Preface

Many texts on e-Government have attempted to investigate what factors influence e-Government adoption and usage and report the experiences in e-Government implementation. There are very few texts that have attempted to share their experiences in as far as technology design of e-Government implementation is concerned. While it cannot be denied that there are myriad technology solutions that can be employed to design affluent technology applications and solutions, developing e-Government is a different undertaking altogether because context is very much at play in influencing its success or failure. This book, therefore, intends to outline the technology principles and fundamentals that should be cornerstones of e-Government applications design.

Successful e-Government implementation demands that there is equilibrium between the supply (interventions towards the promotion of e-Government) and demand (citizens’ and businesses’ willingness to engage in e-Government) sides of e-Government. In general, there is a dearth of information on the supply side of e-Government especially with regards to implementation and design of e-Government from the technology front. For example, only the recent works (on going) of the OASIS e-Government Technical Committee have put up concerted efforts in developing interoperability platforms that can bring about integration of e-Government applications.

This book therefore intends to unearth the different technological nuances that need to be incorporated into successful e-Government designs. It provides a platform for e-Government designers and practitioners to share their experiences with emphasis on technological design and how to map technology to the unique characteristics of systems where e-Government is to be implemented. The book, therefore, brings out cases that complement the work of international committees such OASIS towards achieving a common interoperable technology solution for e-Government design regardless of whether it is implemented in a developed or resource-constrained economy.

The impact of this book is imaginable owing to the fact that there is no reference book devoted solely to discussing issues of technology design of e-Government applications in its entirety, especially from both a developing and developed world context. The thesis of the book is that inappropriate technology design may be one of the major causes of failure of many e-Government projects worldwide; therefore, this publication calls for experiences of best-practice to be shared. The overall objective of this book is to provide a platform for researchers, designers, and practitioners to share experiences in technology design of e-Government platforms. The book showcases the heterogeneous technology solutions implemented in different parts of the world in the realm of e-Government, helps e-Government designers understand what technology platforms are likely to work given their context, and provides a reference source for both researchers and academics concerning current and emerging research trends in technology designs of e-Government applications.
Because of the many benefits that come about with the implementation of e-Government, many governments have started implementing it. However, many e-Government designs are adopted without tailoring the technology (arguably the main enabler) to the local context and its heterogeneity. The result of this is that many of these projects fail to deliver on their promises. The chapters presented in this book will enable e-Government planners/designers to tailor their projects to the characteristics of the local context and therefore reduce the chance for e-Government projects to fail.

As aforementioned, although technology solutions are readily available to be potentially utilized in the design of e-Government applications, context plays a major role in determining the success rate of e-Government design interventions. Therefore, this book intends to present the nitty-gritty of e-Government technology design. Essentially, the book has two sections: The first section looks discusses fundamentals that guide the designs of e-Government technology and application platforms. The second section presents real-world cases of technology design and applications of e-Government solutions. In short, whilst the first section highlights the design principles, section two presents the application of the said principles in real world environments, providing a near hands-on feeling of e-Government to the readers of this book. The detailed snapshots of the chapters included in this book are outlined below.

The 1st chapter is an editorial comment that aims to highlight the overview of the best practices and foresights in technology design of e-Government applications development. The chapter posits that although a lot has been achieved in technology development for e-Government applications, there are still no global technological conceptual frameworks and models that define e-Government implementation the world over. Further, the current pace of technological advancements supporting requisite e-Government applications and efforts put in by the OASIS forum and other interested parties, it is not difficult to notice that global technological models of e-Government are to be realized in the foreseeable future.

The 2nd chapter by Fonou Vincent-Dombeu and Magda Huisman proposes a semantic-enabled framework for e-Government systems development. The chapter provides the design and specification of a framework which amalgamates features from maturity models, software engineering, and Semantic Web domains for semantic-enabled development of e-Government systems. Firstly, the chapter investigates the techniques utilized in the planning, design and implementation of e-Government systems worldwide, proposes the semantic-enabled framework, and then presents the support tools such as the business process model and the alignment matrix to articulate intensity of semantic activities at various stages of the phases for e-Government development.

Chapter 3 explores the prospects of socio media (Web 2.0) in e-Government environments. The chapter proposes a novel policy analysis framework, proposing a Web-based platform that enables publishing content and micro-applications to multiple Web 2.0 social media and collecting citizens’ interactions (e.g. comments, ratings) with efficient use of Application Programming Interfaces (APIs) of these media.

Chapter 4 discusses an ontology development process in e-Government Project Management environments with a specific focus on Zimbabwe. The chapter underscores the role of Project Management in the e-Government technology developing process cycle.

In chapter 5, Liam Church and Maria Moloney outline the design principles for e-Government applications design. The chapter presents a design theory to guide developers of public sector ICTs on how to produce systems that provide public e-services through secure and inclusive information systems. The design principles outlined by the theory are also subject to empirical, as well as practical, validation therefore opening future research directions for e-Government researchers.
Chapter 6 utilizes systems thinking and performance management frameworks to aid e-Government applications design. The chapter presents concepts, which should be utilized by e-Government platform designers if they must reach their goals of designing and implementing an e-Government platform that will meet social requirements necessary for designing good e-Government platforms.

