Chapter 55

Employees' Perceptions of Biometric Technology Adoption in E–Government:
An Exploratory Study in the Kingdom of Saudi Arabia

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ABSTRACT

This paper discusses an exploratory study of government employees' perceptions of the introduction of biometric authentication at the workplace in the Kingdom of Saudi Arabia. The authors suggest that studying the factors affecting employees' acceptance of new technology will help ease the adoption of biometric technology in other e-government applications. A combination of survey and interviews was used to collect the required data. Interviews were conducted with managers and questionnaires were given to employees from two different government organisations in Saudi Arabia to investigate the employees' perceptions of using biometrics. The results of this study indicate a significant digital and cultural gap between the technological awareness of employees and the preferred authentication solutions promoted by management. A lack of trust in technology, its potential for misuse and management motives reflect the managers' need to consider their responsibilities for narrowing these gaps. It was apparent that overcoming employees' resistance is an essential issue facing biometric implementation. Based on the research the authors recommend that an awareness and orientation process about biometrics should take place before the technology is introduced into the organisation.

1 INTRODUCTION

New technologies constantly evolve new dimensions to daily life. They can be used to provide interactions between users and their governments through electronic services. Governments are looking for more efficient and effective uses of technology in order to electronically deliver their services (Alharbi, 2006; Scott, 2005). Electronic government (e-government) has therefore become an important world-wide application area.

With e-government applications, users are required to provide governments with personal information which necessitates an efficient, secure technology to provide reliable methods, particularly for users' identification as well as secure information systems. Thus, the implementation of e-government is facing important issues such as information security, user authentication and privacy in which biometric authentication is a potential solution to deal with such concerns (Dearstyne, 2001). It can provide reliable identification of individuals as well as the ability for controlling and protecting the integrity of sensitive data stored in information systems (McLindin, 2005). As a result, several governments have implemented biometric authentication systems in order to efficiently and securely provide their services.

However, the adoption of biometrics in e-government has become a major component of political planning for several governments. In particular, user acceptance can be an essential factor for the successful implementation of biometrics (Ashbourn, 2004; Giesing, 2003; Scott, 2005). Moreover, users can have a direct impact on the operational performance of biometric systems, so their concerns need careful consideration, even if their concerns are fairly rough and ill defined (Ashbourn, 2004).

This paper discusses a study conducted in the Kingdom of Saudi Arabia of government employees' perceptions of the introduction of biometric authentication at the workplace in 2008. The aim is gain an understanding of factors affecting the employees' acceptance of biometrics and to advise on how to successfully adopt biometrics in e-government applications. The paper is structured as follows. The relevant literature is reviewed followed by the description of the empirical study that involved a descriptive survey and interviews of the managers and employees in two organisations.

2 BACKGROUND

To introduce the context in which this study was undertaken it is necessary to consider the concepts of e-government and biometric authentication and how they relate to the technological sophistication of the major users. Saudi Arabia presents a unique set of cultural and technology uptake circumstances that have implications for management of a digital divide. We discuss the background to this enquiry in the following sections.

2.1 E-Government

Electronic government involves the citizens of that country in certain government activities in order to help solve problems. E-government provides unparalleled opportunities to streamline and improve internal governmental processes, enhance the interactions between users and government, and enable efficiencies in service delivery (Scott, 2005). It refers to the use of information technology by government agencies in order to enhance the interaction and service delivery to citizens, businesses, and other government agencies (Alharbi, 2006; AlShihi, 2006). Thus, there are four categories of e-government applications which are: Government-to-Citizen (G2C); Government-to-Business (G2B); Government-to-Government (G2G); and Government-to-Employee (G2E) (AlShihi, 2006).

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