Preface

In its formative years, the concept of e-government was typically seen as a new process with unlimited potential in the rapidly expanding global environment. In today's society, processes are no longer new and we find ourselves in the phase of refining and redeveloping the foundation upon which the concept of e-government was first introduced to improve the efficiency and effectiveness of government. If models continue to be improved upon, e-government in our knowledge society will be an open and transparent institution that provides a maximum amount of services as well as limited intrusion into the lives and privacy of its citizens.

E-Government Diffusion, Policy, and Impact: Advanced Issues and Practices, part of the *Advances in Electronic Government Research Book Series*, includes many contributions from researchers covering the important topics in e-government, and is intended to elicit comments, raise concerns and open dialogue as we continue to implement e-government programs in mainstream society. Further, the book responds to e-government's present shortcomings, while exploring a renewed understanding of e-government's visions and responsiveness.

Chapter I, *E-Government Business Models: Theory, Challenges and Research Issues* by Marijn Janssen, Delft University of Technology (The Netherlands) and George Kuk, Nottingham University Business School (UK) defines the concept of business models, which can appear at the individual organization and network level and describe how an entity plans to provide services. The basic premise of business models is that they help to understand the relation between service offering and other elements and can be used as an instrument to improve service provisioning and lowering cost at the same time. This chapter provides an overview of the state-of-the-art of e-government business models and presents a theory integrating the various elements and research challenges and issues.

Chapter II, *Electronic Government: Overview and Issues for National Security Interests* by Roy Ladner and Frederick E. Petry , Stennis Space Center (USA) offers a description of electronic government as it pertains to national security and defense within the Department of Defense (DoD) and Department of Homeland Security (DHS). The authors discuss the adoption of web services and service oriented architectures to aid in information sharing and reduction of Information Technology (IT) costs. They also discuss the networks on which services and resources are being deployed and explain the efforts being made to manage the infrastructure of available services. This paper provides an overview of e-government for national security and defense and provides insight to current initiatives and future directions.

Chapter III, *Towards Civil-Military Coordination During Security, Stabilization, Transition and Reconstruction Efforts* by Ranjeev Mittu, U.S. Naval Research Laboratory (USA), Suleyman Guleyupoglu, ITT Corporation (USA), William Barlow, Office of Secretary of Defense Networks and Information Integration (USA), Michael Dowdy, Femme Comp, Inc. (USA), and Sean McCarthy, Femme Comp, Inc. (USA) describes a conceptual portal called ShareInfoForPeople, which provides advanced Infor-

mation and Communication Technology to enable collaboration, coordination and information sharing across the civil-military boundary during Security, Stabilization, Transition and Reconstruction (SSTR) operations.

Chapter IV, *A Comprehensive Framework Towards Information Sharing Between Government Agencies* by Akhilesh Bajaj, The University of Tulsa (USA) and Sudha Ram, The University of Arizona (USA) explores the different technologies available to share information. Specifically, the authors' framework discusses the data storage mechanisms required to support a Service Oriented Architecture (SOA). The chapter compares XML document, free text search engines, and relational database technologies and analyzes the pros and cons of each approach. These options are explored along the dimensions of information definition, information storage, the access to this information and, finally, the maintenance of shared information.

Chapter V, *E-Government Implementation: Balancing Collaboration and Control in Stakeholder Management* by Eric T.K. Lim, National University of Singapore (Singapore), Chee-Wee Tan, University of British Columbia (Canada), and Shan-Lin Pan, National University of Singapore (Singapore) approaches the topic of e-governance in e-government from the three critical aspects of stakeholder management: (1) identification of stakeholders; (2) recognition of differing interests among stakeholders; and (3) how an organization caters to and furthers these interests. Findings from the case study allow the authors to identify four important groups of stakeholders, who possess vastly different characteristics and varying level of acceptance of and commitment towards the e-filing paradigm. Accordingly, four corresponding management strategies with varying degrees of collaboration and control mechanisms are devised.

Chapter VI, *Electronic Government Implementation: A Comparison Between Developed and Developing Countries* by Yining Chen, Western Kentucky University (USA), H.M. Chen, Shanghai Jiaotong University (China), Russell K.H. Ching, California State University (USA), and Wayne W. Huang, Ohio University (USA) identifies critical success factors of electronic government and proposes an implementation framework. An extensive case study is presented to illustrate how the proposed framework can be used to analyze electronic government strategies in a developed country (United States) and a developing country (China). In conclusion, recommendations are made to developed and developing countries for their implementation of electronic government.

