

# Indicators and Measures of E-Government

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## INTRODUCTION

Although the question of measurement is crucial when defining any concept, little attention has been devoted to a comprehensive view of information and communication technologies (ICTs) applications, spanning qualitative and quantitative assessments.

Due to the lack of a clear definition of e-government, many differences can be noted in the way in which digital policies have been interpreted by academics and practitioners. Coined by the U.S. programme for reinventing government under the Clinton administration (*National Performance Review*), the term e-government refers to a public sector reorganisation which aims at increasing the efficiency of the public administration and reducing its budget through the use of new technologies. In the words of Douglas Holmes (2001), e-government is “the use of information technology, in particular the Internet, to deliver public services in a much more convenient, customer oriented, cost effective and altogether different and better way. It affects an agency’s dealing with citizens, business and other public agencies as well as its internal business processes and employees” (p. 2).

Yet many definitions go beyond the role of e-government in improving the provision of public services. Indeed, the label e-government supports other definitions, not necessarily limited to the computerisation of the public administration (Osborne & Gaebler, 1992). The concept of e-government seems to contain both the redesigning of public services system and a wider transformation of the relationship between private and public actors, so that the restructuring of public administration—influenced by the ideal of a new public management—is combined with the renewal of the democratic decision-making process. Digital policies are presumed to be a key element in improving online service quality and other factors, casting a new role for the citizen-costumer.

At the same time, although e-government is becoming a catch-all concept, from an analytical point of view, official reports produced by international actors show a significant convergence in the way in which this is evaluated and measured. Diffusion of e-government practices are often closely related, and limited, to features of public administration Web sites, with reference to dimensions of openness and interactivity (La Porte, Demchak, & De Jong, 2002). Other

studies focus exclusively on how citizens and businesses *perceive* the quality of public e-service, with reference to customer satisfaction, benefits conceived in terms of value and utility of services offered and opportunity of use as strategic factors for performance efficacy and efficiency (Graafland-Essers & Ettegui, 2003; Stowers, 2004). Only recently a new approach has taken shape, which concentrates more attention on socio-political aspects of the intensive use of new technologies.

## BACKGROUND

It can be assumed that measurement is a relevant component of any form of rational decision-making, acting as a mechanism for improving allocative decisions and technical efficiency (Townley, 2005). However, only recently has performance evaluation become a central part of the activity of the public administration.

The increasing interest in the measurement of government activities goes back to the second half of the 20th century, and is strongly related to the growth of public sector expenditure. It was a product of the more general turn to “planning,” a key element during the period in question (Boivard, 2005). In the 1980s, the introduction of market principles in public bureaucracies, the process of privatisation, the contracting out of public services and their management through performance contracts gave significant momentum to evaluation.

This move toward performance measurement represented one of the most important issues within the dominant management philosophy, which has sought to modernise the public administration over the last two decades in line with the so-called “new public management” (Schedler & Proeller, 2000). In its attempts to render public services more efficient and to downsize government activities, the resulting wave of public sector reforms has focused greater attention on the outcomes of public activity, emphasising output indicators in reporting administrative performance. Although technical devices have often been presented as a “transparent snapshot of activities,” it is clear that they reflect a broader range of political considerations. The importance given to outcomes of government activity has accompanied state restructuring in favour of an increasing market component to public sector delivery.

As part of the “reinventing government” programme, strategic applications of new technologies for the renewal and innovation of public administration has produced several approaches to the evaluation of digital policies. As Jane Fountain (2001) puts it, “applying performance measures is essential to evaluate whether e-government is cost efficient, is serving stakeholders, and is being used effectively by government agencies, staff, citizens, and businesses” (p. 41).

This heightened attention to the question of measurement has led to the conclusion that e-government represents a very complex and multidimensional issue. At a first stage, e-government evaluation concerns the value of ICT investment, that is, the relationship between the costs incurred for the acquisition and introduction of new technologies and the gains made in terms of better management. Indeed, e-government assessments may consider a wide range of variables, including the type of technology, management, as well as organisational and legal issues (Eddowes, 2004; Gupta & Jana, 2003).

Studies on e-government evaluation may present different perspectives: For instance, a clear difference can be noted by comparing *Strategic Value Analysis* method, focusing on organisational issues, and *Cost-Benefit Analysis*, evaluating the impact of public programmes in terms of community well-being. A more articulated idea of performance evaluation is tied to diffusion of the category of governance, which leads to interpret public activity as a negotiated process among private and public actors, rather than a managerial question. Such developments have conducted to look to the social and environmental effects of public action, because it has attempted to measure the consequences of public activity on the whole community of stakeholders rather than on a restricted group of direct service users.

Despite the number of variables effectively involved (Gil-García & Pardo, 2005), official reports, especially at the international level, seem to encounter considerable difficulties in acknowledging this complex framework of e-government evaluation.

## UNPACKING E-GOVERNMENT IN AMERICAN AND EUROPEAN REPORTS

Many efforts have been made to measure the progress and impact of e-government in several countries. The reports produced by international and supranational organisations seem to converge on the following three points:

- The Web site is adopted as the unit of analysis for evaluation of e-government experiences. The way in which information is organised and provided to the citizen-user is considered a key element (Wang, Bretschneider, & Gant, 2005), with specific reference

to the possibility of creating interactive systems.

- The path of e-government development seems to follow pre-established stages. Most e-government evaluation is based on a “stages model,” a metaphor based on organic growth (Lee, 2007, p. 33). In this deterministic view, countries belonging to different geo-political areas are presumed to be similar in the process of e-government implementation.
- Electronic democracy is not distinct from electronic government, because forms of citizenship involvement are fostered as a direct consequence of the process of administrative restructuring (Mayer-Schönberger & Lazer, 2007). It is often argued that participation will occur when a two-way flow of communication between citizens and political institutions is created. Information provision and transaction processing are used to measure governmental responsiveness to citizens’ demands.

Taking such three observations as our point of departure, common elements can be identified in a range of different official documents. A report published by the American Society for Public Administration on behalf of the United Nations, the *Global E-Government Readiness Report* (2005), singles out four goals for electronic government. As outlined in Table 1, the evolutionary relationship between electronic government and electronic democracy is presented through strictly interrelated developmental stages.

The evaluation of digital policies attempts to unify measurement of online services quality and other factors, enabling a participative relationship between citizens and political institutions. An *index of e-readiness* for the performance of public agencies is combined with an *index of e-participation* focusing on citizens’ involvement. The participation framework includes several important dimensions: the quantity and quality of information on programmes, budgets, laws and regulation, and other materials dealing with key issues of public interest; e-consultation tools and procedures that encourage citizen participation in public debates; a decision-making e-process to increase citizen input and feedback about specific government decisions.

The findings of a number of European research projects also support a similar approach, stressing the centrality of e-government within the broader family of digital policies, the weak autonomy of e-democracy and the identification of a developmental pattern. Electronic government is considered an essential premise for future experiments in electronic democracy, as shown particularly at the national level. In a study produced by the European University Institute and the University of Geneva (Trechsel, Kies, Mendez, & Schmitter, 2003), focused on the qualitative analysis of 26 recent national reports, e-government infrastructures are viewed as the foundation for future experiments in e-democracy. These reports aim at evaluating the use of ICTs within European

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