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IT governance: Objectives and assurances in internet banking

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ABSTRACT

This paper develops and tests a new factor of the trust model in electronic commerce; namely, internet banking. Internal control of internet banking is very consistent with high levels of trust factors such as security, privacy, and other risk issues. However, this type of association has not yet been widely recognized as a trusted model from the consumer's electronic commerce point of view. This study attempts to create new factors in IT governance and the COBIT (Control Objectives for Information and Related Technologies) assurance seal. The empirical results of this experiment show that customer familiarity with IT governance and the COBIT assurance seal has impacted customers' trust in internet banking. Moreover, the results also show that perceived internet banking quality and reputation impact customers' trust in internet banking. Given the results of this study, we propose future research aimed at developing a COBIT assurance web seal of internal control, applicable to information technology based on IT governance.

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1. Introduction

Previous studies of e-commerce have referred to trust as one of the major obstacles in preventing growth and adoption (Gefen, Karahanna, & Straub, 2003). However, the relationship between e-commerce and consumer trust has not yet been fully analyzed with respect to full adoption of e-commerce technology. Customers are reluctant to adopt internet banking because of the associated security (Cheng, Lam, & Yeung, 2006) and privacy concerns and other trust-related issues (Lee & Turban, 2001; Pavlou, Liang, & Xue, 2007; Thomas, Midha, & Nemati, 2007). There is no doubt that security, privacy, and trust are all complex issues with multidimensional factors; many of which transcend the traditional physical marketplace, moving into the electronic marketplace. Moreover, while each internet bank has a different reputation and provides varying service quality, the reputation of the bank is the most important factor in choosing an internet banking service (Tan & Teo, 2000) and internet banking service quality has strong impacts on customer satisfaction (Bauer, Hammerschmidt, & Falk, 2005 ; Jun & Cai, 2001). Internet banking can be employed to reduce system-related uncertainty by utilizing encrypted transactions, firewalls, authentication mechanisms, and privacy seals and disclosures (Pavlou, 2003) while offering other structural assurances (Kim & Prabhakar, 2002; Yousafzai, Pallister, & Foxall, 2005). In addition, the management of IT (information technology) focuses on routine tasks which are performed daily, such as effective and efficient control, allocation, and management of various IT service operations. To improve IT management and control, information technology governance (IT governance) concentrates on the regulation of IT to meet the present and future demands of businesses and customers (Peterson, 2004). Internet banking is one type of IT service that offers banking services in the IT domain to internet customers.

The aforementioned research on consumer trust specifically identifies the privacy, security, and risk factors of distrust of internet banking as technologically-based concerns (Rajagopalan & Ashutosh, 2005). Furthermore, perceived reputation and quality are key factors to attracting customers to adopt e-commerce technology when customers lack prior experiences (McKnight, Choudhur, & Kacmar, 2002). This study expands upon previous research by integrating the findings of studies related to trust and building upon the constructs of "trusting intention" and "trusting beliefs" proposed by McKnight et al. (2002). The primary focus of this study is to create internal IT management solutions and address trust issues. Specifically, the purpose of this study is to consider the question of how IT governance affects factors such as trusting beliefs and trusting intention, and how perceived reputation and quality affect trusting beliefs and trusting intention factors. This study employs the COBIT framework to investigate the impact of IT governance on the internal IT process, and also examines IT resource dimensions, including applications, information, infrastructure, and people from the COBIT framework, as useful tools for improving consumer trust.

2. Literature review

The last several decades have witnessed the development of multiple frameworks that can support the implementation of IT governance. The COBIT framework is based upon using various techniques to focus on the improvement of the process flow within an organization and the

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assessment and monitoring of its performance (ITGI, 2005; Brad & Scott, 2007 and Information System and Audit Control Foundation (ISACF)). However, consumer trust in internet banking may be related to other unique attributes such as the distant and impersonal nature of the online environment, the extensive use of technology, and the inherent uncertainty of using an open technological infrastructure for transactions. Increased trust in the internet banking service and its associated infrastructure will reduce transaction-specific uncertainty and perceived risks of the bank using the system opportunistically (Gefen, 2000). In other words, improving customer trust may depend upon internet banking services' infrastructure to reduce the level of risk associated with the transactional process (Gefen, 2000). More specifically, consumer trust is based on the perceived security of internet banking (Cheng et al., 2006) and the risk of trusting customer's influences (Yousafzai et al., 2005; Yousafzai, Pallister, & Foxall, 2003). Further, literature about e-commerce indicates that trust is one of the major obstacles that impact growth and adoption such as the study from Gefen et al. (2003). In this section, the authors place a focus on IT governance and trust in internet banking issues.

