Implementing E-Government in Sri Lanka: Lessons from the UK

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ABSTRACT

With the advancement of information and communication technologies (ICTs), e-government has emerged as an effective means of delivering government services to citizens. In the recent past, e-government has become popular in many economically developing countries, yet there are numerous attempts to reinvent the wheel. This article argues that e-government initiatives in developing countries can be effectively implemented if experiences acquired by developed countries are shared proficiently. In this context, research was carried out to identify and compare issues pertaining to implementing e-government initiatives in a developed country (UK) and an economically developing country (Sri Lanka). This research identified a number of challenges common to the UK and Sri Lanka that can be classified into the broad themes of political, organizational, and technical contexts. Conversely, a number of e-government adoption challenges such as lack of ICT literacy, inadequate ICT infrastructure, and inability to access e-government services using local languages were also identified that were more specific for the Sri Lankan context. To address these e-government adoption challenges, ICT training coupled with multilingual e-services was recognized as the key enabler in a developing country context. © 2009 Wiley Periodicals, Inc.

Keywords: e-government; developing country; e-services; language barriers; Sri Lanka

1. INTRODUCTION

The combined influences of the Internet and supporting information and communication technologies (ICTs) have seen commercial enterprises reaching out to people and exploiting business opportunities that previously would not have been possible. Internet-enabled e-business has also contributed to a significant increase in the speed and ease of business transactions, not only making competition intense between organizations, but also requiring

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companies to integrate new and faster systems and adjust to new technology to meet the
needs of customers (Deitel, Deitel, & Steinbuhler, 2001; Weerakkody, Choudrie, & Currie,
2004). Government and industry e-commerce agendas have become more closely linked in
recent times (International Center for Technology Assessment [ICTA], 2004b), and more
people are now less tolerant of poor, impersonal service in the public sector as they become
aware of the power of the Web and experience good service in the private sector (Guneward-
ena, 2002b; Re-Gov, 2005). Therefore, it is in every government’s interest to make its
public services more efficient and available to gain citizens’ trust, which has often eluded
many governments and political leaders in modern society. Although e-government already
has established itself as the primary enabler for transforming the way government services
are offered to citizens, it is now beginning to show promising results
in many developing countries too (Bhatnagar, 2000; Veldanda, 2004). Within developing
countries e-government has the potential to build stronger institutional capacity, offer bet-
ter service to citizens and businesses, and decrease corruption by increasing transparency
(Banerjee & Chau, 2004).

The challenge for governments, however, has been to constantly embrace the oppor-
tunities that ICTs present and to meet the public needs and expectations while being
cost-effective (Bertucci, 2006). Whereas the private sector has harnessed the Internet to
transform its value chain, governments have not exploited the opportunities at the same
rate due to implementation challenges and inflexible structures that are not ready to accom-
modate the change (Montagna, 2005; Weerakkody et al., 2006). E-government challenges
have been discussed by many researchers (Banerjee & Chau, 2004; Chen & Knepper,
2005; Karunananda & Weerakkody, 2006; United Nations Public Administration Network
[UNPAN] and American Society for Public Administration [ASPA], 2001; Weerakkody &
Choudrie, 2005). The findings in these studies show that the degree to which governments
offer online services differs across regions in the world depending on the country’s social,
political, and economic composition.

In developing countries, the implementation of public information systems has encoun-
tered numerous challenges, resulting in a poor success record (Avgerou, 1993; Qureshi,
2005). Therefore, for e-government implementation to be widespread and successful, exempla-
ary strategies and practices need to be identified in addition to establishing and prioritizing
processes to be e-enabled. Furthermore, every e-government program needs to have a clear
description of the proposed benefits to citizens, what challenges need to be overcome, and
the level of institutional change that needs to take place for it to be successful in a given
context (Hazlett & Hill, 2003; Re-Gov, 2005). Although many developed countries includ-
ing the UK have identified successful strategies and overcome obstacles to pioneer the
e-government concept (Weerakkody, Jones, & Olsen, 2007), developing countries such as
Sri Lanka have much to learn in this context. Like most developing countries, Sri Lanka has
devised plans to implement e-government on a full scale; from a practical and critical view-
point though, these plans can be viewed as rather ambitious. For this reason, examining two
countries (the UK [a developed country] and Sri Lanka [an economically developing coun-
try]) and their strategies for e-government implementation are therefore timely in identifying
good practice scenarios and knowledge-sharing opportunities. To gain experience from
e-government initiatives of a developed country, we have selected a study conducted in a
large West London Borough in the UK (referred as X). To understand the challenges faced
by an economically developing country in the context of e-government implementation, a
parallel study was conducted in Colombo, the capital of Sri Lanka. There are several reasons
for selecting the London Borough of X (referred as LBX) for this study. First, both Colombo
and the LBX officially began their e-government initiatives in 2001. Second, although the population of LBX is not comparable with that of Colombo, X has a large proportion of ethnic minorities including South Asians (including Sri Lankans) who share similar languages and cultural and social beliefs. In other words, the recipients of the e-services are largely non–English-speaking residents who use different languages (other than English) for accessing public services. Third, LBX is at the heart of a developed country, whereas Colombo is the capital of Sri Lanka (which is at the heart of a developing country). Fourth, the geographical extent and population in both locations are comparatively similar. Fifth, the government service structure in the UK and Sri Lanka are similar in many respects, with the Sri Lankan public administrative structure being modeled based upon that of the UK (postindependence in 1948). This allows us to acquire experience from an e-government initiative in a developed country; we argue that comparison of the Sri Lankan e-government experience with that of another developing country can be counterproductive because the lessons that can be learned will be limited. Moreover, drawing from the good practices of the UK in particular is attractive because this country has been considered an e-government leader since the emergence of the concept in the late 1990s (Accenture, 2003, 2004, 2005).

