Chapter 23
A Methodology to Evaluate ICT Platforms in the Implementation of e-Government

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ABSTRACT

In this chapter, a Total Cost of Ownership (TCO) model is proposed to be used by the agencies of the Chilean public sector when evaluating alternatives for the implementation of e-government. This TCO model is used to compare the pros and cons of solutions that require high levels of investment at start up and low long-term operations expenditures against solutions that require lower start up investments and higher operational costs. It considers all the associated costs and investments of a candidate technological solution, under an integral assessment approach. This work shows how to gather all the information that is required to analyze and determinate the feasibility of a migration project. Since e-government projects are primarily driven by the goal of delivering better services to citizens, it is recommended to deal with these projects case-by-case and to take into account the quality of the resulting service to citizen, before deciding about their viability.

INTRODUCTION

Evaluation of electronic government (e-gov) is necessary but approaches are not standard (Ray, 2010). Choice of an evaluation method would depend on what aspect of e-gov we want to evaluate (Gupta, Bhattacharya & Agarwal, 2010). Consequently, there is a wide range of assessment tools for use in e-gov policy process. One kind of these tools provides concrete support for the strategy and policy making process, including various conventional strategic planning tools and techniques, such as Balanced Scorecard (BSC) (Kaplan & Norton, 1996), analysis of Strengths, Weaknesses, Opportunities, and Threats (SWOT) (Hill & Westbrook, 1997), and analysis of Political, Economic, Social, and Technological factors of the macro-environment (PEST, 2007).

Furthermore, when attempting to identify and assess e-gov readiness we have several strategic tools at disposal. Among these, some well known indexes are UN Global E-gov Readiness Index Rank and e-readiness Economist Intelligence Unit (As-Saber, Hossain & Srivastava, 2007). Other tools are designed to identify and contextualize the strategic aspects of e-gov development, such as Critical Success Factor (CSF) (Rockart, 1986), and best practice, roadmap, benchmarking and maturity methods (Layne & Lee, 2001). Valdés et al. (2011) show an e-gov maturity model to measure public agencies readiness to manage and implement e-gov. The proposed maturity model allows evaluating a public agency against the best international practices in the area of e-gov, including formulation of organizational strategies, management of Information and Communication Technologies (ICT), operative management, and capabilities of the organization and its human resources. It also proposes concrete roadmaps for capability improvement, i.e. directives about where the organization financial and human resources should be canalized to improve its capability to carry out e-gov initiatives.

On a more technical perspective, there are several evaluation methods that can be applied to web sites, service delivery, and the performance of e-gov. Conventional web site evaluation can be used to assess aspects of government web sites such as user interface, navigation, content, and other technical aspects (Donker-Kuijer, de Jong & Lentz, 2010; de Jong & Lentz, 2006). Web site evaluation is just a visible face of e-gov, so broader evaluations are needed to describe related services in e-gov, and e-gov development.

Also, there are various kinds of impact and risk analyses tools to identify the risks of e-gov investments, and their impact on humans and on the environment, but according to Kertesz (2003) risk analysis may jeopardize the success of a project or achieving a goal.

An interesting group of techniques include cost and resource assessments, such as Cost-Benefit Analysis (CBA) (Glazer, Kanniainen & Niskanen, 2002); Return On Investment (ROI) (Cresswell, Burke & Pardo, 2006); and Total Cost of Ownership (Emigh, 1999; Vital Wave Consulting, 2008).

CBA relates costs to the valuation of benefits using a common unit of measurement. There have been attempts to examine ICT capital investments (including software) to check whether these investments are justifiable, by calculating the marginal benefits and costs of ICT related investments (Shinjo & Zhang, 2003). ICT infrastructure in e-gov is a long-term investment decision and involves a current outlay followed by a series of benefits over the life of the project. There is strong evidence that ICT investment is not meant to cut costs but to achieve better service to citizens and quality (Brynjolfsson & Hitt, 1998).

ROI is a simple way of assessing ICT investment from an economic point of view. ROI is not the primary objective when e-gov projects are conceived, because they are mostly driven to achieve operational efficiency and effectiveness in service delivery. Some benefits related to e-gov, being an intangible organizational resource, are difficult to assess using such objective measures.

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