Chapter 9
An Evaluation Framework to Assess E-Government Systems

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ABSTRACT [1]

Evaluating e-government systems is a difficult task involving multi-faceted perspectives. Although a review of the literature discovers several e-government evaluation frameworks, numerous shortcomings still exist. The objective of this chapter is to propose a formative and holistic framework to remedy the current research gaps. The formative position of the evaluation framework ensures the evaluation objective achievement, and the holistic approach ensures completeness and continuity of the evaluation process. The framework can be used as a template for researchers and practitioners to assess e-government projects. The authors demonstrate the applicability and practicability of the framework by applying it to the Korean Government-for-Citizen (G4C) project.

INTRODUCTION

Many countries adopt e-government systems in order to establish government reforms and raise efficiency of government transactions. In developing and developed countries, investment in e-government systems is estimated to be greater than 1% of the gross domestic products (Petricek et al., 2006). However, current empirical validation is not enough to determine the effects of e-government systems on governmental performance (Lim and Tang, 2008). Research shows that evaluation of information systems (IS) in general is a difficult undertaking (Jones and Hughes, 2001; Serafeimidis and Smithson, 2000). In addition, the evaluation process has to address multiple perspectives that complicate enumerating the benefits of the IS (Symons and Walsham, 1988). Evaluation of an e-government system is

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no exception since determining the benefits of an e-government system is complicated and multi-faceted involving myriad perspectives (i.e. social, technical, political) (Beynon-Davies, 2005; Liu et al., 2004; Khalifa et al., 2004). Evaluation also entails the exploration of the diverse needs of the different citizen groups (e.g., students, lawyers, architects) (Jansen, 2005).

Farbey et al. (1993) claim that IS evaluation is a critical factor to IS success and the choice of an IS evaluation approach should reflect the right organizational context. Funilkul et al. (2006) defined the evaluation framework for e-Government services as "the comprehensive guidance for a government organization which can be used to develop the quality and efficiency of the objectives and strategies of its services and for conforming to citizens' requirements". Furthermore, there are many approaches that are designed to evaluate e-government. While some approaches are called "hard" approaches (e.g., return on investment, payback period, etc.) others may be postulated as "soft" (e.g., satisfaction of employees and citizen, degree of customization). Hard approaches address tangible benefits and risks while soft approaches are proposed to assess intangible benefits and risks. Evaluating e-government systems (and IS, in general) based on hard approaches that depend on tangible measures is the more commonly adopted evaluation basis in many countries. Hard approaches are not without drawbacks. Some of these drawbacks are - the limited view of stakeholders, the complete dependence on accounting and financial instruments (Farbey et al., 1995), the ignorance of human and organizational aspects of the users (Serafeimidis and Smithson, 2000), and the failure to include the intangible benefits and costs associated with its use (Hochstrasser, 1992).

There is no IS evaluation approach that is suitable for every firm (Khalifa et al., 2004). Furthermore, evaluation approaches that combine both hard and soft facets are limited (Orange et al., 2006). Borrowing from the body of IS literature may be pragmatic, but challenging, as IS researchers still debate actively about the approach most suitable for IS domain (Alshawy and Alalwany, 2009). Many studies acknowledge that evaluation of e-government is an important research area that needs more investigation (Fountain, 2003; Jones et al., 2006; Remenyi et al., 2000). A holistic evaluation approach is necessary to determine the needs of citizens and businesses, and to help government and private firms measure the return on investment of e-government (Sakowicz, 2006).

Funilkul et al. (2006) summarize the purposes of the evaluation of e-government services. The first and foremost is to ensure that e-government services meet the institution's institutional goals and objectives. This type of a formative evaluation (i.e. evaluation by achieving systems objectives), although widely accepted, is rarely deployed in e-government studies (Hamilton and Chervany, 1981; Bertot et al., 2008). Formative evaluation is continuously monitoring for the systems activities and the objectives. Bertot et al. (2008) define formative evaluation as the "ongoing evaluation that monitors program activities with the goal of modifying and improving the program on a regular basis". An incessant evaluation process is crucial to enhance e-government services. We propose formative evaluation as one necessary pillar in the framework suggested in this paper.

Although the literature identifies several e-government evaluation frameworks, numerous shortcomings exist in the prior work. First, some frameworks focus on a few selected dimensions of e-government (e.g., citizen services, awareness initiatives, IT collaboration) and pay less attention to other dimensions (e.g., mobilization, standard setting). These studies design the evaluation framework based on the technical perspective and focus less on the social perspective. Second, many frameworks are designed to evaluate specific e-government systems in specific countries. These frameworks are usually unique to the county context and may not be applicable in a different setting. Third, the continuous achievement of e-government objectives, or formative evaluation, is