Preface

Countries around the world have increasingly used electronic government as a strategy for administrative reform (Gil-Garcia, 2012). Public managers, government officials, and policy makers devote time and financial resources to e-government in an attempt to achieve several potential benefits. However, e-government projects frequently fail to deliver the expected results in terms of outputs and outcomes. Failure appears to be related to numerous technical, organizational, institutional, and contextual factors (Gil-Garcia, 2012). Failure rates, when compared to the expected potential benefits, have practitioners and academics thinking that government information technologies have not yet accomplished their pledge of a more democratic, transparent, efficient, and effective public administration (Ashurst, Doherty, & Peppard, 2008; Chen, Zhang, & Lai, 2009; Cook, LaVigne, Pagano, Dawes, & Pardo, 2002; Garson, 2004; Joseph, 2010; Wu, Wu, & Wen, 2010).

INTEGRATIVE FRAMEWORKS TO UNDERSTAND E-GOVERNMENT SUCCESS

In searching for an explanation of such poor results, there are two related limitations to the scope of government information technology research as reflected in the previous academic literature. First, e-government initiatives need to be understood as having technological components, but also social and organizational relationships, as well as the interactions among social actors and between these actors and the technological artifacts (Cordella & Iannacci, 2010; Fountain, 2008; Gil-Garcia & Helbig, 2006; Iannacci, 2010; Margetts, 2009; Orlikowski, 2008; Orlikowski & Scott, 2008; Sefyrin & Mörberg, 2009). Therefore, in order to attain a better understanding of e-government, it is necessary to develop a more comprehensive view of the different socio-technical elements included in this phenomenon (Gil-García, 2012). Second, previous research overestimated the transformational power of information technologies (Andersen et al., 2010; Kling, Rosenbaum, & Hert, 1998; Mergel, Schweik, & Fountain, 2009; Parisopoulos, Tambouris, & Tarabanis, 2009; Reddick, 2010). E-government success cannot be seen as the measurement of results only.

To be able to study the success of e-government projects, it is first necessary to define what electronic government entails. Although electronic government is not a theoretical construct with a shared definition that scholars universally accept, it can be seen as the selection, implementation, design, and use of ICT in public administrations to supply government services, advance administrative effectiveness, endorse democratic values and participation media, and improve the legal and regulatory framework that enables information intensive projects and promotes the knowledge society (Gil-García & Luna-Reyes, 2008; Gil-Garcia & Luna-Reyes, 2003, 2006). Therefore, the overall success of electronic government
should be clearly related to the achievement of goals and objectives regarding the delivery of services, the improvement of managerial effectiveness (including efficiency), the endorsement of participation and other democratic mechanisms, and the creation of an appropriate legal and regulatory framework (Gil-García & Luna-Reyes, 2007). Considering all of the complexity noted above, we argue that understanding the relationships between e-government success and different institutional, organizational, and environmental factors has become imperative (Gil-Garcia, 2012). In order to achieve this understanding, an integrative framework is better suited for studying electronic government success.

The ensemble view of information technology and organization identifies a dynamic interaction between information technologies and social structures (Cordella & Iannacci, 2010; Criado, 2010; Fountain, 2001; Leonardi, 2009; Orlikowski, 2000, 2008). In this view, information technologies have the potential to transform social and organizational structures, while organizational and social structures could simultaneously affect the use of information technologies. If information technologies do not automatically change social structures and social structures do not determine the characteristics of information technologies, it is necessary to analyze the technological objects, as well as the social and organizational features around those artifacts (Fountain, 2008; Gil-Garcia, 2005a; Puron Cid & Gil-Garcia, 2004). In the literature there are some examples of such integrative views like structuration theory, adaptive structuration theory, institutional theory, socio-technical systems theory, and social informatics. The following paragraphs explain some of their main arguments.

From the structuration theory perspective, human actions and the broader social world are mutually constitutive (Giddens, 1984). At the same time that individual actions are constrained by certain social-level rules, their practices shape or reinforce those social structures (DeSanctis, et al., 2010; Orlikowski, 2008; Shachaf & Rosenbaum, 2010; Whittington, 2010). These social practices can refer to both relationships between individuals and relationships between individuals and technological artifacts (Gil-García & Hassan, 2008). There is an interaction between actions and structures, and therefore, there is no clear causality between social structures and individual actions (Elliott, 2010; Grgecic & Rosenkranz, 2008; Whittington, 2010). Structuration theory states that by defining the ways people think, options for behavior, and ranges of possible consequences, technologies structure the social world (DeSanctis & Poole, 1994; Hunter, 2010; Jones & Karsten, 2008; Orlikowski, 1992, 2010). Hence, institutional properties of an organization are influenced by reinforcing or transforming structures of signification, domination, and legitimation. Therefore, users socially construct information technologies as they select and emphasize some of their properties. In contrast, the features of the technology also affect how actors can use it and what they could use it for.