At present, LBX in the UK has implemented various e-services, yet Colombo in Sri Lanka is still at an early stage of e-government implementation. In this sense, information from LBX can be used to analyze the efforts of Colombo’s e-government experiences. However, because e-government in Colombo is still under development, the researchers were unable to obtain empirical information from any particular agency or department in the Sri Lankan government. Therefore, the best source of information pertaining to e-government in Sri Lanka is the government body known as ICTA, which is responsible for implementing e-government in Sri Lanka. In this context, the main sources of information for this research were LBX in the UK and ICTA in Sri Lanka. In both LBX and ICTA, there are no well-documented independent research findings about the progress and challenges faced in implementing e-government. Therefore, an empirical study based on semistructured interviews with persons responsible for implementing e-government projects were used as the primary data-collection method. To discuss the aforementioned findings, this article is structured as follow: The next section offers a brief literature overview of the e-government challenges from a developing country perspective; the research approach used in this study is outlined in Section 3; this is followed by an overview of the e-government implementation challenges in the UK in Section 4 and in Sri Lanka in Section 5. Section 6 then offers a comparative analysis of the empirical findings in the UK and Sri Lanka; and finally the article concludes by outlining the research conclusions, limitations, and future directions.

2. RESEARCH CONTEXT: E-GOVERNMENT IMPLEMENTATION AND UNDERLYING ISSUES

With the increasing adoption of e-government, academics, consultants, and solutions providers all want to pronounce their expert opinions. As with many preceding organizational improvement concepts (such as business process reengineering), the varying definitions suggested for e-government do not help. Holmes (2001) defines e-government as the use of technology, in particular the Internet, to deliver public services in a much more convenient, customer-oriented, cost-effective, and altogether different and better way. Reffat (2003) states that e-government initiatives are complex change efforts intended to

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use new and emerging technologies to support a transformation in the operation and effectiveness of government. For this article, however, the authors accept the notion that e-government broadly refers to the use of ICT for procedures and outcomes of central and local government and their administrative structures (Chadwick & May, 2003; Wimmer, 2002).

Leaving the researchers and pundits to argue its definition in a theoretical context, at a practical level e-government has grown and become a political imperative at local, national, and international levels (Weerakkody & Dhillon, 2008; Irani & Elliman, 2002). It is expected that, as e-government matures, there will be a plethora of benefits for governments, businesses, and citizens alike (Araujo & Grande, 2003; Holden, Norris, & Fletcher, 2003). Yet, how these benefits will be reached is still a matter of controversy. Despite the feasibility and availability of technology, government agencies have confronted many challenges and problems in successfully developing and implementing e-government systems (Margetts & Dunleavy, 2002; Weerakkody et al., 2004). Overcoming these challenges, therefore, is one of the biggest tests for the government of any country planning to implement e-government. Research on e-government has identified issues such as lack of awareness (Re-Gov, 2005), access to e-services (Fang, 2002), usability of e-government Web sites (Choudrie & Weerakkody, 2003; Porter, 2002), lack of trust (Bhattacherjee, 2002; Navarra & Cornford, 2003), security concerns (Harris & Schwartz, 2000; Jarvenpaa, Tractinsky, & Vitale, 2000), resistance to change (Margetts & Dunleavy, 2002), lack of skills and funding (Federal Computer Weekly, 2001; Weerakkody & Choudrie, 2005), data protection laws (Bonham, Seifert, & Thorson, 2001; Harris & Schwartz, 2000), and lack of strategy and frameworks (Reffat, 2003) are hindering the adoption of e-government in many countries. The literature in particular suggests that, to successfully implement e-government, a systematic and well-defined approach is needed for e-government projects to impact positively on the beneficiaries. Successful e-government is more than choosing the right technology; it is also taking into account the organizational capability; institutional and regulatory constraints; political, social, environmental, and cultural challenges; as well as the required human resources (Banerjee & Chau, 2004; Gil-García & Pardo 2005; Montagna, 2005; Weerakkody & Choudrie, 2005).

Although in the confines of this article it is futile to attempt to elucidate all e-government implementation challenges, this section nevertheless aims to outline some key challenges to e-government implementation from a developing country’s perspective. Table 1 is adopted from the work of Gil-García and Pardo (2005) and outlines the key challenge category and description of the associated challenges facing e-government implementation in developing countries.

Despite the numerous challenges outlined, a few pioneering developing countries have shown that some e-government services can be successfully implemented (Weerakkody, Dwivedi, Brooks, Williams, & Mwange, 2007). Yet it also can be argued that the implementation of e-government in different countries often implies different objectives and levels of transformation in their public services (Navarra & Cornford, 2003). Whereas plans in Europe focus on speeding up the development of public e-services European Union–wide (Weerakkody, Jones, & Olsen, 2007), in the UK plans are focused on e-enabling all key public services by the end of 2008 (Office of the Deputy Prime Minister [ODPM], 2002). It is beyond the scope of this article to investigate to what extent the UK plans have been implemented. However, current research suggests that there has been mixed success and not all local authorities have achieved their target (Society of Information Technology Management [SOICITM], 2006). Irrespective of these different plans and successes, however,
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<tr>
<th>Challenge Category</th>
<th>Challenges</th>
<th>Literature</th>
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<tr>
<td>Technological infrastructure</td>
<td>Issues of use and ease of use are vital factors to consider; technological incompatibility, complexity, newness of technology; lack of IT technical skills and experience and security issues are some challenges that can potentially affect e-government development</td>
<td>Basu, 2004; Beynon-Davis, 2002; Chen &amp; Knepper, 2005; Gil-García &amp; Pardo, 2005</td>
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<td>Partnership and collaboration</td>
<td>Lack of sense of ownership by partners and misunderstandings between the needs of government and capability of private sector to deliver may sometimes lead to e-government project failures</td>
<td>Holmes, 2001; InfoDEV &amp; CDT, 2002</td>
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<td>Strategy</td>
<td>Lack of strategic e-business plan for government to factor in the Internet integration of services across agencies; lack of explicit context e-government strategy specific to a country; project over scoping and unrealistic goals; lack of alignment of organizational goals and the project; lack of prioritizing and incorporating citizens’ pressing needs in e-government strategy; lack of rationale on which application is built</td>
<td>Bertucci, 2006; Bhatnagar, 2000; Heeks, 2003; Holmes, 2001; Ndou, 2004; PCIP, 2002; UNPAN, 2004; Weerakkody et al., 2007</td>
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<td>Institutional and environmental</td>
<td>Belief that failure to achieve intended change reflects a failure in technology; the issue of independence and autonomy units can hinder efforts to use technology to integrate or share information across multiple agencies; external pressure including policies and politics can also affect outcomes of e-government initiatives</td>
<td>Banerjee &amp; Chau, 2004; Brown &amp; Brudney, 2003; Dawes &amp; Pardo, 2002; Edmiston, 2003</td>
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<td>Human capital development</td>
<td>Lack of skills and in-house expertise necessary not only to understand e-government strategies but to maintain the new electronic services; lack of hybrid human capacities needed in e-government initiatives: technological, management, and commercial</td>
<td>Andersson, Grönlund, &amp; Hedström, 2005; Ndou, 2004</td>
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<td>Change management</td>
<td>Diversity of users in organizations involved poses huge challenges; changing employees’ attitudes and behavior toward citizens; resistance to change; internal conflicts; hierarchical bureaucratic structures; e-government systems are viewed as threats to jobs; lack of marketing e-government to public employees</td>
<td>Brown &amp; Brudney, 2003; Edmiston, 2003; Heeks, 2003; Weerakkody et al., 2006a</td>
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TABLE 1. Continued

