

## Association for Information Systems AIS Electronic Library (AISeL)

---

ACIS 2009 Proceedings

Australasian (ACIS)

---

12-2009

# A Conceptual Framework for Evaluating the Public Value of e-Government: A Case Study from Sri Lanka

Kanishka Karunasena

*School of Business Information Technology, RMIT University, e75502@ems.rmit.edu.au*

Hepu Deng

*School of Business Information Technology, RMIT University, hepu.deng@rmit.edu.au*

Follow this and additional works at: <http://aisel.aisnet.org/acis2009>

---

### Recommended Citation

Karunasena, Kanishka and Deng, Hepu, "A Conceptual Framework for Evaluating the Public Value of e-Government: A Case Study from Sri Lanka" (2009). *ACIS 2009 Proceedings*. 8.

<http://aisel.aisnet.org/acis2009/8>

This material is brought to you by the Australasian (ACIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ACIS 2009 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

## **A Conceptual Framework for Evaluating the Public Value of e-Government: A Case Study from Sri Lanka**

Kanishka Karunasena and Hepu Deng  
School of Business Information Technology  
RMIT University  
Melbourne, Australia  
Email: [e75502@ems.rmit.edu.au](mailto:e75502@ems.rmit.edu.au); [Hepu.deng@rmit.edu.au](mailto:Hepu.deng@rmit.edu.au)

### **Abstract**

*This paper proposes a conceptual framework for evaluating the public value of e-government from the perspective of citizens. Four dimensions of public value creation through e-government are considered including delivery of public service, achievement of outcomes, development of trust, and effectiveness of public organizations. To demonstrate the applicability of the proposed framework, a case study of evaluating the public value of e-government in Sri Lanka is conducted. The results show that the proposed framework is effective in assessing the public value of e-government and pinpointing the areas for improvements in e-government.*

### **Keywords**

Public Value, e-Government, e-Sri Lanka, Case Study

### **INTRODUCTION**

Electronic government (e-government) is commonly referred to as the delivery of government information and services through the use of information and communication technologies (ICT) (Akman et al. 2005; Horan and Abhichandani 2006). E-government promises significant benefits to governments and their citizens including delivery of quality public service, convenience and accessibility to government services, improvement of the quality of life, reduction of communication and information costs, bridging digital divide, and active participation of citizens in government (Aldrich et al. 2002; Jaeger and Thompson 2003). As a result tremendous investment has been made in implementing diverse e-government initiatives worldwide. With the increasing pressure on accountability nowadays, evaluating the effectiveness of such investment becomes an urgent issue (Bend 2004).

The concept of public value is increasingly being used for evaluating the performance of public services (Moore 1995). It provides an inclusive framework for examining the performance of public services (Kelly et al. 2002; O'Flynn 2007; Try and Radnor 2007). E-government is initiated for improving the delivery of public services (Kearns 2004; Yu 2008). In this context, the public value of e-government concerns about the improvement of the delivery of public services through e-government initiatives.

Several studies have been conducted to investigate the public value of e-government. Kearns (2004), for example, develops a methodology for evaluating the public value of e-government in United Kingdom. Golubeva (2007) proposes a methodology for evaluating the public value of web portals in the Russian Federation. The European Commission proposes a framework for examining the public value of specific e-government projects in developed countries (eGEP 2006). Each of these methodologies, however, suffers from various shortcomings. For example, Kearns' (2004) approach ignores the public value creation through operating an effective public organization. The scope of the methodology proposed by Golubeva (2007) is limited to the public value creation through e-government services delivery. Furthermore, these methodologies are designed for evaluating the public value of e-government in developed countries. To date there is a lack of research on assessing the public value of e-government in developing countries.

This paper proposes a conceptual framework for evaluating the public value of e-government for addressing the issues as above. The proposed framework consists of four dimensions of public value creation through e-government, namely, the delivery of public service, the achievement of outcomes, the development of trust, and the effectiveness of public organizations. To demonstrate the applicability of the proposed framework, a case study of evaluating the public value of e-government in Sri Lanka is conducted by focusing on two key research questions: (a) what is the public value created through e-government initiatives? (b) how well do the e-government initiatives deliver the public value?. The results show that the proposed framework is effective in assessing the public value through e-government and pinpointing the areas for improvements in e-government.

## **DEVELOPMENTS OF E-GOVERNMENT IN SRI LANKA**

Sri Lanka is a developing country whose economic development has been slowed down considerably due to the civil war that went on for the last three decades (UNDP 2007). By launching the e-Sri Lanka development road map in 2002, the government of Sri Lanka attempted to foster social and economic development in order to improve the quality of life of its citizens (Hanna 2007).

