to refer to the use of information and communication technologies to improve and better: delivery of government services to citizens, interactions with business and industry, citizen empowerment through access to information, or more efficient government management. E-government initiatives have intensified over years across many countries. The UK government has also initiated a major push toward offering its services through Internet to provide efficient services to its citizens (Mimicopoulas, 2004). The initial e-government initiatives in UK were directed toward National Health Services (NHS). Encouraged by the success of e-government efforts at NHS, all local governments in the UK were expected to implement e-Government by 2005. However, the efforts at the local authority level in UK have not met with similar level of success as NHS. For example, only 22% of the 500 local authorities have been able to meet the expectations set by UK government related to e-government. In absence of any focused research on e-government implementation at local authorities' level, it is not clear why such initiatives have not been as successful as those at NHS despite learnings available from the implementation at NHS.

Specific to e-government implementation at local level in the UK, Weerakkody and Choudrie (2005) suggest that many local boroughs are lagging behind the national expectations for e-government. In another study, Choudrie et al. (2005) report many factors that inhibit e-government implementation at the local level. Some of the inhibiting factors reported in earlier studies include lack of technology or web expertise, lack of financial resources, and lack of understanding of security issues (Ebrahim and Irani, 2005; Choudrie et al, 2005). Additionally, the issue of social exclusion is highlighted as a major challenge during any e-government implementation in the UK (Choudrie et al., 2005; Sinclair, 2006). While identification of factors that inhibit successful implementation of e-government is crucial to improve our understanding of e-government implementations, earlier studies do not provide significant guidance on how to address such issues.

Majority of the studies reported in the literature on e-government success take technical or project implementation perspective to assess its success. The studies related to e-government can be broadly categorized into three areas: evolution and development (Wimmer, 2002; Layne & Lee, 2001; Srivastava & Teo, 2005) adoption and implementation (Moynihan, 2004; Heeks, 2002; Poon & Huang, 2002), and impact on citizens and businesses (Moynihan, 2004; Banerjee & Chau, 2004,; Carter and Belanger, 2004). Most studies mainly focus on either synthesizing models or identifying facilitating or inhibiting factors across implementations (Heeks and Bailur 2006). However, current studies do not integrate government and citizens' perspective to identify the underlying reasons why certain e-government implementations succeed while others fail. For instance, Heeks (1999; 2001) proposes seven dimensions to assess gaps in design and development of e-government projects and uses the framework based on seven dimensions to categorize an e-government implementation as success, partial failure, or failure. However, this framework does not take into account another important factor that potentially affects the success of any e-government implementation, that is, citizens' expectations and adoption of e-government. Additionally, current literature on e-government lacks guidance on challenges and issues faced by government and citizens in making e-government implementation a success.

In this paper, we report and discuss the findings from a case study of a local government authority in UK, namely, Trading Standard Department within a North West City Council. Our objective was to compare and contrast the issues and challenges faced in e-government implementation from government and citizens' perspective. We have organized the paper as following. In the next section, we discuss the research method and the guiding framework for the case study. Subsequently, we discuss e-government initiatives in UK followed by description of the research setting. We then present the findings from the case study using the guiding research framework. We conclude the paper by discussing the findings.

RESEARCH METHODOLOGY

We employed interpretive case study approach for identifying and analyzing the issues the form the focus of this paper. While conducting this case study, we followed the guidelines suggested by Walsham (1995) for good interpetive case studies. These guidelines helped us eliminate the interview bias and minimize the concern about generalizing the findings of the study. We conducted the study in two phases. During the first phase, we interviewed operational and managerial staff members at a local government authority in the UK who were involved with the e-government implementation. We interviewed about 15 operational and managerial staff personnel at the local authority. In this phase, we also assessed the services offered by the local authority through its websites. In second phase of data collection, we surveyed 88 citizens to understand the issues and perceptions about e-government services available to them. This survey was carried out during the City Café Event organized by the local authority. Among the 88 citizens surveyed, 65% were females and 35% were males.