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<td>Leadership role</td>
<td>Lack of long-term commitment and strong political leadership to champion change in e-government; lack of understanding of technology by the elected leaders of a country; lack of appointed leaders with private sector experience to lead e-government initiatives</td>
<td>Edmiston, 2003; Andersson et al., 2005; InfoDEV &amp; CDT, 2002; Jupp, 2003; Weerakkody et al., 2007</td>
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To find good practice in implementation of e-government it is important to look at different countries and examine their strategies and solutions to identify what is working and what is not. Also, it is imperative to understand the benefits and the various challenges faced in an e-government context as well as the organizational change aspects of e-government from a theoretical perspective before embarking on practical implementation. The rationale for this research lies in the reasoning that identifying good practices as well as problems encountered during the process of e-government implementation in different countries may encourage knowledge sharing and better implementation practices for individual countries (Lilfrank, 1995).

Considering the above arguments, establishing the meaning of e-government therefore is the essential first step that must be taken in creating an overall strategy for any given environment. According to Hunter and Jupp (2001), a true Internet strategy must examine all aspects of the business model and interactions with customers and stakeholders, and should identify those areas where more value can be created for all stakeholders by moving processes and interactions online. The plan of action for e-government should therefore include the following: a clear definition of e-government that covers key areas to be addressed and identification of all customers; a vision that is easily understood and succinctly expresses the concept of and plans for e-government; specific goals and objectives that can be monitored and measured; and identification of policies necessary to support e-government (Weerakkody et al., 2007). Holmes (2001) argues that, from the various e-government strategies and actions, there are five underlining principles emerging: put information and services online and do everything online; ensure easy and universal access to online information and services; train government employees to be knowledgeable workers; work in partnership to make it happen; and remove barriers and lead by example. These suggestions are equally relevant to both the UK and Sri Lanka, but particularly important for the latter as the country is relatively new to e-government.

3. RESEARCH APPROACH

To explore the arguments set out earlier in this article in a meaningful manner, a case-study approach was considered suitable for data collection (Pettigrew, 1990; Walsham, 1993; Yin, 1994), which began at a large local authority/council in the UK. Initial contact was made with the e-government program manager at LBX through e-mail and a follow-up telephone conversation. This conversation was followed by an informal meeting to discuss the purpose of the research and the identification of prospective interviewees. Thereafter, semistructured
interviews (Yin, 1994) lasting between one and two hours were initially conducted with eight staff members. These people represented cross-sections of the organization as well as the e-government initiative at LBX. This process helped to eliminate any bias from forming in the data collected (Denzin, 1978; Saunders, Lewis, & Thornhill, 2000; Yin, 1994). Before interviewing, interview questions attached to an email were sent to the participants, for the participants to familiarize themselves with the questions. Also a suitable time and date convenient for the participants was arranged for interviewing (Smith, 2006). The participants also were given a consent form prior to the interview to read through regarding the ethical considerations and their rights to withdraw from the study at any time without any prior notice or explanation. Brief notes were taken in a log book during the interviews as the participants did not wish the interviews to be tape-recorded. Thereafter, follow-up structured interviews were arranged with the same staff to confirm the results and clarify any unclear information (Yin, 1994). The follow-up interviews were brief (between 20 and 40 minutes) and started with the interviewer summarizing the key findings from the main interview, which was followed by a questioning phase to address any unclear information or themes that may have been overlooked during the first interview. This phase offered the opportunity for both the interviewer and interviewee to verify the information disclosed during the interviews (Creswell, 2003; Tesch, 1990; Yin, 1994).

The interviews were combined with observation and a review of council documentation, which allowed the researchers to verify and validate the empirical findings through triangulation (Creswell, 2003; Ragin, 1987; Tesch, 1990; Yin, 1994). Although the observations were brief and confined to a formal walkabout of the council offices and interviewees’ work surroundings at LBX, the review of documentation was more informative as white papers and government reports regarding LBX were examined at length. Finally, the data analysis was done by comparing the findings and initially forming themes, which were later merged/divided and categorized into appropriate headings. The data-gathering process (interviews, observations, and document reviews) for this research lasted for 3 months.

In parallel to LBX, a similar study was undertaken by one of the authors in Sri Lanka and involved interviews with two senior level employees involved in e-government implementation, the Head of Reengineering and the Director of Human Resources at ICTA in Colombo. Interviews with both of these people lasted approximately 2 hours, and the questions were semistructured in nature (Yin, 1994). The interviews were complimented with several e-mail communications and telephone conversations before and after the interview. These e-mail and telephone communications provided an ideal opportunity to clarify any information that was unclear or missed during the main interviews. The researchers also were given access to several other sources of information such as newsletters, project plans, and working papers. A similar protocol was followed in Sri Lanka; however, personal relationships with the interviewees led to a more informal approach to questioning them.