Millions of dollars have been invested in implementing numerous e-government initiatives in the e-Sri Lanka program. Sponsored by the World Bank with the support of the government of Sri Lanka and other donor agencies (Hanna 2007), the Information and Communication Technology Agency has been established for coordinating and facilitating the implementation of e-government initiatives (ICTA 2005). Six distinct strategies have been adopted including (a) an information infrastructure development program to ensure affordable access to information, communication, and electronic services, (b) a coherent investment strategy for reforming the government to provide transparent, effective, and efficient public services through re-engineering government processors, (c) an e-society development program to empower the most vulnerable communities through promoting innovative use of ICT, (d) a program to build up an ICT literate society and ICT skilled workforce, (e) a strategy to support the domestic ICT sector to increase the utilization of ICT for ensuring a sustainable economic growth, and (f) a program for creating a policy and regulatory environment, and developing leadership and institutional capacity building to support ICT based developments (ICTA 2005).

With the implementation of e-Sri Lanka program, adequately evaluating the performance of e-Sri Lanka initiatives become urgent. Such an evaluation is important for several reasons (Karunasena and Deng 2009). Firstly, the e-Sri Lanka program is at the final year of implementation. Understanding how the overall e-Sri Lanka program performs helps Sri Lanka improve its e-government practice in the next stage of e-government development. Secondly, the experience accumulated and the lessons learned from implementing the e-Sri Lanka program would greatly benefit the donor organizations in their tireless efforts to help other developing countries such as Pakistan, Rwanda, Ghana and Cuba to effectively pursue their e-government developments (Hanna 2008). Thirdly, the fact that e-Sri Lanka program heavily depends on the funding support of international donors (Hanna 2007; 2008) obligates the government to timely account for their investment in e-government. Such a study helps attract future support for e-government programs. Fourthly, no rigorous assessment has been done so far in examining the public value of e-Sri Lanka program although there is literature that highlights the uniqueness and lessons to be learned from e-government initiatives in Sri Lanka (Hanna 2007; 2008).

## **EVALUATING THE PUBLIC VALUE OF E-GOVERNMENT**

Public value is what citizens seek from public services and from the achievement of socially desirable strategic outcomes (Kelly et al. 2002; Grimsley et al. 2006). In a society, the values attached to the activities that can improve the quality of life, delivery of public services, the better enforcement of laws, and more intangible outcomes such as increased fairness and trust are of tremendous importance to its citizens (Kelly et al. 2002).

Public value can be created in many ways. For example, improving the quality of public service delivery produces public value (Kelly et al. 2002; O'Flynn 2007). Operating an effective public organization is another way of creating public value (Moore 1995). Achieving socially desired outcomes such as better education, better employment, alleviation of poverty etc creates public value (Kelly et al. 2002; Cole and Parston 2006; Try and Radnor 2007). Furthermore, developing trust between government and public is also an important way to create public value (Kelly et al. 2002; O'Flynn 2007; Try and Radnor 2007). In a society, individuals relate to a wide range of groups and institutes such as communities, public sector service providers. The relationships among these institutes operate on the basis of mutual trust (Grimsley et al. 2006). Thus, even if public service delivery and socially desirable outcome are achieved, a failure of trust effectively destroys the public value (Kelly et al. 2002). Figure 1 presents four different sources of public value creation.

E-government has gone through several phases for improving the performance of public services with various drivers behind including (a) technology, (b) user, and (c) cost. A technology driven e-government endeavour focuses on the identification and use of ICT for the effective and efficiency delivery of public services. A cost-driven e-government initiative strives for the operations efficiency of public services delivery. A user centred e-government strategy pays more attention to the requirements and expectations of users (IANIS 2007).

The concept of public value is increasingly becoming the innovative driver in modern e-government endeavours (Bonina and Cordella 2008). As pointed out by Castelnovo and Simonetta (2007), "since public administration aims at producing value for citizens and the use of ICT to improve government is a means to improve the public value". This shows that creating public value through e-government is effective. "People express preferences, the government uses ICT to enhance its own capacity to deliver what people want, and eventually a public value is created" (UNDESA 2003).

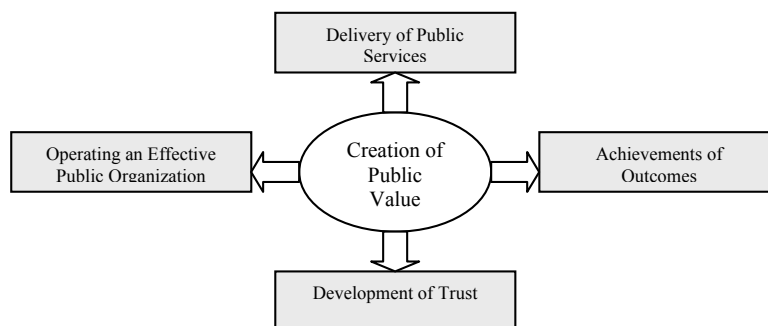


Figure 1: Sources of public value creation

There are several developments in the literature for evaluating the public value of e-government. Kearns (2004), for example, proposes a conceptual framework based on an extension of the methodology of Kelly et al (2002) for evaluating the public value of public service. This framework is designed to examine the contribution of e-government to delivery of public services, achievement of desirable outcomes, and development of public trust in government. It is used to examine the public value of e-health initiatives in UK (Bend 2004).