We use the design-reality gap analysis framework based on seven 'ITPOSMO' dimensions proposed by Heeks to compare and contrast the issues from citizens' perspective and those from government perspective. In order to understand the reasons for success or failure of e-government projects, Heeks (2002) provides a multidimensional framework consisting of seven dimensions, namely, information, technology, processes, objectives and values, staffing and skills, management systems and structures, and other resources (time and money). The primary objective of this framework is to provide an in-depth analysis of design-reality gaps in e-government projects. Using this multidimensional framework, Heeks (2005) categorizes e-government initiatives into three broad categories: t*otal failure* (the initiative was never implemented or was implemented but immediately abandoned); *partial failure* (major goals for the initiative were not attained and/or there were significant undesirable outcomes); and s*uccess* (most stakeholder groups attained their major goals and did not experience significant undesirable outcomes). While the prime focus of Heeks (1999; 2001) framework is on identifying gaps in the design and development of e-government projects, we deploy the framework to analyze the success of e-government implementation from citizens and government perspective.

RESEARCH SETTING

North West City Council (NWCC) is part of a local authority that serves the community within the North West area of UK. The NWCC is divided into 5 different portfolios, central services, children's services, regeneration, resources and supported Living. It employs over 20,000 staff to offer a range of services to the people of North West area in UK from housing, education, pest control to environment health issues. Recently, NWCC won a Beacon Council Status for 'Social Inclusion' through their information and communication technology (ICT) initiatives including a 24/7 call centre. The Beacon Status is the highest award to local authorities in recognition of quality public services and best practices for service delivery across local government.

Trading Standards Department (TSD) is one of the departments within the council that falls under the ambit of the regeneration portfolio and employs a staff of 24 people. TSD is responsible for providing information and services related to weighing and measure equipments, safety of products ranging from children's toys to electrical equipment; and age restriction of products such as alcohol and fireworks. TSD conducts routine inspections to trade premises to ensure that traders are complying with all relevant legislation such as Trade Descriptions Act and Supply of Goods and Services Act. In addition, TSD also provides service to the citizens living in the North West area on various issues from education program to informing young people about their rights as a consumer.

The TSD provided the appropriate setting to understand the challenges in implementing e-government at the local authority level in UK because it is part of the council which has won the Beacon award for high quality of its public services and yet could not successfully transition its quality public services to online context.

E-GOVERNMENT IMPLEMENTATION WITHIN NORTHWEST CITY COUNCIL

In its effort to implement e-government, NWCC has focused on developing websites within department with updated information about the council and its services for the citizens. Currently, all the major services are available electronically through NWCC's website. In addition, the council information and services are also available by phone, in–person, through street kiosks or through postal mail.

NWCC is considered as one of the few local authorities that are committed to providing electronic access to its key services, and has delivered electronic services. In recognition of this, NWCC recently received Beacon Award (REF) and also has met the main government targets for e-government implementation.

To enable in providing electronic services to its citizens, TSD within NWCC takes the support of its internal database. The TSD website is connected to its internal database, which is part of its overall management information system. This system operates on a Solaris platform and all the information resides on a central server. The database is split into several components to record and store information ranging from current TSD legislations to product safety. Specifically, the database stores information such as consumer complaints about traders, requests for service (for example, to do verification on a petrol site), data on food and non-food samples taken by TSD officers, prosecution information on individuals and businesses, and data on various inspection visits. Although the database provides up-to-date information that staff uses to change and maintain the contents of the website, many staff members complain about the accuracy of information stored in the database, which makes it difficult for them to properly maintain the website.

FINDINGS AND ANALYSIS

We use Heek's framework as a guideline to reflect on our findings of e-government implementation by comparing and contrasting perspectives of both citizens and government in the context of TSD within NWCC specifically.