Similarly, there are two central concepts for Adaptive Structuration Theory (AST): appropriation and structuration (DeSanctis & Poole, 1994). These two theoretical constructs focus on the dynamic nature of technology use and adoption in organizational settings. For AST, appropriation is the immediate visible actions, which are evidence of deeper structuration processes. In contrast, structuration is the process by which social structures are produced and reproduced in social life (DeSanctis & Poole, 1994, p. 128). AST also proposes two components of the social structures of information technologies: structural features and spirit (DeSanctis & Poole, 1994). Users can appropriate different structural features and adopt or change the spirit of the technologies. They generate different social structures derived from their interactions with the system and with other users, designers, and managers. Social interaction impacts the appropriation of structures and decision processes by creating decision outcomes and influencing new social structures (rules and resources) and emergent sources of structures.
From the socio-technical perspective, implementation is an ongoing social process rather than a one-shot activity. Hence, the effects of technology are not immediate and direct. IT projects need socio-technical support in addition to IT infrastructures. Social relationships cannot be easily changed according to IT specific requirements; they are complex and have to be negotiated. Based on this socio-technical perspective, Kraemer et al. (1989) propose a model called the process model of computing change. The authors argue that managerial voluntarism and environmental determinism offer partial explanations for the use of IT in organizations. Therefore, their model acknowledges the important role of managers, but also the influence of internal and external environmental variables. All environmental factors have an impact, but this liaison is not direct—managers mediate it through their actions. The main role of managers in this model is to transform environmental opportunities and constraints into computing policies. Objective outcomes are the observed results, while subjective outcomes are the perceptions and interpretations of those results by different groups within the organization (Kraemer, et al., 1989). Both objective and subjective consequences of computing outcomes can affect the broader organization, the community environment, and the extra-community environment (Kraemer, et al., 1989). Therefore, this process model of computing change involves a series of complex and recursive causal relationships.

The technology enactment framework is another good example of an integrative framework that aims to understand the effect of organizational structures and institutional conditions on the use, design, and implementation of government IT initiatives (Cordella & Iannacci, 2010; Hassan & Gil-Garcia, 2008). With institutional theory, it is possible to identify power structures and how they relate to technological systems, in order to propose changes to the institutional environment that could influence both technological aspects and organizational structures and processes (Battilana, Leca, & Boxenbaum, 2009; Lu, Tsang, & Peng, 2008; Scott, 2010; Wry, Greenwood, Jennings, & Lounsbury, 2010). The technology enactment framework argues that objective information technologies are modified in some way by inter-organizational and organizational features and become enacted technologies (Cordella & Iannacci, 2010; Feldman & Horan, 2013; Gil-Garcia, 2006; Herrera & Gil-Garcia, 2010; Lee, Rainey, & Chun, 2009; Luna-Reyes & Gil-Garcia, 2011; Tsai, Choi, & Perry, 2009; Yildiz, 2007). Thus, the enacted technology could be seen as not only the technological characteristics of the current system, but also the manner in which users benefit from those characteristics (Fountain, 2001; Hassan & Gil-Garcia, 2008). The recursive argument is that the resulting enacted technology produces certain organizational outcomes (good or bad), which produce modifications to the technology itself, but may also lead to transformations in the organizational forms or even the institutional arrangements (Fountain, 2001, 2008; Gil-Garcia, 2005b, 2006; Gil-Garcia & Luna-Reyes, 2009).

Social constructionist views also acknowledge mutual causality and multiple determinations of outcomes from individual actions (Holstein & Gubrium, 2008; Irwin, 2011; Lock & Strong, 2010, 1982). There are two main perspectives within this theoretical tradition (Pfeffer, 1982, p. 209). First, the interactionist approach argues that it is through social interaction that individuals derive meaning, which each individual then interprets differently. In contrast, the structuralist approach maintains that regardless of the lens through which people perceive reality, it exists on its own. Sociologists of technology contend that linear models are not capable of accounting for complex social relationships, and they take the perspectives of different social groups into consideration for the analysis (Bartis & Mitev, 2008; Howcroft & Light, 2010; Stahl, 2008).