The interviews in London and Colombo were independently conducted by the two researchers, and neither of them was aware of what issues were identified by the other. The independence helped to avoid any bias that may have influenced the nature of the questions and the way and sequence the questions were posed to the interviewees (Denzin, 1978; Saunders et al., 2000; Yin, 1994). Although there was a reasonable overlap between viewpoints in the two cultures, some issues were not seen by the other party at all.

Although e-mails and telephone conversations were used in Sri Lanka, in particular to clarify the data-collection procedure more than in the UK, the main interview protocol was similar in both countries. The only impact that the slight differences in follow-up approach had was on data capture.
Combining the interviews with a review of e-government documentation in both countries allowed the researches to verify and validate the empirical findings through triangulation (Denzin, 1978; Saunders et al., 2000; Yin, 1994). Finally, the data analysis was done by comparing the two sets of findings against each other and forming the initial themes, which were later merged/divided and categorized into appropriate headings.

4. E-GOVERNMENT IMPLEMENTATION IN THE UK: EXPERIENCES FROM THE LBX

To reach the e-government vision in the UK, the government has developed a cohesive strategy with a clearly articulated action plan that leverages the resources of the private sector. This strategy is backed by a strong leadership structure to ensure communication to citizens and benchmarks for measuring progress (Accenture, 2003; Weerakkody, Jones, & Olsen, 2007). The key player in promoting e-government initiatives within local councils in the UK is the labor government. The government has four guiding principles for e-government: building services around the citizens’ needs; making government and services more accessible; social inclusion; and making better use of information (Transforming Government, 2006). The UK always has been conscious that e-government is a means to help drive the local policy objectives of mainstream services, release efficiency gains, and achieve tangible improvements in terms of shared priorities agreed on between central and local government (ODPM, 2005).

The formation of the office of the e-envoy following the Prime Minister’s announcement of the government’s commitment to delivering 100% of public services online by 2008 was the key to the UK’s e-government program. This target of 2008 was subsequently revised to 2005, quickening the pace of deployment and making the timetable ambitious. However, in 2005 the ODPM announced that it would extend its support program from 2005 to 2008. This was not a change of target back to 2008, as many local councils were on course to deliver the target. Rather, the purpose of the support program was to assist any stragglers.

In November 2002, the National Strategy was published. It was aimed at creating a common framework where local strategies can be planned with confidence. The framework also described what needed to be put in place nationally to help this happen. Common priorities for developments in technology and joined-up services that would reduce the costs of councils were also identified (ODPM, 2003). In transforming services, local government will be e-business oriented and more accessible, convenient, responsive, and cost-effective (ODPM, 2002). Consequently, the UK initiated broad changes to its e-government program in 2004. Along with significant increases in expenditures on information technology (IT) and progress on a number of high-profile programs, a new vision for ICT has been developed, spearheaded through the reformation of the office of the e-envoy into the e-government Unit (eGU). “The new role of the eGU is focused on ensuring that IT supports the business transformation of government itself so that it can provide better, more efficient public services” (Accenture, 2005, p94). Each government agency is responsible for defining its own IT strategy that will join-up with other services to support the eGU’s plans (Bhattacherjee, 2002).

LBX, where the empirical study for this research took place, is located in West London and has a population of 250,000 people from diverse backgrounds and ethnic minorities. LBX began its e-government program in 2001, and the first phase of implementation focused largely on improving customer relationship management processes. In 2004, LBX moved into its second phase of e-government implementation, which focused on process...
improvement work. Currently LBX is reengineering its back office processes and implementing new ICT systems to comply with central government guidelines for improved service delivery. Although overall e-government has improved the quality of service and information provided to the citizens in LBX, there are still a number of challenges that the borough needs to address before they are able to deliver fully functional, integrated electronic services to citizens. Here, we will be examining some of these challenges. Interviews with government officials and project managers in LBX council revealed a number of factors (positive and negative) that influenced the implementation of e-government in the borough.

4.1 E-Government Enablers

First, the enabling factors that encourage e-government in the borough are summarized below.

4.1.1 Technological Advancements. Addressing the technological advancements required to convert from manual operations to an e-business environment, LBX has taken a number of steps toward digital connectivity. The council has already linked and integrated their outlying offices in a wide area network (WAN) configuration, resulting for the first time in 300 home-working and mobile connections, video conferencing, and electronic learning facilities. LBX’s e-government program manager pointed out that a number of security features such as the use of firewalls, load-balancing software, single directory structures, and passwords are being implemented to complement the above. Subsequently there is an encouragement toward digital media, which, according to LBX’s IT manager, is helping to convert many manual and tedious tasks currently performed in the borough offices.

4.1.2 Improved Services. In keeping with the overall philosophy of e-government, the borough is focusing on providing a number of key services that are likely to have a positive impact on its citizens. These include free Internet access through public terminals and kiosks, free access to information through digital television, e-payments, e-billing, and e-voting. Moreover, the borough is working hard to link up with other boroughs (local governments) and local businesses in an effort to offer local government to local government (LG2LG) and local government to local business (LG2LB) services. This is highly encouraging when viewed in the context of, for example, Layne and Lee’s (2001) work on e-government implementation stages, and indicates that the council has a well-defined e-government implementation strategy.

4.2 E-Government Implementation Challenges

However, many challenges were impeding the deployment of e-government and related services in LBX. The e-government program manager in particular was quick to point out a number of challenges that were faced by the council in their efforts to implement e-government. These can be summarized as follows:

4.2.1 Political and Financial Constraints. In the context of management and strategy, although senior and middle management level members of the LBX local authority offices embrace e-government and are largely committed to the initiative, various political
factors influence the level and speed of progress made in the various projects. One such factor is the allocation of funding and resources needed to redesign and e-enable current business processes. Moreover, many senior managers were frustrated with the lack of funding for e-government initiatives at the local authority level. LBX’s efforts were constrained due to insufficient funding and the fact that government funding comes in packages for each financial year. This method of funding is hindering senior management plans for a long-term e-government strategic plan for the borough. This suggests that the government’s planned target of having all councils online by 2005 may need to be changed while more funding and resources are found to support the e-government implementation plans of the various councils. Furthermore, the method of allocation of funding to local councils by central government as well as the level of alignment of the local strategies and spending habits with those of central government may need to be reviewed.