Information: Our interviews with operational staff and managers at TSD indicate that e-government developments are considered a major opportunity for achieving efficiency gains within all service areas at the local authority level. The primary objectives for introducing e-government include: building services around citizen's choices; making government and its services more accessible; ensuring that new technology does not create a digital divide between those with ready access to electronic media and those without such an access; and using information more effectively. To provide accurate information and monitor the progress, two key activities were identified within TSD. First activity related to documenting progress of local authorities and second was to develop websites that represented each department within the council to disseminate information to citizens.

From internal information perspective, managers within TSD identified all services, using the BVPI 157 list of services and they succeeded in documenting repots that monitored and reviewed their progress as a council. While developing websites, managers realized the importance of providing information through the website that is not only updated and correct but easily accessible. Given that there are several departments within the council, it was considered logical that each department develop its own website and be accountable for the relevant information posted on the website. Recognizing that citizens will

look upon the NWCC as a whole, managers were aware of the significance to ensure that information on the all websites should be consistent where self-serve approach and queries can be resolved at first point of electronic contact.

Despite understanding the importance of providing correct and updated information on websites, it was found in practice this was not achieved. Our interviews with the citizens revealed that most of them found the information on the websites, particularly on TSD website, as inconsistent and out dated. Further, the hyperlinks on TSD's website linked to overwhelming pages of PDF documents where most of the information contained in the consumer and business advice packs was out of date. This was partly due to changes in some of the existing legislation. As a result inconsistency in information posted on the websites of NWCC, most of the people interviewed admitted to reverting back to the traditional method of contacting TSD by telephone. Although, it was more time consuming, citizens were convinced that it was still the best way to access information about the council. Consequently, concerns with issues such as lack of consistency in websites, outdated information resulted in lack of motivation among citizens to use electronic services offered through TSD website. The lack of interest among citizens to access information electronically made it even more difficult for NWCC to convince them that plethora of information available on NWCC website is advantageous to them.

Technology: Technology emerged as one area where both the staff at TSD and citizens faced considerable challenges. . Although each department was responsible to develop its own website, confidentiality of information, security, and privacy issues needed to be addressed as one council. To deal with such issues, NWCC followed technical centerpiece of UK government policy for electronically integrating the public sector, the electronic Government Interoperability (e-GIF), as a guideline. The GIF defines the necessary policies and technical specifications governing information flow across government and the public sector. In general, the framework covers issues such as: interconnectivity; data integration; e-services access (ukonline etc.); and content management. The main focus of the framework is to adopt the Internet and World Wide Web specifications; and apply them to government systems. It is specifically designed to cover the exchange of information between government systems and interactions, for example, between UK Government and citizens. Although managers of TSD did admit that policies provided comprehensive guidelines when using technology, it was difficult to comply with the GIF framework. Some managers believed that given that e-GIF is relatively new and continues to evolve, therefore it was very difficult, if not impossible, for systems to be fully compliant with the latest e-GIF specification at all times.

From the citizens' perspective, technological challenges ranged from lack of access to Internet to lack of skills in browsing through TSD website to find relevant information. Our interviews with the citizens indicate that 16-24 age group citizens were the biggest users of the Internet at 88% followed by 78% in the 25-44 age group. The 61+ age group were least likely to use the Internet. It appears that citizens in higher age group are not very enthusiastic about accessing information through TSD website because of their lack of comfort with Internet technology. This is reflected in part by the fact that 74% of those interviewed had never accessed the TSD website and surprisingly, 16% didn't know TSD had a website whereas only 10% had accessed the information.

Processes: It appears that TSD lacked proper planning and formal procedures to guide its efforts while implementing e-government. While central government in UK released a set of ten guidelines for all local authorities to follow, the processes at TSD did not seem to adhere to those guidelines. In addition to developing websites within NWCC, managers within the department were required to follow certain mandatory guidelines and processes. These include:

- BVPI 157: This Best Value Performance Indicator (BVPI) required all local authorities to make their key services electronically accessible by December 2005.