Heeks (2008) proposes a set of indicators for measuring the delivery of public value through e-government. These indicators are developed for respectively examining (a) the level of information provision, (b) the extent of e-government use, (c) the availability of choices, (d) the level of user satisfaction, (e) the extent to which e-government is focused on user priorities, (f) the extent to which e-government is focused on those most in need communities, (g) the cost effectiveness of e-government service, (h) the contribution of e-government to the delivery of outcomes, and (i) the contribution of e-government to develop and secure trust.

Golubeva (2007) proposes a set of indicators for examining the public value of e-government. The quality of e-government portals is assessed with respect to (a) usability, (b) transparency, (c) interactivity, (d) citizens centricity of the e-services, and (e) level of e-services development. These indicators are applied in the Russian Federation for evaluating the public value of regional web portals with interesting findings. This set of indicators, however, has been developed for examining the public value of web portals with the focus on the supply side of e-government. E-government, however, is more than just the delivery of public services (Hanna 2008).

The European Commission proposes a conceptual framework for examining different types of values of e-government (eGEP 2006). The public value of e-government initiatives are investigated from the perspectives of (a) organizational value, (b) political value, and (c) user value. The organizational value concerns the operations efficiency and effectiveness of public organizations. The political value relates to the openness and transparency of the public sector and the participation of citizens in government. The user value focuses on improving the satisfaction of citizens with regard to the delivery of public services.

The methodologies above have various shortcomings in effectively evaluating the public value of e-government. Kearns (2004), for example, identifies the development of trust through e-government as a major source of public value. However, how to measure the public trust is ignored. Furthermore, the proposed framework fails to consider the dimension of operating effective public organizations as an important source of public value. The methodology of Heeks's (2008) suffers from similar problems as the indicators used are derived from Kearns (2004). The approach of Golubeva (2007) is narrowly focused on the supply side of e-government. The approach of the European Commission (eGEP 2006) is criticised for failing to include governments' e-enabling of civil society in the evaluation process (Heeks 2008). To adequately address the problems above, this paper proposes a conceptual framework for evaluating the public value of e-government. To demonstrate the applicability of the framework, a case study of evaluating the public value of e-government in Sri Lanka is then presented.

## A CONCEPTUAL FRAMEWORK

E-government development in Sri Lanka has followed a unique path. This is because of the unique context that Sri Lanka is in as a developing country with a majority of citizens living in rural areas, low e-readiness, low ICT literacy, poor information infrastructure, and low householder internet penetration (Hanna 2007; 2008). The e-government applications in Sri Lanka are not mature. As a result, a unique e-government program encapsulating both e-government and e-development strategies has been implemented. The e-Sri Lanka program aims at delivering e-government services for effectively creating public values for citizens.

The rapid development in e-government in Sri Lanka creates an urgent need for evaluating the public value of the e-government initiatives. Considering the nature of e-government development in Sri Lanka, four dimensions

of public value creation through e-government are considered. As presented in Figure 1, these dimensions outline the four different ways of creating public value including the delivery of public services, the achievement of desirable outcomes, the development of trust, and the effectiveness of public organizations. A set of attributes associated with each dimension are identified for better measuring the performance of e-government with respect to each dimension. Figure 2 shows an overview of the proposed conceptual framework.

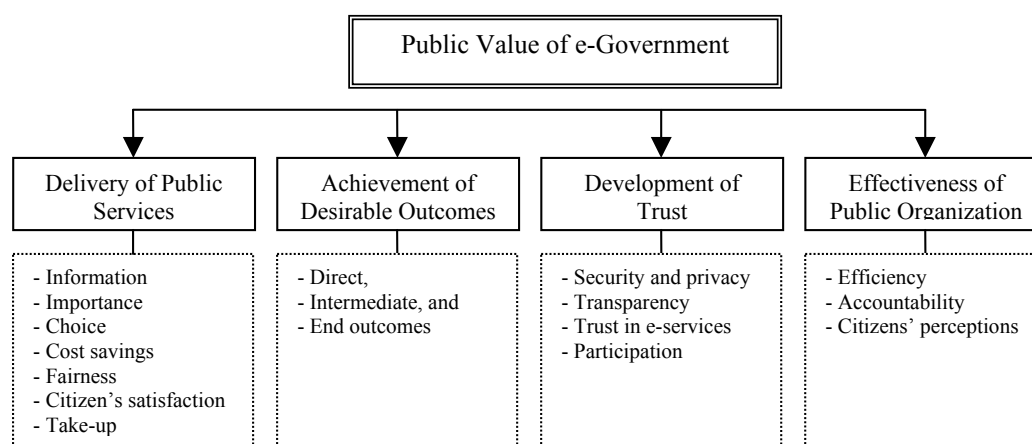


Figure 2: A conceptual framework for evaluating public value of e-government

The delivery of public services concerns the quality of the service delivered through e-government and the timeliness of such deliveries (Kearns 2004; Heeks 2008). Effectively delivering public services through e-government very much depends on the availability of information, the importance of information to citizens, choice, cost savings, fairness of services, satisfaction of citizens, and take-up of e-government services. The availability of information concerns about the amount and type of information available to citizens through e-government services. The importance of information is a reflection of the perception and requirements of citizens with respect to their specific needs. The choice refers to the availability of e-government service delivery channels to citizens for accessing public services. The cost saving of e-government relates to the amount of money that citizens can actually save through e-government service compared to traditional government services. The fairness of e-government services delivery refers to the extent to which e-government services are available to the whole population including socially disadvantaged groups. This is reflected through the availability of resources for disadvantaged groups to access e-government services. The satisfaction of citizens with e-government services is reflected through the experience of citizens in using e-government services. The take-up of e-government is measured by the number of users who have used at least one e-government service.