4.2.2 Technology Constraints. From a technical perspective, as pointed out by the IT manager at LBX council, the process of tendering and procuring the technology and e-business application software needed for e-government is quite a complex task considering that LBX has limited experience in e-business. The program manager added, “There are lots of presentations given by reputed companies, which makes the task of selecting the format of the electronic forms and screens, for instance quite difficult.” This complexity, however, is not surprising given the lack of experience in the subject of procuring and using e-business type applications in the government sector.

4.2.3 Paradigm Shift. Not surprisingly, from an organizational perspective, some staff members were resisting the change in roles and responsibilities and were exhibiting a reluctance to switch to the new way of working. Although the majority of the staff members are residents in the borough, the e-government program manager disappointingly stated, “it seems like ICT training has had little impact so far in increasing their motivation.” Resistance to change is nothing new, and project managers encounter this routinely in the context of most organizational change and improvement initiatives. One common and established strategy for overcoming this obstacle remains education and training of staff on the technology or work practices driving the change.

4.2.4 Accessibility of e-Services. From a social context, it was revealed that LBX has an aging population that is more comfortable with face-to-face meetings with a borough employee than with using online services. Furthermore, financial constraints prevent many citizens from owning a personal computer. More importantly, the cost of broadband services (averaging approximately £15/$22 per month in the UK) and Internet access prevents less privileged persons from using e-services. Research carried out by the council during the last 2 years indicates that approximately 70% of the residents believe that the telephone is the easiest mode of access to information, and many thought that there was limited demand for online services. In this context, the council is faced with the dilemma of having to sell (push) the e-government concept to a market with little demand (pull) from the buyer’s (the citizens in this case) side. However, on a positive note, many local authorities in the UK, including LBX, offer free Internet access through local libraries, although (as reported by LBX) many citizens may yet prefer face to face or telephone contact (Weerakkody & Choudrie, 2005).
4.2.5 Language Barriers. According to a senior manager, language is another social obstacle that is preventing citizens from using the e-services offered by the council. It was suggested that some of LBX’s ethnic minorities did not communicate in English and were therefore unable to use e-services. These categories of people prefer information in hard (paper) format in their own languages. This senior source pondered, “Perhaps, this issue will be ultimately resolved with time when web pages are published in different languages to cater to some of the other main languages spoken by the citizens of the borough.”

4.2.6 Data Protection and Security Constraints. UK data-protection laws, cyber crime, and credit card fraud were identified by many interviewees as proving to be obstacles to e-government diffusion, because people are less confident about disclosing their personal information on the Internet. As suggested by the e-government program manager, this is to be expected given that LBX’s population is made up of diverse ethnic and social backgrounds and many citizens were nearer or past the age of retirement, making them less confident about using technology.

5. THE E-SRI LANKA INITIATIVE: A STUDY OF E-GOVERNMENT IMPLEMENTATION IN COLOMBO

Since early 2000, successive Sri Lankan governments have recognized the power of ICTs for effective delivery of government services to the general public. In this sense, the first official level e-government push came through the Ministry of Higher Education and Information Technology Development in Colombo in early 2001 (Gunawardena, 2002b). Colombo was expected to implement this e-government initiative through the Council for Information Technology (CINTEC). One of the main aims of this e-government initiative was to set up an island-wide network (National Education Information Network) linking all educational institutions and related services (Gunawardena, 2002a). This project was funded by a loan from the World Bank. In 2002, the Sri Lankan Government officially launched a large-scale project called e-Sri Lanka aimed at exploiting the power of ICT for national development covering all government services (ICTA, 2004a). With this initiative, the ICTA was also formed as the apex body of the Government of Sri Lanka for implementing the e-Sri Lanka project. The main donor of the e-Sri Lanka project is also the World Bank, but there are many other donor agencies, including the Japan Social Development Fund (JSDF), the Swedish International Development Agency (SIDA), the Canadian International Development Agency (CIDA), and the government of South Korea (ICTA, 2004a).

ICTA comes under the government of Sri Lanka and is expected to identify projects pertaining to e-government, formulate projects, develop plans, prepare schedules, and write proposal for finding donor agencies. Subsequently, ICTA mediates among the agreed donor agencies to sign memoranda of understanding with the government and launch the respective projects. Each project has a project team comprising representatives from ICTA, relevant government department/services, and the donor agency. ICTA also works closely with private sector organizations in Sri Lanka to realize the various goals and objectives of the e-Sri Lanka project. The various e-government projects formed under the e-Sri Lanka initiative are collectively known as Reengineering Government (Re-Gov, 2005).

ICTA has identified more than 20 e-services to be implemented under the e-government initiative in Sri Lanka. It also has identified some priority e-services such as e-motoring, e-foreign employment, e-pension, and so forth, and a number of ongoing smaller projects. However, it appears that although the e-Sri Lanka initiative started in 2002, many projects...
were not launched until recently and progress is below expectations due to various reasons. There is also little information formally documented and published on the ICTA Web site. As said before, the motivations and rationale for this research therefore lies in the above context whereby the authors consider it timely to explore the issues faced by the e-Sri Lanka project. Moreover, comparing the key e-government implementation challenges identified in Sri Lanka (Colombo) with those of the UK (LBX) is highly appropriate as lessons can be learned and good practices shared. The key empirical findings in Sri Lanka are discussed under the same broad headings of e-government enablers and challenges as with LBX in the UK.

