ADVANCES IN MANAGEMANT INFOMATION SYSTEMS

# E-Government

## Information, Technology, and Transformation

Edited by
Hans J. Scholl

ROUTLEDGE

# E-GOVERNMENT
## INFORMATION, TECHNOLOGY, AND TRANSFORMATION

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EDITOR




ADVANCES IN MANAGEMENT INFORMATION SYSTEMS
VLADIMIR ZWASS SERIES EDITOR

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# SERIES EDITOR'S INTRODUCTION

VLADIMIR ZWASS, EDITOR IN CHIEF

Electronic, or digital, government (e-government) is the use of information and communication technologies (ICT) to support government functions and services, and to support citizens in their participation in political processes. The second role is frequently subsumed under the term of e-democracy. The term "e-government" is applied both to the field of practice and to the domain of study. Its specificity with respect to other applications of ICT lies in the values and ends sought and in the success criteria that largely differ from those imposed by the marketplace on business organizations.

This *AMIS* volume places e-government, a field of study shared by several disciplines, within the context of management information systems (MIS). The volume's editor, Hans J. Scholl, a well-known expert on the subject, introduces readers to e-government as the domain of action and multidisciplinary study, a subject he has taken up in some of his extensive research (Scholl, 2007). Along with conceptual papers framing the nature of e-government, several empirical works included in the volume closely exemplify how our field can advance the development of e-government. The editor and several of the authors present an extensive analysis of the state of studies in the domain. As is the case with all of the *AMIS* volumes, the objective is to benchmark and further the development of the subject field of research.

E-government was supported by ICT long before the infusion of the Internet-Web compound. Indeed, the advancing societal complexity of the nineteenth century called forth the technology necessary to manage societal affairs, and the need to control public institutions was at the origins of computing (Beniger, 1986). By the last decade of that century, Herman Hollerith's tabulating equipment, a precursor of modern computer technology, was used by the U.S. Census Bureau. The use of ICT in the public sector has been intensifying since the 1950s, in parallel with the introduction of these technologies and the information systems built around them into business organizations. The emergence of the Web in the early 1990s and the rapid spread of technologies and practices based on it have led to a qualitatively new stage of opportunities in e-government. Only some of these possibilities have been consummated, with many remaining *in potentio*.

There is something approaching a general agreement that ICT should be deployed to transform both the government and governance, that is, decision-making processes, the distribution of decision-making rights, and accountability in the public sector. The e-government transformation would encompass local, regional, and central governments and their agencies, as well as other public sector organizations, such as schools and certain health care institutions. The transformation of international and supranational organizations is envisaged as well. Government services are provided not only to citizens but also to businesses and other organizations. Governments play an immense role in the business sectors of their domains as well as in international business life. The

role varies among countries, yet it always encompasses regulation and its enforcement, taxation, procurement, and an array of services. Process redesign or reengineering, grounded in the concept of cooperative information systems, can vastly increase the effectiveness of these business-facing functions and services (Bertoletti et al., 2005).

The gradual transformation of e-government needs to pursue the essential values of the public sector: societal equity and inclusiveness, safety of the citizenry, productivity, service quality, transparency and accountability, public access, and citizen engagement and participation. The actualization of these values is based technologically on the proper deployment of the appropriate technologies and, especially, interoperability among the systems (i.e., the ability to exchange and integrate information). This facilitates interagency cooperation and prevents a disconnect between the front and back offices. Integration has to be accomplished within the legal framework and with the avoidance of a big-brother-type aggregation of citizens' records. In the international context, interoperability has to be grounded in prolonged harmonization processes, such as the development of international personal identifiers, while preserving the privacy of individuals (Otjacques et al., 2007). Researchers find that e-government practices of various countries "mirror each country's ICT diffusion and government efforts toward political reform" (Lee et al., 2005, p. 104).

The wide global availability and the broad—indeed, moving toward the universal—use of the Internet-Web compound have vastly changed the realm of the possible in e-government. The compound has multiple aspects, which present diverse opportunities in arranging business and other human affairs in novel ways (Zwass, 2003). These opportunities can be taken up in the transformation of governments (Zwass, 2006). As an interactive medium and as a forum, the Web has expanded the Habermasian public sphere, the domain of public debate and action, and the power of citizenry in its relationship with the various levels of government. The means to deliberate, mobilize, amplify, and aggregate individual opinions, evolve public policy, raise funds, and exert pressure are now available to the civil societies of many countries. Yet, the progress in top-down e-democracy, that is, the engagement of citizens in instant polling, interactive policymaking, and the coproduction of policies, fostered by government organizations has been rather modest (Snellen, 2007). However, self-organizing, volunteerism, and organizing by nongovernmental bodies have all played an increasingly significant role in the political processes of numerous countries. For example the role of MoveOn.org in the U.S. political process has been immense. Much research is devoted to these aspects of e-government, as the present volume illustrates. The facilitation of voting, with ultimate mobile access, is being researched holistically. Electronic voting systems are a subject of ongoing research in computer science. A notable systems approach to trustworthy voting that goes well beyond a sole reliance on cryptography is offered in Paul and Tanenbaum (2009).