Chapter VII, *Involving Service Professionals in E-Government Innovation: The Case of Finnish Early Childhood Education* by Jonna Järveläinen, Turku School of Economics (Finland), Eija Koskivaara, Turku School of Economics (Finland), Päivi Pihlaja, University of Turku (Finland), Hannu Salmela, Turku School of Economics (Finland), Jarmo Tähkäpää, Turku School of Economics (Finland), Timo Kestilä, Turku School of Economics (Finland), and Jarmo Kinos, University of Turku (Finland) reports the experiences in developing e-government innovations in an early childhood education context in Finland. While e-government is too often understood as transforming paper documents used in public services into electronic documents, the ultimate objective should be to enhance communication and interaction between citizens and public organizations and thus increase the value of public services. This objective cannot be reached without the involvement of service professionals. This research introduces a method for involving service professionals in the process of generating and evaluating alternative ways to incorporate technology in service processes.

Chapter VIII, *Horizontal Process Integration in E-Government: The Perspective of a UK Local Authority* by Jyoti Choudrie, University of Hertfordshire (UK) and Vishanth Weerakkody, Brunel University (UK) examines how horizontal integration between the various departments of a local authority in the United Kingdom (UK) occurs in order to deliver e-services to the citizens in the vicinity. The research question guiding this paper is: What can be learnt about the achievement of horizontal integration between local authorities in the e-government context in order to better deliver e-services to citizens? The

aim of this paper is to extract the "success factors" in government intervention that support horizontal and vertical integration.

Chapter IX, *Online Policy Consultation: A Case Study of Local Government* by Lucas Walsh, Deakin University (Australia) draws from an external evaluation of an Australian local government initiative, Darebin eForum. Conducted in 2007, this evaluation included a survey of e-consultation participants and interviews with Council Officers responsible for moderating the site. The findings provide a snapshot of some of these challenges. Though modest in size and ambition, the experiences of Darebin eForum provide valuable insight into the challenges faced by the government's seeking to use ICTs to engage in dialogue with their constituents.

Chapter X, *Electronic Conduits to Electoral Inclusion in an Atypical Constituency: The Australian Case* by Lisa Hill and Kate Alport, University of Adelaide (Australia) examines the potential for e-technologies to address the problem of political exclusion among some currently excluded groups of voters. The authors canvas known and suspected patterns of such exclusion and, in some cases, suggest possible reasons for it. This chapter reviews the capacity for electronic forms of voting and registration to address: Low voting and registration levels among indigenous Australians; declining registration levels among the young; restricted access to the secret ballot caused by disability; informal voting among minority language speakers and people with low literacy and numeracy competence; low voting participation among people who experience difficulty in attending a polling place on election day and low voting participation among the Australian *diaspora*.

Chapter XI, *Australia Local Government and E-Governance: From Administration to Citizen Participation?* by Kevin O'Toole, Deakin University (Australia) analyses local government's response to the pressure to modernise its structures through its use of Information Communication Technologies (ICT) to execute its broad range of tasks. The chapter begins by discussing Chadwick and May's (2003) three basic models of e-government—managerial, consultative and participatory. Using data collected from an analysis of 658 local government web-sites in Australia together with existing survey research, the chapter then analyses the extent to which local government sites fit into the three models. The chapter concludes with a discussion of the issues and problems faced by local government in its attempt to develop e-governance as an extension of both administrative and democratic functions.

Chapter XII, *Engaging the Community Through E-Democracy in South Australia* by Kate Alport and Clement Macintyre, University of Adelaide (Australia) assesses the spread of Information and Communication Technologies (ICTs) in South Australia. It starts by examining South Australia's leading role in the adoption of democratic reforms in the nineteenth century. The paper draws from an appraisal of Internet based initiatives by government, non-profit, and private agencies and compares these to best practice models for community engagement. Based on this research, the authors conclude that there is little originality and initiative in the formal State Government sites and that there is little designed to foster e-democracy. Existing innovation can be found in more local and specific community based applications of ICT.

Chapter XIII, *Users' Acceptance of E-Government: A Study of Indian Central Excise* by G.P. Sahu, M. N. National Institute of Technology (India) and M. P. Gupta, Indian Institute of Technology Delhi (India) seeks to highlight the key variables affecting the usage of e-government by internal users of Indian Central Excise. An e-government acceptance model is developed and empirically tested using the 163 usable questionnaire responses from internal users of the Indian Central Excise. A priority of the variables is set by calculating the "total effect" of each variable on "intention to use e-government." Further the "total effect" is compared with "Ratio of Acceptance" and clear recommendations for the Central Excise are generated for increasing the usage of e-government among its users. The model developed here can be applied in other similar e-government projects to test the users' intention to accept the system.