5.1 E-Government Enablers

5.1.1 Technological Advancements. The establishment of an information infrastructure backbone to connect the various government and other overseas agencies involved in e-government implementation is the key enabler of the e-Sri Lanka project. This backbone forms the basis for a National Network Architecture and application platform. The National Network Architecture ensures network topology, means of transmission, and standard protocol requirements for electronic service delivery. In this context, Colombo will develop an island-wide network known as LakGovNet. The network is composed of existing communication backbones as well as new ones such as Regional Telecommunication Networks (RTNs). The purpose of RTNs is to provide access to the most underserved regions of the country. On the back of e-Sri Lanka, the government is also expected to establish 100 telecenters known as “Vishwa Gnana Kendra” (VGKs) to connect with the various RTNs. Although work is in progress to open 50 VGK centers (Karunananda and Weerakkody, 2006), at present only a few RTNs have been implemented. An application platform known as eGate also will be developed to operate on LakGovNet and will provide common services such as security, authentication, and payment gateways.

5.1.2 Improved Services. As is common with many e-government programs, e-services coming under the e-Sri Lanka initiative fall into three categories, namely, Government to Citizen (G2C), Government to Business (G2B), and Government to Government (G2G). As said before, there are 20 prioritized e-services identified, among which e-motoring, e-foreign employment, e-pension, e-DS (Divisional Secretariats), and electronic human resource management (e-HRM) are selected for implementation in phase 1 of the e-Sri Lanka project (Re-Gov, 2005). All of these projects are expected to integrate many services. For example, the e-motoring project is expected to link registration of motor vehicles, motor traffic, insurance services, and so forth. Among other things, the e-DS project will implement e-government at the Divisional Secretariats level. This will also provide data from various parts of the country to LakGovNet. One district has been selected to implement the first e-DS project, which started in October 2004, whereas the e-HRM project was initiated in September 2004. Three other projects (e-motoring, e-pension, and e-foreign employment) started in late 2005 and are expected to continue for at least 4 years.

Implementation of a national level population registry is yet another e-service coming under the first phase of the e-government project in Sri Lanka. In January 2005, the Memorandum of Understanding was assigned to implement this project (Wattegama, 2005) and was expected to start in 2005 and finish in December 2008. This work is in progress. ICTA has also planned and conducted several public-sector training programs in relation to
improving the ICT workforce in the country. Furthermore, there are also several initiatives in place, such as the development of Sinhala Unicode by ICTA (for the use of local languages) and e-library, which is funded by the South Korean government. The country portal www.gov.lk was started in August 2004 and is to be completed in December 2008.

5.2 E-Government Implementation Challenges

It is clear from Section 4 that e-government projects face a variety of issues and challenges. These issues can be manifold including technical, social, and management of e-services projects and their implementation. Our research has identified the following as key issues pertaining to implementation of e-government in Sri Lanka. We notice that these issues are very much interconnected and difficult to identify as individual units in some cases.

5.2.1 Political and Financial Constraints. Some government officials fear that the use of ICT will lead to loss of status and power. As a result, various e-government (e-service) projects have been faced with undue delays and various interruptions in Colombo in comparison to London (LBX). We noticed that this issue is particularly associated with some government officials’ unawareness and unwillingness to adopt new ICT-enabled processes.

5.2.2 Government Support. It was found that lack of adequate support from the government is a key issue for launching e-government initiatives. This issue is interrelated with various other issues. For example, we found that lack of awareness about the power of ICT on the part of some government officials who are at the decision-making level in Sri Lanka is one key reason impacting many other issues. Financial constraints are another reason why the government is not readily supporting the implementation of e-government initiatives.

5.2.3 Technology Constraints. Lack of a powerful, island-wide telecommunication infrastructure also has been an issue impeding the introduction of many e-services in Sri Lanka. Dial-up Internet facilities for accessing e-services cannot guarantee a cost-effective communication/solution for citizens. In contrast, the cost of telecommunication services is relatively high in Sri Lanka when compared with other countries in the region or the UK. In this sense, the development of LakGovNet needs serious attention to ensure cost-effective e-services availability for the general public. The e-service software solutions have no meaning if the telecom infrastructure is not adequate to deliver the services. One way to address this issue would be to bring in private sector collaboration for strengthening the telecom infrastructure initially in Colombo and surrounding urban areas and then in the more rural areas. Other infrastructural issues such as hardware and software requirements also can be met through private sector collaboration.

5.2.4 Paradigm Shift. Our research indicates that both government officials and the general public have shown a resistance to change and are reluctant to accept e-government as an alternative method of service delivery/receipt. This reluctance is evident when examining the newly introduced e-services mentioned before as citizens have shown little interest in making use of these services. More needs to be done to promote these services through appropriate publicity programs.
5.2.5 Lack of Coordination. It was also evident from this research that various e-government initiatives are scattered throughout different ministries and government agencies in Colombo without a cohesive overall plan. For example, ICTA has no clear link with the first e-government project launched by the Ministry of Higher Education in Sri Lanka. There are also various projects that have been launched using local languages, yet they are not associated with the relevant components of the e-Sri Lanka project. It is sad to note that negative attitudes and lack of teamwork has resulted in some projects reinventing the wheel.

5.2.6 Low ICT Literacy Rate. It was also revealed that the ICT literacy rate in Sri Lanka is not adequate for bringing e-services to the majority of the Sri Lankan population. This finding is particularly pertinent when considering populations in rural areas where computer literacy and command of the English language are sparse. Some of these issues can be addressed through various training programs. In fact, it is not surprising that ordinary citizens in a developing society are not adequately literate in ICT, when some government officials use the same reason for making political interruptions to decelerate the introduction of e-government in Sri Lanka. The recent survey by the Department of Census and Statistics of Sri Lanka reveals that, at the national level, only 10% of the population in the age group of 5 to 59 shows an adequate level of ICT literacy (Satharasinghe, 2004). This rate is 4.7% in the remote provinces in the country. Surprisingly, the ICT literacy rate in the Western Province, where the capital of Sri Lanka is located, is also as low as 15.3%.

