Preface

Mobility is no longer (about) a technological revolution. It is more about how businesses and governments can provide a better social infrastructure through mobile applications and services. Adoption of mobility, therefore, is an indispensable asset for the public sector in meeting the demands of citizens. While e-government was an important step taken by many governments, provision of services through mobile technologies is now inevitable. Public demand for mobility, the efficiency, and productivity gains of the public sector through mobility lead to a natural move from e-government to m-government (mobile government). M-government emerges as the next big wave in the process of ICT use in the public sector. This evolution offers a comforting social infrastructure for the society, where mobile devices, often embedded, breathe-in, process, and breathe-out data that exist all around us.

After 2000, Japan, starting with i-mode, created the signs of such a mobile welfare society. Companies such as NTT DoCoMo are no longer "technology companies" but companies providing a "social infrastructure". While living in Japan, interacting with such businesses, and teaching mobile business at the International University of Japan (IUJ), I was deeply influenced by the effect these new technologies may have on the society. I was spending long hours reading about the adoption of ICTs by the public sector for the public. A few years ago, on the Internet, I came across the writings of a few authors such as M. Zelesak and O. Ostberg on how mobile technologies could be used by the governments.

Then later in 2003, I and M. Halid Kuscu, whose expertise is in public administration, published probably the first academic article on m-government at a European e-government conference. Although there were various ways mobility was adopted by the public sector, the term m-government was not widely used. I, then, through my colleagues and graduate students started to work in this field. Our aim was to establish and promote m-government as a field of research and practice. While doing our research at International University of Japan (IUJ), mGovLab (www. mgovlab.org) was setup as the first specialized and comprehensive resource site

for m-government. The following year there was a special track organized by me at the European e-government conference where a small number of m-gov experts gathered. The recognition of the m-government concept was gaining momentum in Asia and in Europe, but more needed to establish the m-government field and promote it. Then myself and the members of mGovLab group at IUJ decided to organize a conference in the field, aiming to gather academia, industry, and government representatives together. The same year, due to a rising need, I initiated efforts to establish an international consortium on m-government (MGCI—www. mgovernmnet.org) which aims to promote and shape the future of m-government developments all over the world. MGCI has been the driving company behind the international conferences on m-government (ICMG), first of which the EURO mGOV 2005 to be held in the United Kingdom.

This book is also part of our recent efforts to establish and promote the m-government field. This book is a collective effort of many experts in the area setting the concept, and providing selected examples of current developments from various countries in terms of technology, applications, and services. It helps the readers find answers to the questions such as:

- What is m-government and how does it relate to e-government?
- What are the examples of existing implementations and the technologies used?
- What lessons can be learned from federal government or local government case examples?

In searching answers to these questions, various real-world m-government examples and their evaluations, challenges, and opportunities for m-government are also presented. In this way, it may be useful for IT solution providers, researchers, government officials, and policy makers.

This book is intended for various groups, including m-government practitioners and researchers, government officials, policy makers, and mobile IT solution providers in the areas of e-government, mobile business, mobile Internet, and public administration. As m-government is becoming increasingly popular and essential for governments, an increasing number of people from various countries and public professionals may also be interested giving the book an international dimension. Apart from the government and commercial use, the book can also be of interest to educators, researchers in academia, and students.

Over the past couple of years, many professionals ask me, "what is m-government really?" They often argue, it is really just e-government using new technologies. My response is that, "M-government is a natural and inevitable extension of e-government". It is a new and very fertile field of research and practice. Recently, it has received great attention from the public sector, IT, and Telcos and academia.

However, there are already differing views on its significance in e-government efforts, its impact on the public sector organizations, the work and the employees, and the information society. M-government is often viewed as a technological extension of e-government. However, neither e-government nor m-government is about developing excellent technology for applications and services, but they are rather about creating an "able society". In such a society, the citizens should be able to adopt those applications and services easily. They are also about creating "responsive public organizations" which can provide those services and applications effectively. Whatever position one takes, the term m-government is a concept creating an "identity" for many mobility and e-government professionals and their efforts in the area.