As a potentially universal marketplace, the Internet-Web compound radically changes the transaction costs of accessing the markets. This enables governments to consider the privatization of certain functions. As one example, some of the states in the United States have been privatizing motor-vehicle licensing functions. The compass of transaction-cost economics is, of course, limited to its disciplinary considerations. In weighing such privatization, governments are mandated to apply broader considerations of citizens' welfare, which include security, equity, and nonperformance risks. Yet citizens also expect productive use of their tax levies.

The success of e-government is being investigated and benchmarked. Evaluation is performed at multiple levels of analysis, some of it on the level of local authorities that are crucial in serving the citizenry (Irani et al., 2005). Process-level evaluation is conducted as well (Crocker et al., 2009). There are many and various measures of progress at the national level, some evolved by scholars, others by international organizations. Several of these are known as

e-government readiness. Going beyond national e-readiness benchmarking, the United Nations e-Government Survey 2008 attempts to measure the actual achievement in both e-government and in e-governance (United Nations, 2008). The antecedents of e-government success show a complicated relationship between citizens' perceptions of the government itself and of the e-government aspects. Thus, the intention to continue using a government's Web portals has been found to be predicated on trust in the government as such, rather than on trust in technology (Teo et al., 2008–9).

The need for "connected governance" supported by ICT is being emphasized (United Nations, 2008). To implement such governmental decision-making processes, the whole-of-government concept has evolved. This is characterized by shared objectives of governmental components and agencies, as opposed to organizational silos. In the citizen-facing actualization of this concept, integrated services would be provided to citizens-clients based on their life-cycle events, such as birth, relocation, or marriage. In the extended version of this concept, private sector organizations would also be included in the portals. This vision of e-government extends the concept of support economy to the public sector (Zuboff and Maxmin, 2002).

The possibilities brought by ever-new technologies and their very low cost are immense. The Web 2.0 technologies, among them wikis, interactive blogs, social networks, and virtual worlds, support active participation, social cooperation, and coordination, and coproduction. E-government accessed by mobile devices provides location independence, access, and convenience not previously available. The emerging Web 3.0, along with the almost vanishing cost of access hardware, free or open software, cloud-based computing facilities, and inexpensive telecommunications place new capabilities in the hands of citizens and in the halls of governments. We are only beginning to tap the possibilities. This *AMIS* volume points out some of the directions.

## REFERENCES


Beniger, J.R. 1986. *The Control Revolution: Technological and Economic Origins of the Information Society.* Cambridge, MA: Harvard University Press.

Bertoletti, M.; Missier, P.; Scannapiego, M.; Aimetti, P.; and Batini, C. 2005. Improving government-to-business relationships through data reconciliation and process reengineering. In R.Y. Wang, E.M. Pierce, S.E. Madnick, and C.W. Fisher, eds., *Information Quality.* Volume 1, *Advances in Management Information Systems,* Armonk, NY: M.E. Sharpe 151–156.

Crocker, T.; Johnson, O.; and King, S. 2009. The suitability of care pathways for integrating processes and information systems in healthcare. *Transforming Government: People, Process and Policy,* 3, 3, 289–301.

Irani, Z.; Love, P.E.D.; Elliman, T.; Jones, S.; and Themistocleous, M. 2005. Evaluating e-government: learning from the experiences of two UK local authorities. *Information Systems Journal,* 15, 1, 61–82.

Lee, S.M.; Tan, X.; and Trimi, S. 2005. Current practices of leading e-government countries. *Communications of the ACM,* 48, 10 (October), 99–104.

Otjacques, B.; Hitzelberger, P.; and Feltz, F. 2007. Interoperability of e-government information systems: issues of identification and data sharing. *Journal of Management Information Systems,* 23, 4 (Spring), 29–51.

Paul, N., and Tanenbaum, A.S. 2009. Trustworthy voting: from machine to system. *Computer,* 42, 5 (May), 23–29.

Scholl, H.J. 2007. Central research questions in e-government, or which trajectory should the study domain take? *Transforming Government: People, Process and Policy,* 1, 1, 67–88.

Snellen, I. 2007. E-government: a challenge for public management. In Ewan Ferlie, Laurence E. Lynn Jr., Laurence E. Lynn, Christopher Pollitt, eds., *The Oxford Handbook for Public Management,* 398–421. Oxford: Oxford University Press.

Teo, T.S.H.; Srivastava, S.C.; and Jiang L. 2008–9. Trust and electronic government success: an empirical study. *Journal of Management Information Systems*, 25, 3 (Winter), 99–131.

Trimi, S., and Sheng, H. 2008. Emerging trends in m-government. *Communications of the ACM*, 51, 5 (May), 53–58.

United Nations. 2008. United Nations e-Government Survey 2008: From E-Government to Connected E-Governance. New York. Available at http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN028607.pdf.

Zuboff, S., and Maxmin, J. 2002. *The Support Economy: Why Corporations Are Failing Individuals and the Next Episode of Capitalism*. New York: Viking.

Zwass, V. 2003. Electronic commerce and organizational innovation: aspects and opportunities. *International Journal of Electronic Commerce*, 7, 3 (Spring), 7–37.

———. 2006. The Web-Internet compound as the infrastructure of digital government. *Business Process Management Journal*, 12, 1, 7–12.

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