Sarker (2000) developed a model that considers culture, sub-cultures, and frames as social filters through which different social groups subjectively experience the objective reality. Unlike most previous views, this socio-technical model recognizes the importance of multiple elements in a technological
system such as structure, tasks, people, and technology. According to Sarker (2000), objective realities are socially constructed, but their degree of institutionalization makes social actors take them for granted as if they were part of the natural world. In contrast, subjective realities are affected by an individual’s background, position, culture, and role in the organization. They refer to how individuals give differentiated meanings to what may appear to be the same objective reality. This body of work suggests that both objective and subjective realities are important in understanding organizational dynamics in general and government IT initiatives in particular (Hossain, Moon, Kim, & Choe, 2013; Ruuska & Teigland, 2009; Scholl, 2008; Tsai, et al., 2009; Tseng, 2008).

Orlikowski’s approach acknowledges that all interactions are situational; different groups can enact different properties of the technologies according to their own norms, facilities, and interpretative schemes (Harrison, Pardo, Gil-García, Thompson, & Juraga, 2007; Orlikowski, 2000). Building on this idea, different enactments can result from what may appear to be the same technological properties. Therefore, social groups with different job positions, personal interests, and professional backgrounds are expected to enact differentiated “technologies in practice,” even when the technological artifact is essentially the same (Gil-García & Hassan, 2008; Hardy, 2010; Leonardi, 2010; Leonardi & Barley, 2008; Meneklis & Douligeris, 2008; Orlikowski, 2008). The social and economic practices are dynamic and context-specific. Therefore, different social groups will enact different technologies-in-practice, but the same social group will also enact different technologies-in-practice at different times and spaces (e.g., past, present, future).

As the brief summaries show, the ensemble view of technology provides a framework to study electronic government success in a comprehensive and integrative manner. From hardware to organizational technologies, from internal systems to services provided through the Internet, from laptops and computers in a government office to sophisticated information systems that require data sharing and crossing institutional boundaries, it is clear that electronic government has multiple meanings for diverse social actors and different contexts (Cordella & Iannacci, 2010; Gil-García & Luna-Reyes, 2003, 2006; Hardy & Williams, 2008; Luna-Reyes & Gil-García, 2011; Schelin, 2003; Scholl, Mai, & Fidel, 2006). In order to study, understand, and measure success, it is imperative to take this reality into consideration. Regardless of which theoretical approach is used, the research and knowledge of electronic government success will only thrive through serious, comprehensive frameworks and complex research designs. Several of the chapters in this book are good examples of such efforts.

AUDIENCE AND CONTENT OF THE BOOK

This book should be interesting and useful to professionals and researchers working in the field of government information technologies in various disciplines, e.g. public administration, administrative sciences and management, political science, sociology, communication, information science, computer science, and information technology, among others. Moreover, the book provides insights and support to government executives concerned with the development, implementation, management, and evaluation of complex e-government initiatives. Researchers and graduate students will also find the book useful for their theoretical development and as the basis for future research on related e-government topics.

The first section includes multiple efforts to develop theories. Within this section, in their chapter titled “Towards a Theory of E-Government Interorganizational Collaboration: Generic Structures for Cross-Boundary Requirements Analysis,” Luna-Reyes and Andersen present a series of causal maps that constitute an initial effort to create a generic theory of interorganizational cross-boundary electronic
government projects. Through a simulation-based study, they explored the interactions and social processes associated with the development of trust and knowledge sharing in the development of an inter-organizational e-Government application in New York State: the Homeless Information Management System (HIMS). The chapter includes the main theoretical and practical implications of the modeling and simulation work, as well as a discussion of some paths to continue their exploration of collaboration in this specific context. The authors find that a recursive structures approach constitutes an alternative for understanding success and failure in digital government.

Also proposing a theoretical model in “Modeling IT Evolution in E-Government: Theories and a Proposed Model,” Ganapati and Reddick present a critical review of the models of e-government in adopting Information Technology (IT). The authors argue that previous models do not sufficiently encompass existing and emerging information technologies; hence, they fall short on incorporating the institutional context and do not consider the nature of e-government services. The chapter provides an alternative roadmap of modeling IT adoption that builds on the elements of existing e-government models and takes into account the three dimensions of technology, institutions, and services. Likewise, Cordella includes institutional and organizational factors in his study of e-government. The chapter “E-Government Success: How to Account for ICT, Administrative Rationalization, and Institutional Change” assumes that e-government is a complex undertaking which encompasses technological, organizational, and institutional elements. The author offers a rich account of the role ICTs play in transforming public sector organizations, particularly in the rationalization of administrative procedures and public sector institutional transformations. The author introduces the notion of techno-institutional assemblages to offer a new theoretical ground to frame the notion of success in e-government projects. In Cordella’s view, successful e-government policies are the ones that deliver the outcomes, which have inspired their creation.