This book is an attempt to create a large collection of articles as a book on m-government. Despite the fact that the m-government field is very new, there was a significant number of submissions of chapters in response to our call. The selection process was difficult in terms of identifying what a pioneering book should ideally include while ensuring quality content for such a fresh field. After careful consideration, this book was designed to respond to at least three important needs for the readers. It contains introductory knowledge on m-government, and then moves on to a relatively deeper examination of various applications, which are significant in terms of current and future developments in m-government. These include applications at the local government level—the development of mCity, applications in mobile health care, and law enforcement. The book also contains technical aspects of developing applications, especially on security. One important chapter takes a different perspective and evaluates impact of mobile technologies on government organizations. Finally, the book also contains speculative chapters to provoke ideas and discussions on issues related to understanding m-government as a field of practice and research and determining its position relative to other fields such as mobility and e-government.

The chapters are organized into four major sections. In the first section, the mobile government is introduced and its significance is discussed. The articles in this section create a conceptual context and grounds for the further chapters. The next section is devoted to articles dealing with an important application area of mobile technologies for the public: mobile health. The following section presents various cases both at country level and at local government level applications. Finally, the last section contains articles on the technology and provides a basis for understanding both current applications and the trends for the future.

Here are brief summaries of each chapter:

Chapter I is aimed at introducing m-government by presenting a working definition; and by discussing the drivers and the key issues in m-government followed by examples of applications from various countries. It serves the reader to be familiar with what m-government is and what kind of distinctive characteristics it has in relation to e-government. It also summarizes key challenges for implementing

m-government. The chapter argues that m-government is a concept under the e-government and mobility umbrella, and that it will be a significant complement to e-government efforts. Whether the ubiquity and pervasiveness of IT systems and applications will change this argument or not is a significant point yet to be seen in the near future.

Chapter II introduces a very important concept—mobile city or mCity—by describing a Swedish project of "mobile Stockholm". The mCity concept may spread easily to various cities of the world. It will not be surprising to see M-AnyCity applications at the local government levels quite soon. The mCity project of Stockholm focuses on building communities around mobile applications such as health care, education, tourism, and businesses. The chapter takes an important emphasis on the "users" rather than the technology. It shows how user involvement and following adoption is important for the success of m-government. The technology can be perfect but without someone using it to its full purpose and potential, it becomes simply "useless". Moving one step further, the chapter re-visits the m-government concept and relates it to today's society. It raises an important future concern in m-government developments: mobility is not about the technology but it is about the people and the society. Mobility brings in an infrastructure for life, and thus the users must be of primary concern in the development processes.

Chapter III presents a project which deals with an important issue of creating and implementing mobile applications while ensuring a smooth sharing of technological infrastructure among various partners to projects. It deals with issues that are key to a success of any ICT implementations including openness, interoperability, usability, and security.

Chapter IV presents a discussion of various issues related to m-government. After introducing m-government and various application areas and security-related implementation issues, this chapter provokes essential thoughts on m-government by speculating on key issues such as perspectives on mobility, the government and its organization, and user acceptance. The chapter closes with assessing the term "mobile" in government for now and for the future.

Chapter V deals within important dimension of mobile government implementation. Based on various projects in Europe, it examines factors influencing the behaviors of the partners to the value chain in mobile government project and how they interact. It presents business models, including financing, which enable various projects to be realized and sustained.

Chapter VI, on the other hand, turns into those implementation factors which belong to internal organization of the projects. These factors, called "soft factors" by the authors, are those invisible but essential factors including leadership, management style, involvement, and support. These factors are evaluated using two projects.

Following up from the previous chapters, Chapter VII turns into understanding the impact of mobility on government organizations and the mobile working. It starts reviewing m-government's unique and significant contributions to e-government:

where it compliments e-government and where it adds value to it. Next, it develops "an organizational response model"—a number of technological demands and responses of public organizations—for a systematic exploration of impact of mobile technologies on the business processes, on the work, and on the employees. The response model is evaluated using a number of real-world cases where mobile technologies are used for enhancing mobile working in the UK and Hong Kong. The response model is very important to understand how public sector gains efficiency and productivity by adopting mobile technologies and how it leads to progress in public organizations and the public work work. One can extend "the response model" to the dynamics of interactions with the—information—m-society, and tie the response model to a set of principles and policies promoting an understanding of technological and non-technological issues in m-government. This is how the social infrastructure is actually created.