Achieving socially desirable outcomes is a major source of public value creation through e-government (Kearns 2004; Heeks 2008). The achievement of outcomes is reflected by the impact, deliverables, and consequences that public services are designed to attain or have (Cole and Parston 2006). Outcomes include initial outcomes, intermediate outcomes, and long term outcomes. They can also be classified as direct outcomes, intermediate outcomes, and end outcomes (Codagnone and Undheim 2008). In general, achieving intended results for specific constituencies are direct outcomes, producing results for entire sectors are intermediate outcomes, and achieving specific targets for the entire society or economy are end outcomes.

The development of trust between citizens and government is the third dimension for examining the public value of e-government (Kearns 2004; Heeks 2008). It can be assessed from the perspectives of (a) security and privacy of citizens' information (Kearns 2004; Carter and Belanger 2005), (b) transparency of e-government services (Golubeva 2007; Undheim and Blakemore 2007), (c) trust of citizens in e-government services (Kearns 2004; Heeks 2008), and (d) participation of citizens in public discussions. The security and privacy of citizens' information in using e-government services refers to the extent to which the government securely manages citizens' personal information. This is often reflected by individual organizations' readiness to secure citizens' personal information and development of effective law and regulations with respect to the use of e-government. The transparency of e-government refers to the extent to which an organization reveals work, processes and procedures (Wong and Welch 2004). A transparent government discloses its performance information timely. The public trust in e-government services is measured by the citizens' perceptions about the e-government services delivered by the public organization. The participation of citizens in government is demonstrated through the active involvement of citizens in the public decision making process through online consultation services with the use of web tools such as online forums, blogs, community networks, and newsgroups.

The effectiveness of public organizations is a key indication of public value created through e-government. This is measured by efficiency, accountability, and citizens' perceptions about public organizations (Moore 1995). E-

government is used to improve the public services by cutting processing cost, managing performance, and making strategic connections between and among government agencies (Heeks 2008). All these activities save public money. In this context, the efficiency of public organization is determined by the financial return of investment (eGEP 2006). Accountability refers to the “answerability of government to public on its performance” (Wong and Welch 2004). In e-government, accountability is reflected by the number of public agencies publishing online full organizational charts and the contact information. The perceptions of citizens’ on a public organization where e-government initiatives are implemented are found by the number of citizens who have positive or negative opinion about the e-enabled public organizations. Table 1 summarises the discussion above.

Table 1. A description of the proposed conceptual framework

Dimension	Attributes	Description
Delivery of Public Services	Information	Availability of information for citizens through e-government
	Importance	Importance of the information to the citizens
	Choice	Availability of e-government channels to access public services
	Fairness	Fairness of e-government service delivery
	Cost Savings	Cost savings for citizens using e-government services
	Take-up	Use of e-government services
	Citizens’ Satisfaction	Citizens’ satisfaction with e-government services
Achievement of Outcomes	Direct Outcomes	Achievement of socially desirable outcomes for specific constituencies through e-government
	Intermediate Outcomes	Achievement of socially desirable outcomes for a entire sector through e-government
	End Outcomes	Achievement of socially desirable outcomes for entire society or economy through e-government
Development of Trust	Security and Privacy	To what extent government secure public information and privacy of citizens through e-government
	Transparency	To what extent public organizations disclose their work, decision making processes and procedures through e-government
	Trust	Public’s trust for e-government services
	Participation	The number of people using e-government services for contributing to better governance
Effectiveness of public organizations	Efficiency	The improved return on investment in public organizations
	Accountability	The number of public agencies publishing online information
	Citizens’ Perceptions	Citizens’ opinions about a public organization where e-government initiatives are implemented

## EVALUATING THE PUBLIC VALUE OF E-GOVERNMENT IN SRI LANKA

This section presents an empirical study to demonstrate the applicability of the proposed conceptual framework in evaluating the public value of e-government based on a case study in Sri Lanka. The study focuses on two key research questions including (a) what is the public value created through e-government initiatives? and (b) how well do the e-government initiatives deliver public value in Sri Lanka?. The study uses the data from several comprehensive national surveys including ‘ICT penetration into households’ (Satharasinghe 2007), ‘government ICT usage survey’ (ICTA 2008a), ‘government organizations visitors survey’ (ICTA 2008b) and other statistics produced by respective government agencies such as Statistical Survey Department and Telecommunication Regulatory Commission of Sri Lanka (TRCSL 2007).