Niehaves and colleagues include the citizen as a variable in e-government success. In the chapter “The Digital Divide vs. the E-Government Divide: Do Socio-Demographic Variables (Still) Impact E-Government Use among Onliners?” The authors claim the prerequisite for success is citizens’ access and usage. They argue that a gap exists between adopters and non-adopters of e-Government services. Being online is a necessary pre-requisite for consuming Internet-based e-Government services. Their study develops a research framework, where the cumulative effect of e-Government adoption (among all people) is split into a) the digital divide effect and b) the e-Government divide effect (across Internet users). Their findings reveal two important success factors for e-government: the Internet literacy of citizens and targeting e-Government services at less educated citizens. The authors discuss implications for theory and recommendations for practice.

Closing this first section, Hébert examines e-Government evaluation practices anthropologically by questioning their theoretical and methodological assumptions. In “Anthropological Thinking about E-Government Evaluation” the scope of analysis is the manner in which e-government evaluation is conducted, the objectivity it invokes, and the discourse through which its findings are generalized to the broader public. The intended audience of this chapter includes policy workers and academic researchers who rely on online surveys to assess the citizen experience of e-Government and seek to expand their evaluative repertoire ethnographically.

The second section, titled Concepts, should also be of interest to scholars and researchers looking for new ways to understand electronic government success and broader factors related to it. In her chapter, Dawes focuses on success in Public Sector Knowledge Networks (PSKNs) by considering measures of structure, performance, and interaction. The chapter “Public Sector Knowledge Networks: Measures and Conditions for Success” actually goes beyond success measures and discusses the conditions for...
success—the critical success factors—that create the environment for individual, organizational, and network performance. These networks are especially salient in the context of e-Government where expectations for innovation and good performance rest on creative use of data, information, and technology.

Focusing on the concept of sustainability, Klischewski and Lessa argue that the long-term success of e-Government initiatives is of paramount importance, especially for developing countries, which face challenges such as limited budgets, donor dependence, transfer of technology, short-term involvement of non-local agents, and relatively unstable political and economic environments. In “Sustainability of E-Government Success: An Integrated Research Agenda,” the authors (1) clarify the concepts of e-government success and sustainability, (2) provide a conceptualization which unfolds, for both concepts, the most used sub-concepts, and constructs in terms of enablers and evaluation criteria, and (3) propose an integrated research agenda for studying the interrelation of both concepts in detail.

The chapter “Empowering Citizens: A Constructivist Assessment of the Impact of Contextual and Design Factors on Shared Governance,” presents policy co-production as both a technique for engagement and a desirable outcome from shared governance for representative democracies. Griffiths assesses policy engagement from the perspective of citizens as agents, not targets. Major factors that impact policy coproduction are context-specific and issue-specific—as well as outside the direct control of public service agencies. On the matter of governance, Sayogo and Harrison study budgetary transparency and accountability by examining how a country’s disclosure of budget information is related to a set of socio-political factors. The study presented in “Exploring the Socio-Political Determinants of Open Budget: A Cross-National Perspective” compares three types of disclosure practices (online, hardcopy, and unpublished distribution) for six types of budgets: pre-budget proposal, executive budget, citizens budget, mid-year review, end-year review, and audit report. The authors found that the level of democracy in a given nation has considerable impact on its level of budgetary transparency and accountability when these qualities are defined in terms of the types of budgetary documents that are available to the public online.

Roman proposes three dimensions for the successful use of ICTs for governance purposes. The chapter “Delineating Three Dimensions of E-Government Success: Security, Functionality, and Transformation” draws upon the historical evolution of e-government and the extant body of knowledge. Based on multiple scholarly accounts and practical examples, this chapter suggests that the success of e-government should be examined along three broad dimensions: security, functionality, and transformation. All three vectors are highly interdependent and it can be argued that the success of e-government in the long run is not possible if significant shortcomings are observed along any one of the three dimensions. To close this section, Lee and colleagues, in an attempt to empirically explore the ways in which governments take advantage of interactive interfaces on the Web for public diplomacy purposes, conducted a content analysis of the Ministry of Foreign Affairs’ Websites in 83 nations. The chapter “E-Government in Public Diplomacy: An Exploratory Analysis on Factors Affecting Interactive Interfaces in Ministry of Foreign Affairs Websites” describes how, through a statistical analysis, the authors found that a nation’s Gross Domestic Product (GDP) and level of telecommunication infrastructure are significant factors in accounting for variations in the level of interactivity offered in such e-Government Websites. In addition, the findings indicate a notable disparity between nations in the adoption of interactive technologies.

