Evaluating Methodologies of Financial Cost and Benefit Aspects of E–Government

Ephrem Eyob
Virginia State University, USA

INTRODUCTION

The purpose of this article is to survey the financial cost and benefit of e-government and the evaluation methods utilized in the implementation of information technology (IT) projects in general, and e-government projects in specific.

BACKGROUND

Evaluation methodologies typically are grouped by "… relevance, effectiveness efficiency, and internal functioning," (Van Giles, 2002). Cost-benefit rationalization is one of the key factors used in whether to implement e-government projects particularly when more advanced features of e-government that use transactional and integration aspects of governmental functions are the deliverable goals. Frequently, IT cost exceeds initial estimate (Jeffery, 2004; Sassone, 1988). IT benefit are hyped, cost underestimated, and the purported efficiency never materialize. Financial analyses are the main tools used to analyze capital expenditure including IT related investment (Sassone, 1988). However, the limitations of these kinds of analyses are that the cost is realized instantly and the intangible benefit is realized later or not at all. Nevertheless, rarely do most IS managers doubt that their projects are financially and strategically needed for their organizations. The conundrums most e-government project managers face is convincing top management the absolute necessity of their projects by providing strong rationale for IT investment, and estimating an acceptable return on investment (Jeffery, 2004).

Another problem with assessing IT investments for e-government is the productivity/information paradox (Thorp, 2003). This phenomenon is observed when assessment of IT benefit becomes confounded due to the interactions of many factors both tangible and intangible benefits. The government agency in question, in most instances, is unable to identify the productivity gains due to IT investments related to e-government. Dedrick, Gurbaxaui, and Kremer (2003) review clearly refutes the productivity/information paradox:

At both the firm and the country level, greater investment in IT is associated with greater productivity growth. At the firm level, the review further concludes that the wide range of performance IT investments among different organizations can be explained by complementary investments in organizational capital such as decentralized decision making systems, job training and business process redesign.

Investment in IT is not only for process automation but also an enabler for reengineering organizational processes, for example, functional integration systems such as enterprise resource planning (ERP) systems (Dedrick et al., 2003; Jeffery & Leliveld, 2004). Well integrated ERP for an e-government application can result in more productivity gains than gains warranted by automation only.

THE STRUCTURE OF THE ARTICLE

The article surveys some of the methodologies used to access the cost of e-government and assessment of benefit due to capital expenditure in system hardware, software, and related telecommunication outlays for fast inter connectivity. Various approaches to measure e-government related cost vs. benefit will be surveyed. Each method's advantages and disadvantages will be briefly elaborated in their respective sections.

ASSESSMENT METHODOLOGIES

Accurate measurements on the return of investment in e-government require accurate accounting of input, output, and processes. Measurement accuracy is critical to the usefulness of the IT assessment (Dedrick et al., 2003; Jeffery, 2004). What makes an effective e-government? An effective government should at least include the following attributes (Bannen, 2001):

- Should be able to reduce transaction processes both in cost and time
- The customers or clientele are keenly interested in IT and are heavy users of e-government services

- User friendly, fast, accurate access of information, and low cost of internet services subsided by various government agencies
- Confidentiality of information collected with secure transactions
- Cost sharing of providing e-services between the users and the government agencies
- Reengineering the government process for better effective services
- Innovation in newer service delivery processes
- Conduct a pilot e-government system project before launching a full blown system and learn from the experiences
- Using a short time frame to make e-government project operational
- Providing a strategic leadership to change the culture of government operations through e-government

The constant innovations and emulations of best practices in service delivery are rendering technology focused strategic solutions to real problems both in the private and public sectors. Public sector reform is not an end itself. Rather it is a means of transforming the public sector from a bureaucratic paradigm process to a mean and lean process enabled by information technology. In order to reform the public sector successfully for a technology-enabled process, the following three themes are invariably present (Sassone, 1988):

- Transparency and accountability to the public
- Ubiquitous service on demand
- Return on investment should be realizable in a short period of time to add value to the taxpayers

The remainder of the article shall review the literature of tools to measure the cost-benefit and effectiveness of technology enabled processes by e-government. These tools are by no means the only ones available but for the purpose of this article are: (1) balanced scorecard (BSC), (2) DMR result chain, (3) cost-benefit analysis, (4) cost effectiveness analysis, (5) e-government effectiveness, (6) information measurement multi-criteria (IMM), and (7) e-government benchmarking.