### **Delivery of Public Services**

To examine the public value of e-government in Sri Lanka, the public value created through the delivery of public services is considered. An examination of the level of information provided through e-government reveals that in Sri Lanka, 65% central government ministries, 78% departments and 60% statutory boards provide static information through their websites (ICTA 2008a). A majority of these websites provide some general information about their organizations such as an overview of the services provided to citizens, organizational history, their functional details, establishment details, contact information, news and events, and so forth. Furthermore, a few organizations provide valuable information such as train timetables, daily crop prices, trilingual glossaries, up to date agriculture information and so forth which cannot be accessed by the citizens previously without visiting the respective public organizations.

The information provided through e-services in Sri Lanka, however, is insignificant. In the e-Sri Lanka roadmap several e-services were identified. They are, (a) e-services which create benefits to the people who are seeking jobs locally and overseas (e-employment), (b) initiatives to develop a high responsive pension application processing system for respective stakeholders, (c) e-motoring project that aims at maintaining motor vehicle registration, issuing driver's licenses and vehicle ownership transfers etc, (d) another service to issue national identity cards for citizens, and (e) development of population and land databases. Although, these initiatives have been proposed these projects were still at the initial stages of development at the time (early 2009) of this study. As a consequence, the citizens in Sri Lanka have not yet had the opportunity of enjoying the full benefits of e-services. For the time being, nearly 15% central government ministries and 15% departments provide simple e-services such as allowing citizens to submit quarries, searching databases and so forth (ICTA 2008a). In addition, about 38% of government ministries and 39% of government departments provide downloadable applications. The fact that a majority of government agencies do not have a web presence (56%), a majority of websites are not mature enough to provide e-services (85% do not provide e-services) and the delay in implementing major e-services imply that the full potential of e-government has not fully materialised in Sri Lanka .

Examining the implemented e-government service channels show that the choices offered to citizens in Sri Lanka are confined to websites, call-centre, counter services and a few mobile applications. Only 35% of government agencies have websites. In Sri Lanka, the most used channel is the website (47.6% users). This is followed by the call centre services which records 46.6% users (ICTA 2008b). The purpose of the call centre is to respond to the general inquires of citizens such as how to get services from the public sector, which government agency should be contacted, which documents should be filled and so forth. It operates from Monday to Saturday from 8.00 am to 8.00 pm and nearly 2500 calls are received per day, 85% of which are successfully responded. A further investigation of the counter services reveals that none of those services use customer relationship management software. In addition to these initiatives the government has already established approximately 600 Nanasala centres (Kiosks/tele-centres) in rural and semi-urban areas to provide resources to access e-government services.

The fairness of e-government services delivery is also investigated to measure the public value. Sri Lanka is home to multiple ethnic groups and the majority of them communicate in and understand local languages. In order to meet the challenge government organizations disseminate information in local languages. 13% government websites and the call centre responds in all local languages (ICTA 2008b). However, an examination of the accessibility of government websites reveals that none of websites comply with accessibility standards.

In Sri Lanka, a majority of the citizens in rural communities are under the poverty line. To address this issue, the e-Sri Lanka program has taken several initiatives including (a) a tele-centre development program (Nenasala centres) which has a poverty alleviation strategy in addition to the provision of access to e-government services for an affordable fee, (b) e-society services which address the needs of most vulnerable communities, (c) a program strategy to improve the IT literacy of citizens, (d) implementation of rural telecommunication network (RTN) which promises affordable information infrastructure throughout the country to ensure any time any where access to e-services are some initiatives. However, the delay in implementing RTN project has resulted in the rural communities being still unable to access e-government services for an affordable price.

The cost savings for citizens using e-government services is an issue of concern in Sri Lanka. As major e-government projects (both e-services and infrastructure development projects-RTN) have not been implemented so far and therefore, not much direct cost saving can be found for citizens through e-government service delivery so far. However, the government websites and the call centre services, and e-society applications leads to indirect cost saving for citizens. Further studies should be done to examine cost saving through e-government.

The take-up of e-government services in Sri Lanka is very low. Only 22.3% citizens are aware of available e-government services. Among them 47.3% obtain information from websites, 46.6% use call centre services,

7.5% make inquiry via emails, and 6.0% uses online application (ICTA, 2008b). The level of citizens' satisfaction on the available e-government services, however, is very high. Although the availability of e-services and level of information provided to the citizens are inadequate, nearly 70% citizens (among the users) are satisfied with services offered (mainly the simple e-services, websites, and call centre services) so far.

### **Achievement of Socially Desirable Outcomes**

Achieving socially desirable outcomes has always been a major objective of e-Sri Lanka program. With the implementation of e-government initiatives, three important end outcomes have been achieved through Nanasala centres. As an example for end outcome, nearly 41% of Nanasala users claim that they found jobs as a result of computer training provided in the centres and 26% users found jobs by using the internet facility available at the centres. Furthermore, 31% centre operators believe the Nanasala centres help them improve their existing business or develop new business opportunities (ICTA 2008c).