The final section on methodologies should be of interest for researchers, scholars, and students of e-Government. The following chapters propose a model or methodology to analyze different phenomena surrounding the success of IT projects in the public sector. For instance, Wimmer and Bicking’s chapter, “Method and Lessons from Evaluating the Impact of E-Participation Projects in MOMENTUM”, presents the impact evaluation framework, which is based on methods of evaluation from empirical research and
reflects the programmatic contexts of a set of European Commission (EC) co-funded pilot projects. The evaluation framework is grounded on the interplay of elements from a holistic e-participation solution: the participation process, the topics under discussion, the supported policy, and the technology and tools deployed. The authors demonstrate how attention to the interrelations of these issues affects users’ perceptions and motivations to participate in an e-participation endeavor. The authors show that the impact evaluation framework can lead to useful and usable impact analysis and evaluation results. These findings provide not only information on whether and how successful the monitored projects are, but also why they succeeded or failed and how they can be improved. Moving to the Americas, Sandoval-Almazán argues that open government Websites are a different forum for presenting government information. “Open Government Success Factors in Government Websites: The Mexican Experience” describes how in Mexico it has been legally mandatory since 2002 to present certain government data through Websites. Despite this strong statement of transparency, there is not enough measurement of the success or the failure of this practice. This chapter analyses data collected from a three-year benchmarking study of open government measures for portals during 2007, 2009, and 2010. From these data, three success factors were identified: trust, the search engine, and legal issues.

Vreck and colleagues emphasize the problem of e-Government project risks. In the chapter “Methodology for Risk Assessment and Costs Associated with Risk Occurrence in E-Government Projects,” the proposed methodology presents a new approach to the assessment of risks and costs related to e-government project risks, which is based on Bayesian networks. As such, it facilitates a holistic decision-making procedure for project managers. The application of Bayesian networks reduces the level of uncertainty in e-Government projects and provides a graphical structure of risks and corresponding costs. Finally, the sensitivity analysis has also been integrated into the methodology and its results can have a significant impact on the overall quality of project management. Also assessing the success of e-Government projects, Bouaziz and Chaabouni examine the criteria to use in an empirical inquiry based on case studies of e-Government projects by Tunisian government agencies. In their chapter, “Criteria for Assessing the Success of E-Government Projects,” they describe how the interviewees distinguish between project management success and success in meeting the deliverables. This study also revealed that the interviewees emphasize the success of the products delivered, while the success of the project management process was relegated to a second order. The findings are used to propose a metrics grid to assess the success of e-Government projects.

In “Assessing E-Government Success Strategies using Internet Search Data,” Boland and McNutt explain how evaluating e-government programs can be a challenging task. While determining program features and capacity are relatively straightforward processes, exploring the more dynamic nature of citizen response to e-government is difficult. The authors focus on recent advances in Internet search technology and how they offer researchers new opportunities to address these research questions. Innovations, such as Google Trends and Google Insights for Search, have made longitudinal data on Internet searches accessible to scholars. The availability of these data open a number of possible research avenues regarding e-Government. Finally, Georgousopoulos and colleagues also argue that globalization, increasing automation, and the growth of the Internet are setting up a services-driven world. The transition of government enterprises to the services-driven world will call for fundamental transformation in the provision of public services in the future, and a completely new way for governments to work and interact with their citizens. Towards this direction, in “Applying Open Innovation Strategies to E-Government for Better Public Services,” the authors propose an open innovation model through a process of democratic engagement between service providers and service recipients, where citizenship is reinstated at the heart of public service delivery.
FINAL COMMENTS

The chapters in this book provide relevant theoretical frameworks and some of the latest research, concepts, and methodologies employed in the area of e-Government success. The chapters are written for academics and professionals who want to improve their understanding of e-Government success factors and success measures at all levels of government and in very different political, economical, and cultural contexts. In that sense, the book aims to contribute to the development and discussion of a sound theoretical framework to understand the complexity behind attaining e-Government success. It also shows cases of applied methodologies for the evaluation of e-Government and concepts to ease its study and comprehension. Overall, the book demonstrates the importance of sound theories, well-defined concepts, and powerful methodologies for the study and deeper understanding of e-government success. The book compiles a selection of high quality chapters that clearly contribute to this goal.

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