- Key Priority Outcomes: The e-Government Key Priority Outcomes were specific targets and aims set by the Government for all local authorities.

In light of this, developing websites together with meeting the targets above as early as December 2004, a full year ahead of schedule continuously reassured mangers that NWCC is not only committed to implementation of e-government but also 'successful' in following all processes set out for them.

In contrast to the perception of employees of NWCC, citizens believed processes were not followed as they found TSD' website in particular tedious and inconvenient. It appears that proper design processes were not followed while developing websites or citizens' inputs were not solicited during e-government implementation process. Our interviews also indicated citizens' complaints on the lack of user friendly website and the difficulty of navigation to find the 'correct' information. There seemed to be lack of effort on the part of NWCC to develop trust among its consumers about the services they offer through service level agreements such as connection guarantees or publicizing policies on data protection and freedom of

information. There was no evidence of efforts on part of TSD to build trust by formalizing agreements or developing policy documents related to data protection.

Objectives and Values: Our findings indicate contradictory perceptions of NWCC and citizens' with regard to objectives and values related to e-government implementation. For local authorities like NWCC, one of the core objectives is to ensure that all government services are available electronically by 2005 to citizens. With this in mind, the main aim of TSD's website was to educate consumers about their civil rights and provide businesses with details of legislation they must comply with. Consequently, a fully interactive website would have helped TSD reach a wider audience and provide information 24/7 with ease and convenience. However citizens' questioned and expressed concerns about their ability to be aware and consequently educate themselves about trading standards in north west of UK when legalization and regulation on the TSD's website are inaccurate and out of date. Moreover, variations in the web content from one department to another, lack of cohesion, confusing downloadable PDF's and poor navigation of the website resulted in citizens actually questioning the benefits of electronic services and also the underlying objectives of the e-government implementation as a whole.

Staff and Skills: It is interesting to note the variation in the perception of both government and citizens in the context of staff and skills. While employees of NWCC believe that they are successful in implementing e-government, they do recognize lack of technical skills among its staff members. Lack of training facilities compounded the problem of updating website using in-house IT staff. It was found that most of the staff within TSD lacked the technical skills to complete the task. Given that each department was accountable for its own website it created lack of consistency in the websites. Further, some employees echoed the belief that out-of-date material, poor control over design and navigation also contributed to poor development and maintenance of websites within different departments of NWCC. This in turn resulted in lack of consistency in achieving uniformity of technical standards.

Despite training facilities being available to employees who did not necessary have the skills to master the technology they were expected to work with, most of them could not attend training. This was simply because they did not have adequate time for training. The lack of skills together with the immense pressure to meet stringent deadline led to working environment where most staff lacked motivation to take any kind responsibility for e-government implementation.

Our interviews with the citizens revealed that they were concerned with the skills of the staff responsible for e-government implementation. The citizens who had used TSD website to access information actually questioned the skills and capabilities of the employees responsible for providing information. This directly impacted their perception about TSD website. When citizens or traders called to get information, staff members had to access the same database that was connected to the website, which stored incomplete and inaccurate information. This resulted in delays in answering queries from the citizens. Perhaps, this explains why most citizens did not see an immediate benefit from e-government implementation at TSD within NWCC.

Management Systems and Structures: The management structure at TSD has changed significantly over last six years, with many changes occurring council wide. Currently, it lacks clear reporting structure in general. This resulted in no staff member being assigned the responsibility of maintaining the website of TSD. To some extent managers believed that confusing management system within TSD also led to create a working environment where staff were frustrated and not greatly enthusiastic to do extra work of creating a website. This in turn could have also attributed to failing in providing the up-to date information on the website to its citizens.

However, when citizens contact their local council for information, they are not bound by the management systems and structure that exist within the council. They are more concerned with retrieving accurate information. Thus, it is correct to say their perception about the service provided by the local authority is more driven by how quickly and what information is provided to them. As far as citizens were concerned, management systems and structures did not directly impact their perception about the electronic services. However, they were still concerned with the way information was provided by the staff at TSD.