5.2.7 Language Problems. A majority of new and innovative ICT solutions are available only in English, which can be a major barrier for persons who wish to access e-service using their mother tongue. The majority of Sri Lankans speak either Sinhalese or Tamil as their mother tongue, and the use of English is still limited to a small section of society, in particular Colombo and other urban cities in Sri Lanka. However, it is encouraging to note that although this was an issue for countries such as Japan, Korea, and Thailand when introducing e-government, these countries have successfully implemented e-government. Also encouraging is the development of standards for local languages (Sinhalese and Tamil) in Sri Lanka. We argue that appropriate translators are key to effective use of e-services in Sri Lanka.

6. COMPARISON OF RESEARCH FINDINGS

We present a comparison of e-government issues between LBX and ICTA in Colombo, Sri Lanka. As mentioned earlier, the goals of this study are to identify comparative challenges of e-government implementation between a developed and a developing country, and learn from good practice. In this context, the overall aim of this article is to use the empirical evidence to enhance the e-government experience in Sri Lanka. Table 2 summarizes the issues identified by LBX and ICTA in Colombo, Sri Lanka.

As outlined in Table 2, lack of strategy and high-level guidance were seen as weaknesses in Sri Lanka. It was the opposite in the UK where high-level support and clear strategy were evident. Moreover, lack of government support has been identified as a key issue impeding the progress in Sri Lanka. Top-level government officials’ unawareness of the power of ICT has compounded this issue further. However, a series of ICTA-led new training programs has already started to educate the government officials who might begin to address some
### TABLE 2. Issues Facing E-Government Implementation in the UK and Sri Lanka

<table>
<thead>
<tr>
<th>E-government challenges identified by LBX, UK</th>
<th>E-government challenges identified by ICTA in Colombo, Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Context: high level of central government support and the provision of a cohesive strategy and guidelines for local government</td>
<td>Political Context: no cohesive e-government strategy; lack of ICT awareness among government officials; negative attitude toward e-government</td>
</tr>
<tr>
<td>Government Support: high level of commitment and support for e-government from the prime minister; office of the deputy prime minister directly oversees all e-government projects</td>
<td>Government Support: limited funding for e-government; negative attitudes of government officials and agencies involved in the e-Sri Lanka initiative</td>
</tr>
<tr>
<td>Financial Constraints: the way funding is allocated (packaged) for local councils (local e-government implementation) is slowing down the pace of implementation</td>
<td>Financial Constraints: the Sri Lankan government is highly dependent on donor funding (such as the World Bank) and private sector contributions</td>
</tr>
<tr>
<td>Technology Constraints: difficulties encountered in the decision-making process when selecting ICT services and vendors (service providers) due to lack of experience in the public sector</td>
<td>Technology Constraints: need to improve the telecommunications infrastructure; high cost of accessing the Internet/e-services; lack of access to personal computers</td>
</tr>
<tr>
<td>Paradigm Shift: while some government/council employees were resisting change, citizens are largely neutral, and their attitudes are neither for nor against e-government</td>
<td>Paradigm Shift: government officials’ and citizens’ attitude to change; citizens and government officials reluctant to change</td>
</tr>
<tr>
<td>Project Management: centralized e-government strategy which outlines a framework and guidelines for local e-service implementation; however, lack of flexibility may limit local government innovation</td>
<td>Project Management: overall lack of coordination; various e-government projects operating in isolation; lack of teamwork among ICTA, central government, and private sector</td>
</tr>
<tr>
<td>Language Problems: some ethnic minority and elderly citizens preferred face to face or telephone contact to Web-based services; some also indicated a need for hard copy–based information in different languages</td>
<td>Language Problems: English used only as a second language; many rural citizens have no knowledge of English, making the delivery and receiving of e-services in English unrealistic</td>
</tr>
<tr>
<td>ICT Literacy Rate: ICT literacy is relatively high among UK citizens; however, most elderly and retired people lack ICT knowledge; elderly and/or disabled citizens find it difficult to use e-government Web sites</td>
<td>ICT Literacy Rate: limited access to ICT for citizens in rural areas; English language–related constraints; need for improved and accelerated ICT training programs</td>
</tr>
<tr>
<td>Data Protection and Security Constraints: negative citizens’ attitudes toward security and trust in relation to exposing personal information on the Web</td>
<td>Lack of Awareness: citizens’ lack of awareness of e-services; citizens uninterested in e-government</td>
</tr>
</tbody>
</table>

*Indicates that the corresponding issue was unique to that country.

of these challenges. In contrast, e-government efforts were made easier at LBX through a high level of central government support.

In the context of financial issues, the Sri Lankan e-government initiative depended heavily on external funding. Although this issue does not directly correspond with issues identified...
at LBX, the challenges posed by the issue of financial constraints and allocation of funding at LBX is nevertheless an indirect influence on e-government decision making at LBX.

In the context of technology, the ICTA viewpoint about lack of infrastructure for e-government is more of a wider technical challenge whereas LBX issues are more associated with procedural issues such as calling vendors and buying the appropriate technology. Unfortunately, infrastructure issues pertaining to e-government in Sri Lanka are very much influenced by limitations of the telecommunication system in Sri Lanka. This exercise is very costly unless foreign donor agencies wish to support further expansion. On the contrary, private sector collaboration can be requested for resolving this issue. In comparison, rapid advancements in technology and software applications in the UK meant that most local authorities were often faced with the dilemma of selecting the most appropriate solution for their e-government initiative.

The issue of paradigm shift or reluctance to change is a challenge that both LBX and the e-government initiative in Colombo face. Although this applies to both citizens as well as government officials in Sri Lanka, in the UK citizens were more neutral toward e-government. Government officials in Sri Lanka do not want to change their way of life in public office; the cause of this issue is generally the fear associated with how power will be distributed after introducing e-government, as many government officials are of the view that e-services will offer more opportunity for persons who are more ICT aware. Therefore, giving appropriate ICT training to those persons who might feel politically sidelined may begin to address this issue over time. In this context, the ICT training programs started by ICTA should be continued.