Section II is opened by an introductory chapter (Chapter VIII), which deals with mobile applications in health care. This chapter, among others, introduces the mobility and health care emphasizing the technical suitability and value proposition of mobile health care applications. Health care is one of the most important services often provided by the public sector to the society. The mobile technologies need to be assessed both in terms of technological convenience and value added to the health care operations. After making the case for technological context, the chapter discusses some of the key elements of mobile health care applications: usability, adoption, interoperability, and change management, risk, security and privacy, and ROI issues. These issues are then exemplified through a case from the Canadian health care system. The readers might find the chapter useful as it provides a broad approach to evaluating and selecting mobile health care applications. It also provides a background for Chapters IV and V on mobile health care.

Chapters IX and X detail some of the key issues related to mobile health care. The former focuses on user adoption and reports on an empirical study conducted in Finland, Turku, on how social workers respond to the use of mobile technology and applications in domestic care. The latter focuses more on the organizational and work environment aspects of community health care. Chapter X reports on UK National Health Services (NHS) from the south of England, based on interviews with several health and social care professionals. In addition, these chapters provide a relatively deep insight into one of the most significant application areas of m-government.

Section III deals with various applications and cases from different countries. The first two chapters provide examples from South Africa. Chapter XI introduces the recent developments in the country and presents the potential for effective m-government deployment, while Chapters XII through XIV present examples from three more countries: Spain, Turkey, and Jordan, respectively. Chapter XII presents a specific example of a local government implementation in Zaragosa, Spain; on the other hand, the other chapters have broader perspectives at the country level implementations of mobile government. The implementations in Zaragosa emphasize the citizen involvement and the relationship between government institutions at a

local and public level. Chapter XIII takes a look at the m-government implementations in Turkey from the policy perspectives. Focusing more on mobile phones, it tackles issues related to health and safety issues stemming from mobile phone use and mobile phone manners when they are used in public. IT closes the chapter with a summary of future prospects of m-government in Turkey. Chapter XIV presents the emergence of mobility for the public use in Jordan by taking it from fixed network-based e-government applications. It also provides an evaluation of different delivery channels.

The final section of the book contains chapters concentrating more on the technology. Chapter XV opens the technological debate by bringing in the issues of adapting to the multi-channel delivery when it is challenged by mobile applications and services. In this respect, it accounts for both architectural and usability issues such as interoperability and security, and privacy and personalization.

The next two chapters discuss the security issues from a rather technical perspectives. As it is known, mobile networks are inherently insecure. Chapter XVI deals with the provision of secure wireless data accesses to the departments and agencies of the Canadian government. The chapter takes a particular focus on Wi-Fi security issues and spectrum management policies to show that it is possible to enable government workers with a secure infrastructure by augmenting some of the existing technologies and that this may help them work effectively. Similarly, Chapter XVII deals with building secure mobile channels in order to enhance one of the controversial application areas of electronic or m-government: e/m-voting. The chapter proposes a voting protocol and design principles to enable secure implementation of m-voting applications. These two chapters present architectural and technical issues which might be of interest to those readers who are more interested in engineering and design aspects of m-government.

Chapter XVIII brings in challenges and opportunities faced by local governments (i.e., cities) in the United States when using wireless networks in providing services via the mobile Internet. The chapter presents various cases from different U.S. cities by considering, for example, financing and maintaining services, security, and collaboration with the local operators. These issues are evaluated for the services provided by the local authorities such as law enforcement and emergency services.

Chapter XIX opens up discussions on a new trend in mobile government called t-government, which encompasses whole range of public services and application transmitted via digital TV. The core of the chapter is related to the evaluation of the reasons why e-services delivery could be preferred over a more traditional delivery for public services. In this way, the chapter proposes guidelines for effective delivery services especially for new channels such as those using mobile devices and digital TV.

This book is only the beginning of contributions to a gradually growing field of study and practice. Mobile government is now widely accepted as a field of study and practice. There are various students doing their PhDs on the topic and various

projects leading governments and other public organizations in using mobile technologies both from the public and private sector. Starting with this one, several books will be coming out and a series of conferences will be running in the field. My own efforts together with various colleagues in establishing mobile government as a field of academic study and practice are paying off, but there definitely is much need for more work to promote the importance and deeper understanding of the field. I do hope the readers will enjoy stepping into the field through this book and finding out more about m-government, its context, and the potential for the future.

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