Other Resources and Constraints: NWCC aim was to focus its service delivery on the needs of the citizen to facilitate easy access to information and services for all. To achieve this, NWCC realized that there will be a need for significant re-engineering of the customer-facing services and systems and it will require integration with new, or substantially re-developed, back-office services and systems over the next four years. It also realizes that it will be necessary to drive forward

the cultural change in the approach to service delivery, which has already commenced. In view of the limited resources, these emerge as significant constraints to the success of e-government.

It emerged from our interviews with the citizens that there was a lack of appreciation for such constraints on part of local authorities in ensuring success of e-government implementation. It seemed that citizens were more focused on getting services in a timely and efficient manner rather than see the reasons behind lack of adequate services available through TSD website.

DISCUSSION

While any e-government implementation is expected to be citizens' centric, it is apparent that the UK government relied more on documentation of e-government implementation as a measure of success. For example, the IEG4 report was often used as a measure of good progress of e-government implementation by the local authorities in the UK. No doubt, these reports include policies and procedures that do provide a good measure about the success of e-government across UK. However, it is important to remember that local government websites are used to publish performance information and strategies with the aim of increasing the ease with which citizens can access this kind of information. As is clear from the findings and analysis present above, in contrast to the government's perceptions, citizens did not find the information useful or easy to access which resulted in low response rate for contacting the TSD via e-mail. At the local authority level, it is important to engage with citizens and communities while undertaking any e-government initiative. In other words, it is crucial for the local authorities to design services around citizens and businesses. The success of e-government implementation depends on how well the local authorities understand what citizens need and want by asking citizens directly and also from making the best possible use of the information local authorities can gather through service delivery. Local governments cannot select the users that they will offer services to. Local authorities must provide their services to every individual who lives within the area, even if they don't utilize the service. This is a significant challenge for local authorities on how best to supply services to such a diverse range of people.

While NWCC aimed to provide ease and convince with updated information through its e-government implementation, study findings indicate that this was not the case. However, there are factors beyond the control of government such as low levels of Internet connectivity and access to online services in many areas that tend to dwarf the success of e-government implementation at the local level. Other factors such as lack of awareness about TSD website can have significant impact on how much citizens use TSD website to access information and avail of its services. Currently, TSD gives out the NWCC web address, but there is no direct URL for TSD. If citizens are not familiar with the Internet, they may have difficulties finding the correct web page to access TSD information. This perhaps could explain why approximately 74% of citizens interviewed said that they had never accessed the TSD's website, whereas 16% did not know that a website existed. On a more positive note, when citizen's were asked if they would consider using the TSD Standards website in the future 65% of people questioned said they would.

Typically, a citizen expects to receive the necessary information through the local government's website. While NWCC believed it was successful in providing information through its departmental websites, citizens felt otherwise. Citizens viewed NWCC as whole and not individual departments within the council that had different websites where they had to follow different processes to access information. From that standpoint, it can be argued electronic services provided by local authorities necessitates that each department facilitate the consistent flow of (information) from local council website to different departmental websites. In order to achieve this, it is important that the local authorities centralize their infrastructure, allowing citizens to follow a uniform processes. As a result, citizens will find it convenient to find how information is organized and how to locate the relevant information with ease.

It is important to use technology but at the same time it is also critical to note that technology is not the only factor that contributes to the success of e-government. Technology only accounts for a small part in the development of e-government, other factors such as management of processes and people involved in those processes are also major contributors to successful implementation of e-government at local level. Further, technology also brings other softer issues such as privacy, legal and security concerns that warrant attention. Lack of technical experience and inadequate understanding of the potential of Internet technology on the part of senior managers may restrict the benefit any technological innovation can bring to an organization, specifically for e-government implementation. In general successfully implementing e-government requires

consideration of technological and social issues. As seen in the case of NWCC, the inability to manage such issues can have a negative effect on how citizens perceive the quality of services offered through e-government. Table 1 summarizes the issues and challenges from local authority perspective as well as citizens' perspective.