2.1. Information technology governance (IT governance)

Factors such as security and privacy may impact a consumer's internet banking choice. A recent study found that 80% of global phishing attacks in the first quarter of 2005 targeted the financial services sector (Lichtenstein & Williamson, 2006), while another survey by Chung and Paynter (2002) showed that customer fears regarding transactional security are an inhibitor to the adoption of internet banking. Security factors have also been identified as key consumer concerns according to a number of internet banking adoption studies (Black et al., 2002; Siu & Mou, 2005).

IT governance has a direct impact on how IT is managed within an organization (Sohal & Fitzpatrick, 2002) and is also concerned with strategic alignment of IT and the business. IT governance is increasingly gaining attention in the business and IT arena. In a study of Gartner's Top Ten CIO Management Priorities for 2003, “Improving IT Governance” was, for the first time, included and was ranked third in importance. This growing interest is further evidenced by attention given to it in a number of recent publications (Duffy, 2002, IT Governance and Business Value — Part I). IT governance can be defined as the organizational capacity exercised by the board, executive management, and IT management to control the formulation and implementation of IT strategies and ensure the successful fusion of business and information technology (Grembergen et al., 2004; Trites, 2004). IT management focuses on the effective supply of IT services and products and the efficient management of IT operations. Compared with IT management, the domain of IT governance is much broader and concentrates on transforming IT to meet present and future demands of businesses and their respective customers (Peterson, 2004).

According to previous studies, well-defined statements and objectives are vital to improving trust-building strategies with customers (McKnight et al., 2002; Yousafzai et al., 2005). COBIT is one of the most mature models (Boritz, 2005; Bowen et al., 2007; Pederiva, 2003) with a specific focus on IT governance. Both internal and external governance serve important roles in IT control quality (Li et al., 2007). The current study synthesizes important statements from IT governance based on the opinions of eight field experts, and then translates them into a user-accepted form that matches the wordings and meanings of COBIT definitions.

2.2. Trust in internet banking

Research on the critical role of trust is still an important area of investigation in the domain of e-commerce (Friedman et al., 2000; Kaplan & Nieschwietz, 2003; McKnight et al., 2002). Successfully attracting consumers depends on factors such as the extent of initial trust engendered by vendors and the ability to persuade consumers to transact with them in the future. Both factors depend on the extended improvement of initial trust (McKnight et al., 2002). McKnight et al. (2002) proposed an initial trust building model to explain the antecedents of initial trust and how initial trust increasingly influenced consumers' behavioral intentions. This aforementioned model asserts that the structural assurance of a web site and two vendor-specific factors influence consumer trust beliefs and trust intention, which in turn affect consumer behavior and intention. Trust, comprised of trust belief, trust intention, and perceived web risk derived from structural assurances, influences consumer behavioral intention.

Internet banking, in terms of the trust definition, is predicated according to the two following aspects. First, it involves the traditional view of trust of a specific party. In this case, the bank provides internet banking services. Second, a broader view implies that trust is the perception of the integrity of the entire transaction medium, which in this case is the internet. These policies should be described in a clear and simple manner through various security features used in the process, such as encryption, firewalls, server authentication, and password protection. The security statements must convey a strong ability to protect the personal information of its customers and guarantee customers that gaining unauthorized access to banking information is impossible (Montoya-Weiss et al., 2003).

In practice, an internet banking web site management system is one type of IT system that includes internal control factors also available in a physical bank. In summation, it is clear that security, privacy, and risk are key issues that affect the building of trust with internet banking services.

3. Hypotheses development

A web site can present web-based assurances by displaying certified web seals issued by a trusted third party (BBBOnline, TRUSTe, and WebTrust) to enhance its creditability (Kaplan & Nieschwietz, 2003). Kimery and McCord (2002) further defined “web seal” as the assurance procedures developed by a public third party for use within a web-based application. A web assurance seal increases the user's awareness and perceived importance of the seal after educating customers about the security and privacy dangers of the web (Kim et al., 2008).

Keeping these aforementioned studies in mind, an extended trust model is proposed based on the control objectives of IT governance to build COBIT assurance.

In the late 1990s, the American Institute of Certified Public Accountants (AICPA) and Canadian Institute of Chartered Accountants (CICA) jointly announced the development of web trust. Web trust provides assurances in the following four areas: (1) business practices and disclosures, (2) transaction integrity, (3) information protection, and (4) information privacy (CICA, 2001). Other assurances related to seals often focus on a subset of these four dimensions. For instance, Verisign focuses on transaction integrity and information protection, while TrustE focuses only on information privacy. The assurance offered by BBB Online is even more restricted than other assurance

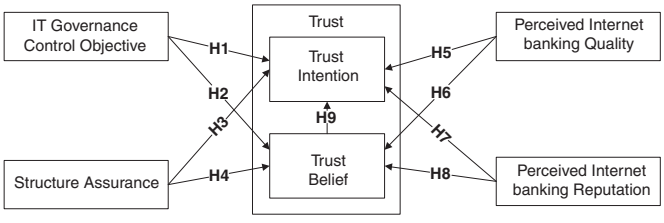

Fig. 1. Research framework.

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