Chapter VI

Computer Security in Electronic Government: A State-Local Education Information System

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Abstract

As e-government projects proliferate at all levels of government, and as they transition from voluntary to mandatory participation, close examination is required, particularly the examination of security issues. The CIA (confidentiality, integrity, availability) model offers a framework for examining e-government projects. This study examines the factors impacting security, using as a case study an education information system in the 2003-2004 school year. The study focuses on how CIA factors relate to a host of variables, such as school district size, software selection, technology staffing, technical competence and support, awareness of security issues, and project commitment. For the organizations participating in the project, typical factors of district size and software selection are found to be insignificant, and technical support is identified as one of the key factors promoting security.
Introduction

E-government refers to the use of information and communication technology to carry out government operations such as delivering government information and services. E-government has grown in the past decade. E-government efforts can vary from Web portals to online license renewals to experimentation with online voting. E-government is generally recognized as a means of making government more efficient while allowing it to be more responsive to customer needs. The growth in e-government has been rapid. For example, in the United States, the percentage of local governments with Web sites increased from 8.7% in 1995 to over 80.0% in 2000 (Holden, Norris, & Fletcher, 2003). The numbers reached 87.7% in 2002 (Norris & Moon, 2005). Advances in information and communication technology are helping to make the growth in e-government a global phenomenon. A United Nations report shows that governments around the world are moving towards higher levels of e-government to better serve their citizens (United Nations and American Society for Public Administration, 2002). By 2004 93.0% of United Nations (U.N.) member states had a Web site and a third provided public services on-line (United Nations, 2004).

For the evaluation of e-government projects, there are a number of approaches grounded in the information systems research literature. One method calls for examining e-government projects in terms of the factors promoting implementation (Brown, O’Toole, & Brudney, 1998; Brown & Brudney, 2004; DeLone & McLean, 2003; King et al., 1994; Shaw, 2003). Adoption and user acceptance constitute another approach (Brown, 2003; Davis, 1989; Ho & Ni, 2004; Venkatesh & Davis, 2000). Some scholars focus on various aspects of administrative reform, focusing on impacts on efficiency, transparency, and accountability arising from the use of information and communication technology (Brown & Brudney, 1998; Danziger & Andersen, 2002; Ho, 2002; Moon, 2002; Pandey & Bretschneider, 1997; West, 2004).

Moreover, a wealth of studies on e-government initiatives around the world offers opportunities for comparative understanding. The United Nations has issued a report consisting of a comprehensive country-by-country account of e-government activities. The report offers advice on building institutional foundations for continuing success (UN-ASPA, 2002). The Cyberspace Policy Research Group examines the transparency, democratization, and accountability of e-government projects. Since 1995, it has examined national government Web sites around the world. Working with scholars and practitioners around the world, Heeks (2001) proposed a generic framework for developing and implementing e-government projects. He offers detailed country and project-specific case studies.

And yet among the current studies of e-government, a common theme recurs: Despite the increasing need for such research, there is a lack of comprehensive evaluations...
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