Dimension (ITPOS)	Issues and Challenges for Local Authority	Issues and Challenges for Citizens	Implications
Information	• Providing correct and updated information on the departmental websites • Coordinating with different departments to get accurate information	• Inconsistent & outdated information on local authority websites making services offered through website less useful.	• Local authorities can improve the perception of citizens about information by monitoring and regularly updating the information available on its websites. (Carter & Belanger, 2004) • Inter-departmental procedures need to be redesigned to ensure easy availability of information so that websites can be regularly updated (Themistocleous and Irani, 2001).
Technology	• Adhering to technological specifications as laid out in the policies and framework provided by the central government. • Addressing security related issues related to e-government services.	• Apparent lack of skills in using Internet technology, thereby, replying more on phone for availing services from the local authority.	• Security, integrity & privacy issues need to be addressed (Bannister 2005; Dutten et al. 2005; Holden & Miller 2005). • Local authorities need to make efforts to market & educate citizens about e-government services (Mayer-Schönberger & Lazer, 2007). • The issue of 'digital divide' needs to be addressed (Warschauer, 2003).
Processes	• Overambitious plan to implement e-government resulted in lack of proper planning and processes for e-government implementation. • Adhering to mandatory guidelines and processes. • Dealing with tedious but significant guidelines.	• No solicitation of inputs from the citizens while designing websites indicating lack of formal processes for e-government implementation. • Apparent lack of processes to formalize partnership with citizens while implementation e-government.	• To make e-government implementation successful at local level, it is crucial to understand practical considerations directly affecting citizens (Cook, 2003; Carter & Belanger, 2004);
Objectives & Values	• Gap in perception about importance of e-government services at local level compared to perception at the central government level. • Lack of sharing of values among different department at the local authority level about e-government implementation.	• The value of e-government for citizens lies in updated and accurate information. The local authority failed to meet this objective. • Generally, citizens were not clear about the objectives of the government for e-	• Create awareness about e-government and its utility to ensure enhanced citizens participation (Cater & Belanger, 2004).

		government implementation.	
Staff & Skills	• Lack of technical skills & training for e-government implementation.	• Concerns about the skills & capability of staff responsible for maintaining the websites. • Doubts about the ability to design user friendly interface for websites.	• To ensure success of e-government implementation, technical skills of the staff are critical to keep websites updated and current.
Management systems & structure	• Dealing with constraints created due to changes in management structure.	• Management structures had no direct impact on citizens.	• Maintaining a consistent management structure during e-government implementation can ensure smooth implementation.
Other resources & constraints	• Re-engineering of the customer facing processes required. • Cultural change in service delivery required.	• Lack of appreciation about the constraints faced by the local authority.	• Communication is critical; • Educate employees about the changes required in delivering services electronically to customers.

Table 1: Issues and Challenges from Local Authority and Citizens' Perspective

CONCLUSION

In this study, our objective was to compare and contrast perceptions about e-government implementation from local government and citizens' perspective. From a practice perspective, our study reveals a significant difference in the perceptions of both the UK government (provider of electronic services) and the citizens (users of electronic services). The success of e-government as measured by government was more included towards documentations and meeting deadlines whereas citizens were more concerned with the reliability of contents of the web page; easy navigation and user friendly website. Consequently, the quality of electronic services and to some extent level of awareness about e-government has the potential to profoundly transform citizens' perceptions of electronic services in general. Studies such as MOIT, 2005, confirm that such issues play an important factor in achieving a strong commitment to e-government initiatives. (MORI, 2005).

From a theoretical perspective, our paper identifies various factors that local authorities, in particularly will find useful as a starting point whilst implementing e-Government by taking into account citizens' perspective. Consequently, it provides significant learnings for e-government implementation at local authorities' level elsewhere and encourages an integrative perspective to ensure success of e-government at the local level.

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