### **Development of Trust**

The development of public trust in e-government is crucial to the creation of public value in e-government. The empirical study shows that Sri Lanka has developed a legal and regulatory framework to support e-government initiatives. These initiatives include laws and regulations relating to privacy, cyber security, ICT crimes, data protection, electronic transactions, and intellectual property rights protection. ICT legal training programs are provided. In addition, an ICT policy for government has specified the necessary steps to be taken by individual government agencies to protect public information. An examination of public organizations' readiness to protect public information reveals that only 13% of government agencies have file servers with installed security software. 71% of government organizations have desktops with security software. 13% have a proxy server with a security system installed. 6% have a web server installed with a security system. Although the government has created the legal and regulatory environment for protecting public information, the reality at the institutional level is totally different. For example, nearly 32% of ministries, 10% of departments, and 10% of statutory boards reported to have had unauthorized access to information. 32% ministries, 29% departments and, 25% statutory boards have problems of loss of data (ICTA 2008a). These security loopholes certainly damage the public trust in e-government initiatives. The Sri Lanka government is currently taking necessary steps to migrate the existing unsecured infrastructures to a secured government wide network. A government owned Certificate Authority is also planned to be established to develop the public trust in e-government.

The implementation of e-government initiatives in Sri Lanka seems to have insignificant impacts on the transparency of public services. For example, only the Department of Pension's website provides citizens with online process and transactional traceability facilities. The other websites have not offered such facilities. A further investigation reveals that only a few organizations disclose their budget and expenditure online.

The participation of citizens in public discussion through e-government is very limited in Sri Lanka. An examination of e-government services in Sri Lanka reveals that most of the government websites in Sri Lanka are at the 'e-information' stage, which means that their services are limited to the dissemination of information only. The web tools required for 'e-consultation' services and 'e-decision making' do not appear on government websites. Due to these reasons, citizens are prevented from engaging in public discussions online. This is also reflected from the UN's e-participation index where Sri Lanka is ranked at the 116th position (UNDESA 2008).

### **Effectiveness of the Public Organizations**

Sri Lanka implemented the e-Sri Lanka program for improving the effectiveness of its public organizations. The main e-government projects, however, have not been implemented entirely. As a result, the usage of ICT in public organizations is limited to website development and maintenance, and use of some small-scale client-server applications. It is then plausible that public organizations have not gained significant savings through e-government. A significant progress, however, can be observed in the development of information infrastructure in public organizations. The Lanka Government Network which is an inter-government network connecting more than 200 government agencies is such an initiative. This network is to provide infrastructure for public agencies to run their future e-government applications and to make inter-agency communication possible. With its implementation, government agencies save a significant cost through using VOIP phones to communicate with other agencies. However, further studies need to be done to determine cost saving from e-government.

Examining the accountability of e-government services reveals that a majority of government organizations published their organization's chart online with the contact information of top level executives. However, the contact information of case handling officers who directly interact with citizens in day to day activities is missing in the websites. Thus, accountability of case handling officers is not reflected through the web.



An examination of the citizens' perceptions of public organizations reveals that about 62% citizens believe that public organizations are inefficient. Although the government has taken various actions to transform the public sector organizations so that they provide accountable, transparent, and efficient public services, the unavailability of e-government services still prevents citizens from enjoying the benefits of e-government. This is reflected through citizens' satisfaction about public sector organizations. Table 2 summarizes the empirical study findings.

## CONCLUSION

This paper presents a conceptual framework for evaluating the public value of e-government. The proposed framework is then applied for evaluating the public value of the e-Sri Lanka program for demonstrating its applicability. The result shows that the public value of the e-Sri Lanka program is far from satisfactory due to the weaknesses in both the supply and demand sides of e-government. Lack of e-services, low ICT usage in government and low uptake of available e-government services are the indicators of such a poor public value creation. Unimplemented major e-government projects, poor e-readiness, and lack of awareness further contribute to the poor public value. However, some e-government initiatives effectively create public value for citizens. More research is required for examining the contribution of e-Sri Lanka program to achieve the outcomes. Sri Lanka has taken steps to create the legal and regulatory environment necessary to support e-government initiatives. Although government has strengthened the legal and regulatory framework the survey findings reveal that nearly 32% ministries report unauthorized access to the public data.

To enhance the public value creation, the government should accelerate the delayed e-services projects. It is important for the government to take immediate actions to prevent unauthorized access to citizens' data held in public organizations. As the government websites are the most used e-government channel, revamping them in citizen-centric manner would be important. Furthermore, the significant growth in the mobile phone subscribers provides an opportunity for government to explore the possibilities of creating public value by introducing more personalized e-government services accessible via mobile phones. Increasing citizens' awareness about available e-government initiatives is also extremely important. In Sri Lanka, only 22.3% citizens are aware of the government services. E-government initiatives may be unsuccessful if the government is unable to make citizens aware of the value of e-government. In the meantime, investing on e-development activities which can reduce the digital divide among rural populations would significantly improve the public value creation.