THE BALANCED SCORECARD FRAMEWORK

The impact of e-government on efficiency and effectiveness can be assessed by the balanced scorecard (BSC). BSC is a specific performance measurement system applicable to a specific predefined domain (Norton, 2002; Volker, Rakich, & French, 2001). It is based on

organization's strategy and goes beyond financial metrics to assess e-government achievements. Volker et al. (2001) described the BSC framework as follows:

It is a holistic methodology that converts an organization's vision and strategy into a comprehensive set of linked performance and action measures that provide the basis for successful strategic measurement and management.

BSC was first suggested in the early 1990s (Kaplan & Norton, (1992). It was quickly adopted and widely used for performance measurement for the private sector. It is a framework to assess performance, for example, a system such as e-government and benchmark the benefit gained against the status-quo processes before launching the system. It is an all eclectic methods that do not focus solely on financial metrics, where financial measurements invariably focus on past performance and have limited usefulness to forecast future performances. Hence it could be argued, focusing solely on financial metrics is not a robust predictor of the strategic direction of the organization. BSC, on the other hand, according to Volker et al. (2001, p. 16) it provides:

… an enterprise view of an organization's performance by integrating financial measures with other key performance indicators around customers' perspectives, internal business processes, and organization's growth, learning, and innovation.

BSC is designed to assess performance in four key areas and is a good candidate to assess the performance of e-government system:

- Financial scorecard
- Customer satisfaction
- Internal perspective
- Learning and innovation

Government that embark on e-government planning should develop an integrated balance score card to measure its efficiency and effectiveness. Before launching BSC, the management should go through several common phases: mobilization of all stakeholders, design and rollout, and sustainable execution of the strategy by involving key personnel. Best practices of transformation of organization requires issues of leadership, culture, and team work (Norton, 2002). The advantages of utilizing BSC in a quest to plan and implement e-government should be based on whether the new system satisfies the diverging needs of various stakeholders. The stakeholder could be residents, taxpayers, government employees, policy makers, elected officials, regulators, vendors, and other gov-

4 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/evaluating-methodologies-financial-cost-benefit/11593

Related Content

Internetworked Social Movements and the Promise of Politics: A Case Study of the 15M Movement
Julen Figueras (2015). *Promoting Social Change and Democracy through Information Technology (pp. 116-139).*
www.irma-international.org/chapter/internetworked-social-movements-and-the-promise-of-politics/134256

AJAX in Development of Web-Based Architecture for Implementation of E-Governance
Dilip Kumar Sharma, Gopalji Varshneyaand Ashwani Kumar Upadhyay (2007). *International Journal of Electronic Government Research (pp. 40-53).*
www.irma-international.org/article/ajax-development-web-based-architecture/2034

A Profile of Scholarly Community Contributing to the International Journal of Electronic Government Research
Yogesh K. Dwivediand Vishanth Weerakkody (2012). *Technology Enabled Transformation of the Public Sector: Advances in E-Government (pp. 301-311).*
www.irma-international.org/chapter/profile-scholarly-community-contributing-international/66561

E-Government Services Adoption: The Important Elements of Trust and Transparency
Isaac Kofi Mensah (2018). *International Journal of Electronic Government Research (pp. 12-31).*
www.irma-international.org/article/e-government-services-adoption/220472

The Role of E-Government in Rebuilding Bosnia-Herzegovina
Meliha Handzic (2008). *Electronic Government: Concepts, Methodologies, Tools, and Applications (pp. 1206-1212).*
www.irma-international.org/chapter/role-government-rebuilding-bosnia-herzegovina/9775