Chapter XIV, *A Multi Agent Service Oriented Modeling of E-Government Initiatives* by Tagelsir Mohamed Gasmelseid, King Faisal University (Saudi Arabia) reviews the e-government project in Sudan, whose goal is to build a society based on a strong base of industry knowledge in which all segments of the media have access to information that leads to the distribution, publication and use of information and, in turn, economic growth, increased employment, higher rates and quality of production in all sectors, and poverty eradication. However, the project has been based on the use of a client-server architecture that has many limitations. This paper provides a multiagent service oriented architecture for the implementation of the project based on a thorough review of project documents and implementation reports.

Chapter XV, *A Methodology for Ontological Mediation in Multi-Agent Systems* by Shahram Rahimi, Bidyut Gupta, and Pravab J. Rana, Southern Illinois University (USA) provides an overview of current search and retrieval systems, contending that their effectiveness is restricted because they do not use the semantics of the data but mainly utilize keywords. Multi-agent systems in which agents gather information and organize it, by creating ontologies, are being utilized to improve the performance and quality of the data gathering and integrating systems. Major difficulties that arise during collaboration among such agents are ambiguity and data misinterpretation. This is due to the diversity of ontology creators, differences in linguistics and ontological overlapping. Users may also knowingly or unknowingly add incorrect information to ontologies. Ontological Mediation tries to address such collaboration issues relating to ambiguous and unfamiliar information arising due to various reasons. The authors of this chapter propose a communication based approach for ontological mediation.

Chapter XVI, *Analyst-Ready Large Scale Real Time Information Retrieval Tool for E-Governance* by Eugene Santos, Jr., Dartmouth College (USA), Eunice E. Santos, Virginia Polytechnic Institute & State University (USA), Hien Nguyen, University of Wisconsin (USA), Long Pan, Virginia Polytechnic Institute & State University (USA), John Korah, Virginia Polytechnic Institute & State University (USA), Huadong Xia, Virginia Polytechnic Institute & State University (USA), Fei Yu, Dartmouth College (USA), and Deqing Li, Dartmouth College (USA) introduces a comprehensive solution for the e-government analyst by extending the Intelligent Foraging, Gathering, and Matching (I-FGM) framework to image collections and creating a "live" version of I-FGM deployable for real-world use. A CBIR based image retrieval technique that incrementally processes the images, extracts low-level features and maps them to higher level concepts is presented. An empirical evaluation of the algorithm shows that the current approach performs competitively compared to some existing approaches in terms of retrieving relevant images while offering the speed advantages of a distributed and incremental process, and unified framework for both text and images.

Chapter XVII, *In-Stream Data Processing for Tactical Environments* by Marco Carvalho, Institute for Human and Machine Cognition (USA) re-introduces and discusses a new strategy for tactical data dissemination and processing based on distributed online learning. The concept was first proposed in Carvalho (2006) for the kinds of environments envisioned by the Army's Future Combat Systems program. In this work, the authors revisit, summarize and discuss the proposed approach. Starting from a formal description of the problem, the proposed solution and its theoretical properties are discussed. A number of simulation experiments for different data dissemination scenarios are also presented, and the work concludes with a discussion on how such techniques may be applied to critical e-government environments under different assumptions of service availability and information release policy constraints.

Chapter XVIII, *AJAX in Development of Web-Based Architecture for Implementation of E-Governance* by Dilip Kumar Sharma, G.L.A. Institute of Technology and Management (India), Gopalji Varshneya, G.L.A. Institute of Technology and Management (India), and Ashwani Kumar Upadhyay, M. N. National Institute of Technology (India) analyzes the diffusion of a web technology named AJAX in facilitating an e-government architecture and enhancing its potential by enabling modern web features such as de-

mocracy and collaboration. This chapter emphasizes that proper collaboration between private, public and government entities can only be achieved by proper information dissemination and acceptance of competent web technologies such as AJAX. Features of AJAX, which include sectional processing ability, speed, bridging, portability and compatibility are viewed in terms of their practicality.

As the concepts of practices of e-government become more common around the world, the need to explore newer opportunities and applications based on sound practices will become more important and necessary. This book is a collaborative effort between many researchers around the world, who share their knowledge of best e-government practices and discuss the current issues in e-government in an effort to expand the body of literature in the field and continue to enhance the frameworks that encourage innovation and adoption, moving e-government toward its goal of easy access for the masses. My hope is that this valuable collection of contributions will be instrumental in broadening our understanding of e-government technologies and their potential in reshaping society.

Mehdi Khosrow-Pour, D.B.A.
Editor-in-Chief
E-Government Diffusion, Policy, and Impact: Advanced Issues and Practices
Advances in Electronic Government Research Series