Table 2. A summary of the empirical study findings

Dimension	Attributes	Summary of the Findings
Delivery of Public Services	Information	Information provided through e-government services is low and static. Major e- service initiatives are not implemented yet.
	Importance	Value of such information is relatively low for citizens.
	Choice	Multiple choices of access channels are available. About 600 tele-centers have already been established in rural and semi-urban areas.
	Fairness	Trilingual websites and a trilingual call centre have been established. Government websites do not fully comply with accessibility standards. Tele-centers established in rural and semi-urban areas provide access to the e-government services for an affordable fee.
	Cost Savings	No major direct cost saving for citizens by using e-government services due to the incomplete implementation of the e-government initiatives.
	Take-up	Only 22.3% citizens are aware of available e-government services. Among them 47.3% obtain information from websites, 46.6% use call centre services, 7.5% make inquiry via emails, and 6.0% uses online application.
	Citizens' Satisfaction	77% of the users are satisfied with offered e-services.
Achievement of Outcomes	End Outcome	For example, nearly 41% of Nanasala users claim that they found jobs as a result of computer training provided in the centers, 26% users found jobs by using the internet facility available at the centers.

Development of Trust	Security and Privacy	Sri Lanka has established a regulatory framework related to privacy, cyber security, ICT crimes, data protection, and electronic transactions. However, the public information held in an e-government environment is at a risk. 32% ministries, 10% departments, and 10% statutory boards reported unauthorized access to government data. Such threats undermine citizens' trust in public organizations.
	Transparency	Government's transparency is not clearly reflected through websites.
	Trust	Research is needed for examining the citizens' trust in public organizations.
	Participation	Government's readiness to increase the citizens' participation for public discussions through e-government is very low.
Effectiveness of public organizations	Efficiency	Major e-services and e-administration projects have not been implemented entirely.
	Accountability	The accountability of public organizations is not clearly reflected.
	Perceptions	62% citizens believe that e-enabled public organizations are inefficient.

## REFERENCES

- Aldrich, D., Bertot, J.C., and McClure, C.R. 2002. "E-government: Initiatives, Developments and Issues", *Government Information Quarterly* (19), pp 349-55.
- Akman, I., Yazici, A., Mishra, A., and Arifoglu, A. 2005. "E-government: A Global View and An-Empirical Evaluation of Some Attributes of Citizens," *Government Information Quarterly* (22), pp 239-57.
- Bend, J. 2004. "Public Value and e-Health", Institute of Public Policy Research, London, UK.
- Benington, J. 2009. "Creating the Public in Order to Create Public Value?", *International Journal of Public Administration*, 32:3, pp 232 - 249.
- Bonina, C. M., and Cordella, A. 2008. "The New Public Management, e-Government and the Notion of Public Value: Lessons from Mexico," Proceedings of SIG GlobDev's First Annual Workshop, Paris, France December 13, 2008.
- Carter, L., and Belanger, F. 2005. "The Utilization of e-Government Services: Citizen Trust, Innovation and Acceptance Factors," *Info Systems Journal* (2005:15), pp 5-25.
- Castelnuovo, W., and Simonetta, M. 2007. "The Public Value Evaluation of e-Government Policies," *The Electronic Journal of Information System Evaluation*, (11:2), pp 61-72.
- Codagnone, C., and Undheim, T.A. 2008. "Benchmarking e-Government: Tools Theory and Practice," *European Journal of e-practice*, (4), August, ISSN: 1988-625X.
- Codagnone, C., and Wimmer, M.A. 2007. "Road Mapping e-Government Research Visions and Measures towards Innovative Governments in 2020", eGovRTD2020 Project Consortium, 2007, Retrieved 30 December, 2008, from <http://www.egovrtd2020.org>.
- Cole, M., and Parston, G. 2006. "Unlocking Public Value: New Model for Achieving High Performance in Public Service Organization," Published by Wiley & Sons, Inc, ISBN-13: 978-0-471-95945-8.
- eGEP. 2006. "Measurement Framework: Final Version, e-Government Economics Project," European Commission, Brussels. Retrieved 30 October, 2008, from <http://www.europa.eu.int/idabc/egovo>.
- Golubeva, A.A. 2007. "Evaluation of Regional Government Portal on the Basis of Public Value Concept: Case Study from Russian Federation," *ACM International Conference Proceeding Series*, Volume 232, pp 394-397.
- Grigg, P., and Mager, C. 2005. "Public Value and Learning and Skills-A Stimulus Paper", Learning and Skills Development Agency, London, UK.
- Grimsley, M., Meehan, A., and Gupta, K.S. 2006. "Evaluation Design of e-Government Projects: A Public Value Perspective", *Proceedings of the Twelfth American Conference on Information Systems, Acapulco, Mexico*.
- Hanna, N. 2007. "From Envisioning to Designing e-Development: The Experience of Sri Lanka", The World Bank, Washington, USA.