The lack of coordination among various e-government–related projects was identified as a key challenge that needs to be addressed in Sri Lanka. In the UK, a centralized e-government strategy driven by the labor government provides the necessary framework and guidelines for local councils such as LBX. For this reason, Colombo can learn from this approach in which a well-structured master plan and established coordination among relevant authorities can resolve many of the project implementation challenges.

A language problem has also been identified as a common issue for introducing e-government in both LBX and Sri Lanka. This issue is more crucial in Sri Lanka because the majority of the population and government officials operate mainly in Sinhalese or Tamil (the national languages). This issue cannot be solved without launching e-government initiatives to make e-services available in local languages. In this context, there is a lot to be learned from neighboring Southeast Asian countries. As an interim measure, Sri Lanka could adopt a bilingual approach to enabling e-government services. Also, it was revealed that citizens at LBX are more used to face to face or telephone contact with their council than with using Web based e-services. It is the opposite in Sri Lanka; as pointed out before as an infrastructural issue, telecommunication services in Sri Lanka are not adequate for supporting (high-speed) e-services. Therefore, in the Sri Lankan context, it can be argued that citizens do not refuse e-services in view of success or familiarity with other technologies. On the contrary, we argue that, for some people, e-services cannot be an alternative solution but can often be the only solution.

Low ICT literacy rate has been identified as another issue impeding the introduction of the e-government initiative in Sri Lanka. Although it is easy to assume that citizens at LBX are adequately literate in ICT, many elderly citizens of LBX were also lacking in this respect. Therefore, it is fair to suggest that this is a key challenge not only for Sri Lanka, but also for the UK. As ICTA has correctly identified, this issue also may be addressed through appropriate exposure and training in ICT.
Furthermore, LBX has identified data protection and security as important issues that were unique to the UK context. Although these issues were not found in Sri Lanka, we believe that they will need to be addressed in the future in Sri Lanka. For this reason, we wish to point out that Technology, Architecture, Standards, Security and Policy (TASS) of the e-government initiative in Sri Lanka has to play a key role in addressing possible issues related to this dimension. The only issue that was seen as unique to Sri Lanka was lack of awareness of e-government services, a challenge that can be overcome with a good marketing and awareness strategy (Weerakkody & Choudrie, 2005).

7. CONCLUSIONS, RESEARCH LIMITATIONS, AND FUTURE DIRECTIONS

This article presented a study of e-government implementation efforts and related challenges and issues faced by two countries, Sri Lanka (an economically developing country) and the UK (an economically developed country). The aim was to identify the challenges and learn lessons from a developed country of the strategies for implementing e-government services in an economically developing country. Two studies were conducted independently in the UK and Sri Lanka, thereby avoiding any mutual influence in the identification of issues in two different scenarios. The studies have shown that there is a strong level of similarities pertaining to the implementation of the e-government initiatives. However, we also acknowledged the fact that these two case studies focused on exploring e-government implementation challenges and facilitators at a strategic level and did not probe deeply into finding the underlying reasons for these challenges; rather it was perceived as an exploratory study with a long-term research agenda involving LBX and the e-government initiative in Sri Lanka.

Four broad challenges (government support, low ICT literacy rate, political constraints, reluctance to change) of seven identified by ICTA in Colombo have a direct connection with lack of proper ICT training for e-government in Sri Lanka. According to ICTA, lack of ICT training together with low ICT literacy rate is the main challenge that the Sri Lankan e-government initiative has to overcome. Moreover, lack of ICT training was not only an issue associated with citizens, but also with many senior government officials in Sri Lanka. Therefore, as one key conclusion, we report that island-wide ICT training must be given priority in conjunction with other components of the e-government initiatives in Sri Lanka. We argue that approximately 57% of the e-government issues identified in this article may be addressed effectively if appropriate ICT training is provided to Sri Lankan citizens and relevant government officials.

It can be concluded also that inadequacy of the telecommunication infrastructure has been a major challenge for the implementation of e-government in Sri Lanka. One of the reasons for the current success of e-government at LBX is the availability of adequate infrastructure for implementing various e-services. At present, the Sri Lankan telecommunication service is mainly delivered on standard 64-kb landlines. Technologies such as Asymmetric Digital Subscriber Line (ADSL) are limited to only a few areas of the capital of Sri Lanka. Also, the mobile telecommunication industry in Sri Lanka is still growing compared to that in the UK.

Moreover, compared with ICT training, expansion to ICT infrastructures is a highly expensive exercise. Therefore, it is fair to suggest that for an economically developing country like Sri Lanka this may be achieved only with assistance from foreign donor agencies. Nevertheless, strengthening the intended main ICT backbone, LakGovNet, is of prime importance for the success of e-government and the overall e-Sri Lanka initiative. In
addition, in a country where security issues demand more attention of central government, private sector involvement is another imperative. It is encouraging to note, however, that in the recent past there has been a growing interest shown by the government to foster private sector support for the e-Sri Lanka initiative.

Perhaps the most important conclusion of this research is that Sri Lanka should give due consideration to make its e-services available in local languages. In comparison to other countries in the region, Sri Lanka has been a latecomer to promoting the use of ICT in local languages. Lack of Unicode standards, local language parsers, and bilingual lexicon databases are some of the key themes pertaining to the use of local languages for ICT in Sri Lanka. Although there are some initiatives that have taken place, ICTA must take steps to form an umbrella for such initiatives and not allow these to be scattered around the country. When English language–dominant LBX has identified those language barriers as an issue for e-government initiatives, it is needless to say that Sri Lanka will face the same issue many times over.

Finally, we conclude that e-government in Sri Lanka should also be ready to face forthcoming issues such as data protection and security. This issue already has been identified by many e-government initiatives in developed countries, yet was not reported by ICTA during our interviews. Because e-government in Sri Lanka is still in its infancy, this matter can be taken into consideration sooner rather than facing it after the implementation of e-services. In summary, we conclude that the finding from this research is beneficial to identify directions along the e-government initiative in Sri Lanka. Although this article has only reported on a high-level study of issues faced by the UK and Sri Lanka in the context of e-government, more studies are needed to explore in detail the challenges/issues discussed.

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