

Chapter 6

The RFID Technology Adoption in E-Government: Issues and Challenges

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ABSTRACT

The emergence of Radio Frequency Identification (RFID) technology has affected the functions and roles of business organizations. RFID technology provides technical solutions across a variety of industries in the public and private sectors. E-government is being increasingly utilized by governments in different countries to increase the efficiency of services provided to citizens. Although the use of e-Government is allowing timely, effective services online, many challenges must still be overcome to maximize the utility e-Government can provide to citizens. RFID is disseminating in a variety of new areas and movement exists toward the adoption of RFID in e-Government, but several issues and challenges must be addressed. This paper examines both e-Government and RFID from an individual perspective and explores the possible issues and challenges associated with RFID technology adoption in e-Government. Based on a review of literature, a conceptual model has been developed illustrating the various issues and challenges and how they would impact the RFID adoption in e-Government.

INTRODUCTION

Radio frequency Identification (RFID) technology has become a hot topic in the fields of supply chain management and manufacturing. RFID has emerged as part of a new form of inter-

organizational system that focuses to improve the efficiency of the processes in the supply chain. Business organizations started taking a hard look at what RFID can do for them and whether they should give further consideration to adopting RFID technology, because it is a technology dramatically changes the capabilities of an organization

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to acquire vast array of data about the location and properties of any entity that can be physically tagged and wirelessly scanned within certain technical limitations (Coltman et al., 2008). RFID allows any tagged entity to become a mobile, communicating component of the organization's overall information infrastructure. According to the market research analyst IDTechEx (Das, 2005), the cumulative sales of RFID tags for the year 2006 reached over 2.4 billion and RFID smart labels would be needed in a range of areas, such as retailing, logistics, animal and farming, library services, and military equipment. It has become a novel and exciting research area of technological development, and is receiving increasing amounts of attention from the researchers as well as practitioners.

According to experienced early adopters, and academic researchers, RFID facilitates collaboration between organizations (Cantwell, 2006; Lekakos, 2007). In an e-Government context, RFID provides boundless potential in improving effectiveness, efficiency, and tracking e-Government services much more accurately in real-time reducing processing time delays. A number of factors have led to RFID being utilized more in e-Government. The emergence of common practice standards, the rising appearance of information technology infrastructure, technological advances and the importance of real-time intelligence have prompted a surge in the popularity and use of RFID. The different applications of RFID technology have experienced success in various fields, especially in business and many new developments for further RFID use are in the works (Wyld, 2005).

This paper explores the processes in e-Government where RFID technology could be applied and discusses the benefits of this technology in providing value added e-Government services to citizens. The next section begins with a concise overview of e-Government literature, followed by a technical background of RFID. The benefits of RFID are discussed, followed by the findings

of how RFID influences the various areas of e-Government services. Following the literature review, a conceptual model for RFID adoption in e-Government is given illustrating the various issues and challenges and how they would impact the RFID adoption in e-Government. Research propositions are evolved from the model and suggested for further research. Finally, the limitations and the areas for further research are discussed followed by concluding remarks.

LITERATURE REVIEW

E-Government

E-governance is the application of electronic means to simplify, and improve the technology-mediated interaction between government and e-governance community comprised of citizens, civil society organizations, private companies, government law makers, and regulators on networks to increase the administrative effectiveness and efficiency in the internal government operations (Marche & McNiven, 2003; Toregas, 2001; Tapscott and Agnew, 1999). E-governance is about moving government services online (Finger & Pecoud, 2003; Waisanen, 2002; West, 2001) by providing easy to navigate and access web portal to all online government services (Lloyd, 2002) in an interactive manner (Alcock & Lenihan, 2001). The potential benefits are: speed, efficiency, convenience, public approval, democratization, and environmental bonuses (Hanson, 2009; Sinrod, 2004). The three main domains of e-governance are (Heeks, 2009; Prattipati, 2003): improving government processes (e-administration), connecting citizens (citizens and e-services), and building external interactions (e-society).

E-governance satisfies the citizen as customer by making use of Information and Communication Technologies (ICT) to exchange information and services with citizens, businesses, and other government agencies (Deakins & Dillon, 2002;

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