

Chapter 11

Information Security Threats in ERP Enabled E-Governance: Challenges and Solutions

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ABSTRACT

E-governance offers different e-Services to its citizens so that they can interact with the government in a more effective way. Enterprise Resource Planning (ERP), when implemented in the e-governance domain, combines all the government functions together into one single integrated system with a central database. This system serves the information needs of all the departments across geographies, while allowing them to communicate with each other. For this it is necessary to understand that government has become more dependent on modern technologies that have the potential to create seamless, responsive, and citizen-centric government for the benefit of all. At the same time, it has become increasingly vulnerable to a range of risks, from interruption of operations that are based on computers to loss of confidential data. Government agencies at all levels (national, provincial, and local) must protect the computer systems that they own and operate. Information security requires a combination of business, management, and technical measures in an on-going process. Security is costly, but like privacy, it should be addressed in the design phase and periodically reviewed. This chapter contributes to the ERP enabled e-governance literature for understanding threats and risks, clarification and investigation of the techniques in mitigating these challenges and issues involved in improving e-governance security. The interest generated by the ERP phenomenon in the public sector, and the peculiarities of this sector make specific studies of ERP in government organizations necessary. This is an issue which has not yet been widely addressed in the open literature.

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INTRODUCTION

E-Governance

E-Governance refers to the use of information technology by government agencies that have the ability to transform relations with citizens, businesses, and its other arms. ERP system can be defined as an IT solution that helps organizations to achieve enterprise wide integration which results in faster access to accurate information required for decision making. These two different concepts when combined, can serve a variety of different ends viz. better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions” (World Bank, 2004)

Technology developments are changing all aspects of societies. E-governance is a key instrument for modernisation and reforms as the government faces the continuous pressure of increasing their performance and adapting to the pressure of new information society (Wang and Hang, 2009). Good, reliable and trustworthy public services built around the needs of the citizen are essential to a modern, fair and dynamic society. As many public sector organizations are either planning for or implementing major e-governance projects, there is a growing need to understand how these projects can be successfully managed for maximum realization of their potential benefits (Lee, 2005). Moreover, we know public and private organizations are facing a wide range of information threats hence Information security is a crucial component in their information systems. With the increasing reliance on technologies connected over open data networks, effective management of information security has become one of the most crucial success factors for public and private organizations alike. Requirements and guidelines

for effective information security management practices are a prerequisite of e-governance in order to promote the necessary steps to ensure successful outcomes.

E-Governance was born out of the Internet boom. However, it is not limited to Internet use or publicly accessible systems for direct use by customers or citizens (Garcia and Moyano, 2007). In some ways, the use of the Internet (and all of its underlying technologies) has become the primary means by which the organization interacts with its environment, while this brings tremendous opportunities, it also exposes the organization to new risks that must be identified, mitigated, and managed so as not to impede the organization’s quest to meet its mission (Caralli et al). Along with the rapid growth of the Internet there has been a substantial rise in online transactions. The government sector has been no exception to these facts and it has embraced IT in general and Internet-based technologies in particular, in order to extend the benefits of governance to all citizens—urban and rural through a series of e-governance projects. In fact, e-governance has received more and more importance and it can provide non-stop government information services to citizens, enterprises, public officers, government administrations and agencies over a network (Hwang et al, 2004).

The term e-governance emerged in the late 1990s, but the history of computing in government organizations can be traced back to the beginnings of computer history. A literature on “IT in government,” goes back at least to the 1970s. (Kraemer, et al, 1979, Danziger and Andersen, 2002). E-governance is the application of IT to the processes of governments functioning to bring about Simple Moral Accountable Responsive and Transparent (SMART) governance that works for improving the service delivered to the citizen on dimensions such as speed, quality, reliability, convenience and cost. E-governance as defined by (Turban et al., 2002) is: “The use of information technology in general and e-commerce in particular, to provide

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