In chapter 7, Gobin presents an agile and modular approach for developing ontologies, which may inform effervescent e-Government designs. The chapter posits that many ontology engineering methodologies available suffer from their heavy weight nature and make the development process tedious.

The 8th chapter by Adeyinka and Adetayo explores the literature to investigate the promise of Open Source system or software for developing requisite e-Government solutions for the developing world. The chapter posits that open source plays a significant role in e-Government application and its benefits are overwhelming as it results to less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions. However, its adoption is not without challenges.

Section 2, which presents chapters focusing on the design and use of e-Government application in real-world scenarios, starts with Tianxing Cai’s chapter, which looks at the geospatial technologies implemented on an e-Government conceptualization safeguarding the environment as a public good.

Chapter 10 by Neupane, Solar, and Vaidya discusses e-Procurement technologies with a goal of mitigating corruption levels in the public sector and utilizes the Principal-Agent theory to investigate the role of technologies in creating social sanity. The chapter reviews the principal-agent theory and discusses other relevant theories including transaction cost theory, fraud triangle theory, diffusion of innovation theory, and technology acceptance model. Following a discussion of the anti-corruption potential of e-procurement systems, a theoretical research model is proposed for identifying public e-procurement anti-corruption capabilities.

Chapter 11 discusses the Smartphone Base Digital Government Model in Turkey. The chapter posits that the different m-Government initiatives in Turkey are fragmented due to differences in audience, marketing strategy, technology supply, and distribution and media leading to reduced interoperability, and that apart from technologies, socio-cultural behaviours should be re-shaped to encourage active engagement and interactive government service provision that unlock the power of ICT.

Chapter 12 by Rahman and Ramos discusses the different stages of e-Government maturity models and provides some projectile of how contemporary e-Government initiatives can be designed and measured. The chapter proposes a grassroots e-Government model that emphasizes that affluent e-Government initiatives or technology focuses should be geared towards understanding the inherent attributes of the community setups.

The 13th chapter discusses the prospects brought about by technology utilization in the water sector using mobile technologies (m-Government). The chapter outlines the emerging ICT applications, especially those accessible on mobile devices, provide a lot of promise for enhancing water service delivery in Kenya because feedback on water/service quality can be received ubiquitously.

Chapter 14, by Malgorzata Pankowska, discusses the concept of Government 2.0 and outlines the different platforms promoting innovation for e-Democracy by particularly surveying open information infrastructures that support municipality innovation and development. The chapter utilizes extensive literature reviews and the analysis of the content of selected e-Government portals to inform its positions.

Chapter 15 discusses the different ICT applications utilized for linking small-scale farmers and agricultural extension service delivery. Using Soft Systems Methodology, the chapter proposes a framework for a conceptual model towards improving the agricultural extension services in Kilosa District of Tanzania was developed. The results were utilized in the development of an ICT-based system (Web-
and Mobile-Based Farmers’ Advisory Information Systems) to supplement conventional agricultural extension system. The roadmap developed as the implementation plan for this research can be used in any e-Government projects.

Oyekunle and Akanbi-Ademolake discuss e-Government technology divide in developing world contexts in chapter 16. The chapter highlights the different factors that may influence e-Government especially in resource-constrained countries.

In chapter 17, Tatjana Bilevičienė and Eglė Bilevičiūtė explore the possibilities of the use of ICTs in the judicial delivery platforms (e-Justice) in the context of e-Government. This is an eye-opener for e-Government domain researchers to explore and design applications to be utilized in law-enforcement agencies.

In chapter 18, Young Jun Shin extends the discussion of e-Procurement in e-Government environments started in chapter 10. The chapter presents Korea the following best practices of e-Government: Government for Citizens (G4C), Government e-Procurement Systems (GePS), the governance system, the On-Nara Business Process System, and the Home Tax Service (HTS).

Chapter 19 by Sagheb-Tehrani discusses the key factors influencing e-Government implementation. The chapter aims to discuss different contexts that may shape the success or failure of e-Government implementation.

Chapter 20 by Afolayan discusses the critical perspectives of e-Government in developing world contexts. This chapter utilizes extensive literature reviews to assess the different perspectives of e-Government development in developing world contexts. The chapter presents a Case Study from Jordan assessing the design and reality gaps of e-Government interventions using the ITPOSMO model.

In the final chapter in this book, Furlong discusses the role of Project Management in e-Government environments. The chapter outlines the need for effervescent Project Management approaches given the transformational e-Government models taking shape in most of the developing world contexts. The enhanced project management solution is “exogenous” of the e-Government solution.

As aforementioned, this book will go a long way in articulating the technology design fundamentals in the design of e-Government applications. I believe the carefully chosen chapters presented in this book will go a long way in acting as a major reference source for e-Government research and practice both in the developing and developed world.

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