- Hanna, N. 2008. "Transforming Government and Empowering Communities: Sri Lankan Experience with e-Development," The World Bank, Washington, USA.
- Heeks, R. 2008. "Benchmarking e-Government: Improving the National and International Measurement Evaluation and Comparison of e-Government," Edited by, Irani, Z., and Love. 2008, "Evaluation of Information Systems," Published by Butterworth-Heinemann, ISBN: 978-0-75-068587-0.
- Horan, T.A., and Abhichandani, T. 2006. "Evaluating User Satisfaction in an E-Government Initiative: Results of Structural Equation Modelling and Focus Group Discussion," *Journal of Information Technology Management*, XVII, Number 4, 2006.
- IANIS. 2007. "Guide to Regional Good Practice e-Government," Innovative Actions Network for the Information Society Secretariat, Brussels, Belgium.
- ICTA. 2005. "E-Sri Lanka," Information Communication Technology Agency of Sri Lanka, Colombo, Sri Lanka. Retrieved 18 August, 2008, from <http://www.icta.lk>.
- ICTA. 2008a. "Government ICT Usage Survey," Information Communication Technology Agency of Sri Lanka, Colombo. Retrieved 2 September, 2008, from <http://www.icta.lk/>.
- ICTA. 2008b. "Government Organizations Visitors Survey," ICT Agency of Sri Lanka, Colombo, Sri Lanka, Retrieved 10 September, 2008, from <http://www.icta.lk/>.
- ICTA. 2008c. "Nenasala Interim Survey," ICT Agency of Sri Lanka, Colombo, Sri Lanka. Retrieved 5 May, 2009, from <http://www.nenasala.lk/>.
- Jaeger, P.T., and Thompson, K.M. 2003. "E-government Around the World: Lessons, Challenges, and Future Directions," *Government Information Quarterly*, (20), pp 389-94.
- Karunasena, K., and Deng, H. 2009. "Public Value of e-Government: A Case Study from Sri Lanka," *Proceedings of the Web Information Systems and Mining & the International Conference on Artificial Intelligence and Computational Intelligence (2009)*, November 7-8, Shanghai, China.
- Kearns, I. 2004. "Public Value and e-Government," Institute of Public Policy Research, London. Retrieved 8 September, 2008, from <https://www.ippr.org>.
- Kelly, G., Mulgan, G., and Muers, S. 2002. "Creating Public Value: An Analytical Framework for Public Service Reform," Cabinet office, UK. Retrieved 15 October, 2008, from <http://www.cabinetoffice.gov.uk>.
- Moore, M.H. 1995. "Creating Public Value: Strategic Management in Government," Harvard University Press, London, England. ISBN 0-674-17557-3.
- O'Flynn, J. 2007. "From New Public Management to Public Value: Paradigmatic Change and Managerial Implications," *Australian Journal of Public Administration*, (66:3), pp 353-366.
- Sarmad, A., Alahmary, A., and Alalwany, H. 2007. "E-government Evaluation Factors: Citizen's Perspective," *Proceedings of European and Mediterranean Conference on Information Systems -2007*, Polytechnic University of Valencia, Spain.
- Satharasinghe, A. 2007. "Census Department Measures ICT Penetration Into Households," Department of Census and Statistics - Sri Lanka, Colombo, Sri Lanka, Retrieved 20 August, 2008, from <http://www.statistics.gov.lk/>.
- Talbot, C. 2008. "Measuring Public Value : A Competing Values Approach: A Paper for The Work Foundation," Herbert Simon Institute, Manchester Business School, UK.
- TRCSL. 2007. "Statistical Overview," Telecommunication Regularly Commission of Sri Lanka, Retrieved 20 August, 2008, from <http://www.trc.gov.lk/pdf/statover1.pdf>.
- Try, D., and Radnor, Z. 2007. "Developing an Understanding of Results-based Management through Public value theory," *International Journal of Public Sector Management*, (20:7), 2007, pp 655-673.
- UNDESA. 2003. "World Public Sector Report 2003: E-Government at Cross Road - Global E-Government Survey," Department of Economic and Social Affairs, United Nations, New York.
- UNDESA. 2008. "UN E-Government Survey 2008: From e-Government to Connected Governance," Department of Economic and Social Affairs, United Nations, New York.
- Undheim, T.A., and Blakemore, M. 2007. "A Handbook for Citizen-Centric e-Government," E-government Unit, European Commission.

UNDP. 2007. "Human Development Reports," United Nations Development Program, Retrieved 19 August, 2008, from <http://hdrstats.undp.org/buildtables/#>.

Wimmer, M.A. 2007. "Road Mapping e-Government Research Visions and Measures towards Innovative Governments in 2020," eGovRTD2020 Project Consortium 2007, Retrieved 19 March, 2008, from <http://www.egovrtd2020.org>.

Wong, W., and Welch, E. 2004. "Does E-government Promote Accountability? A Comprehensive Analysis of Website Openness and Government Accountability," *An International Journal of Policy Administration, and Institutions*, Volume 17, Issue 2, pp 275-297.

Yu, C. 2008. "Building a Value-Centric e-Government Service Framework Based on a Business Model Perspective," Springer Berlin/ Heidelberg Publisher.

#### **COPYRIGHT**

Kanishka Karunasena and Hepu Deng © 2008. The authors assign to ACIS and educational and non-profit institutions a non-exclusive licence to use this document for personal use and in courses of instruction provided that the article is used in full and this copyright statement is reproduced. The authors also grant a non-exclusive licence to ACIS to publish this document in full in the Conference Papers and Proceedings. Those documents may be published on the World Wide Web, CD-ROM, in printed form, and on mirror sites on the World Wide Web. Any other usage is prohibited without the express permission of the authors.