E-Government Development and Implementation

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INTRODUCTION

This article intends to review important research issues in e-government and aims to shed light on future studies on e-government in a global setting. Specifically, this article: (1) reviews the background and development of e-government in developed and developing countries; and (2) identifies and discusses key issues and future trends/challenges in e-government research, which provides some insights and directions for future studies in e-government.

BACKGROUND

E-government is a cost-effective solution that improves communication between government agencies and their constituents by providing access to information and services online. *The Economist* magazine estimates that the potential savings of implementing e-government could be as much as $110 billion and £144 billion in the U.S. and Europe, respectively (Symonds, 2000). Narrowly defined, e-government is the production and delivery of govern-

ment services through IT applications, used to simplify and improve transactions between governments and citizens (G2C), businesses (G2B), and other government agencies (G2G) (Sprecher, 2000). Unlike the traditional bureaucratic model where information flows only vertically and rarely between departments, e-government links new technology with legacy systems internally and in turn links government information infrastructures externally with everything digital (Tapscott, 1995). Table 1 summarizes the characteristic differences between the traditional government and e-government organizations.

Though a new subject, e-government has attracted more and more research interest and focus from industries, national governments, and universities, such as IBM's Institute for Electronic Government and various "e-government task forces" in different countries around the world (Huang, D'Ambra, & Bhalla, 2002). E-government implementation has become a very important global issue faced by many countries of the world. So far, most, if not all, published IS papers discuss e-government implementation issues and problems based on the experience of developed countries, not on developing coun-

Table 1. Main differences between traditional and e-government organizations

Traditional Government	E-Government
Bureaucratic controls, clear authority hierarchy	Client service and community empowerment, leveled/blurred hierarchy
Process centricity	Customer centricity
Isolated administrative functions and data collection	Integrated resource service and knowledge focus
Functional specialization of units or geographic bias	Breakdown of unit barrier, government integration
Decision based on uniform rules and awkward reporting approvals	Decision based on negotiation and implicit controls and approvals
Isolated administrative functions	Integrated resource services
Disjointed information technologies	Integrated network solutions
Time-consuming process	Rapid streamlined responses

Table 2. Main differences between developed and developing countries

	Developed Countries	Developing Countries
History and Culture	• Government and economy developed early, immediately after independence • Economy growing at a constant rate, productivity increasing, high standard of living	• Government usually not specifically defined; economy not increasing in productivity • Economy not growing or increasing productivity; low standard of living
Technical Staff (Ledford, 2002)	• Has a current staff, needs to increase technical abilities and hire younger professionals • Has outsourcing abilities and financial resources to outsource; current staff would be able to define requirements for development	• Does not have a staff, or has very limited in-house staff • Does not have local outsourcing abilities and rarely has the financial ability to outsource; current staff may be unable to define specific requirements
Infrastructure (Dooley, 2002)	• Good current infrastructure • High Internet access for employees and citizens	• Bad current infrastructure • Low Internet access for employees and citizens
Citizens (ICeGD, 2002)	• High Internet access and computer literacy; still has digital divide and privacy issues	• Low Internet access and citizens are reluctant to trust online services; few citizens know how to operate computers
Government Officers	• Decent computer literacy and dedication of resources; many do not place e-government at a high priority	• Low computer literacy and dedication of resources; many do not place e-government at a high priority due to lack of knowledge on the issue

tries (Huang, Siau, & Wei, 2004). Can successful experience of e-government implementation in developed countries be directly applicable to developing countries? If not, why not? How can a country learn from other countries' experiences in e-government implementation? What are key issues and future trends of e-government development and implementation from a global perspective? These important questions have not had satisfactory answers yet.

Research literature shows that although e-government has become a hot research topic and there have been many prior studies on e-government, most of them are published based on experience of developed country's e-government development and implementation, such as in Britain (Irani, Love, Elliman, Jones, & Themistocleous, 2005), Australia (Huang et al., 2002), the European Union as a whole (Heinderyckx, 2002; Lassnig & Markus, 2003; Lowe, 2003; Schweighofer, 2003), Finland (Kampen, Snijkers, & Bouckaert, 2005), France (Benamou, Busson, & Keravel, 2004), Spain (Latre, 2003; Pasic, Sassen, & Garcia, 2004; Sabucedo & Anido, 2004), Italy (Ferro, Cantanmessa, & Paolucci, 2004), The Netherlands (Arendsen & van Engers, 2004), Germany (Bartels & Steimke, 2004), Switzerland (Chappelet, 2004), Belgium (Rotthier, 2004), Japan (Omura, 2000; Thompson, 2002), Canada (Marche & McNiven, 2003), and the United States (Ni & Ho, 2005; Reddick, 2005).

Although e-government technologies have a potential to improve the lives of the 80% of the world's population that lives in developing countries, so far developed countries such as the United States, Canada, Britain, and Australia are leaders in e-government (Accenture, 2002), reaping the vast majority of initial gains of e-government implementation. More than 75% of Australians file income taxes online, while the mayor of Minnesota receives about 13,000 e-mails from the public each week (Palmer, 2002). The gap between developed and developing countries in Internet technological infrastructures, practices, and usage has been wider rather than narrower over recent years. Besides the lack of sufficient capital to build up expensive national information infrastructure (NII) on which e-government is based, developing countries also lack sufficient knowledge and skills to develop suitable and effective strategies for establishing and promoting e-government.

Prior study provides some empirical evidence to show that e-government development and implementation differ in different countries in terms of income level, development status (developed vs. developing countries), and geographical regions. To examine those underlying reasons resulting in different e-government development strategies and outcomes between developing and developed countries, it is important to examine the main differences between developing and developed countries in

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