The Impact of Risks and Challenges in E-Commerce Adoption Among SMEs

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INTRODUCTION

E-commerce provides different opportunities to small businesses as it overcomes part of their technical, environmental, organizational, and managerial inadequacies (Bergeron, Raymond, & Rivard, 2001; Hussin, King, & Cragg, 2002). According to Forrester Research, e-commerce in the US will grow at 19% reaching $230 billion by 2008. Further, the Internal Revenue Service (IRS) estimated that in 2003, there were 27 million small business tax returns. Small businesses are an important and integral part of every nation's economy (Hambrick & Crozier, 1985). The US Small Business Administration (SBA) defines a small business as "an independent business having fewer than 500 employees or is independently owned and not dominant in its field of operation." Small firms play an increasingly crucial role in US economy. They employ more than one half of the US private sector work force, are responsible for about one-half of the GDP, and generate more than one half of all sales in the US create 60%-80% of net new jobs annually (Ibrahim, Angelidids, J. & Parsa, 2004).

Alternatively, small businesses are often more challenged than larger firms by resource constraints, such as lack of financial capital, and technical or managerial skills, knowledge and expertise that significantly reduce the number and types of options available to management (Hodgetts & Kuratko, 2001). Previous research suggests that although most small businesses were connected to the Internet, the potential use of the Internet in their business was rarely explored. Security concerns has a direct impact on every critical part of the small business including reputation, productivity, and business continuity, as they need to adhere to the legal requirement for information management. The research question thus designed for this study is what factors inhibit or pose challenges for e-commerce adoption among small businesses? We discuss the findings of an exploratory case study with four firms, across a section of different industries, on the risks and challenges they encountered when adopting e-commerce. The study contributes to managerial and theoretical implications by increasing the importance and awareness of small businesses in e-commerce adoption.

BACKGROUND

The rapid growth of the Web, and its importance to the US economy, make it imperative to develop a greater understanding about the challenges and barriers experienced by small businesses. Small businesses use the Internet mainly to send electronic mail messages, and to conduct e-commerce, including financial transactions. Other uses include communicating internally and externally, thereby sharing data; providing customer service and vendor support; purchasing and selling products and services; and collaborating with other businesses (Schneider & Perry, 2001; Turban, Lee, King, Chung, 2006).

Small businesses are typically characterized by a flat organizational hierarchy and close proximity to coworkers, thereby contributing to effective communication practices comprised of informal channels (Vinten, 1999; Wickert & Herschel, 2001). Their communications are typically carried out face-to-face as the need arises, rather than applying a formal standard operating procedure. Small businesses lack human resources and budgets allocated for information security management. Many small businesses think they are not at risk because of the size of their business information. They display the "if it's not broke, don't fix it attitude." Due to the lack of IT, staff leads to no one thinking about the IT security of small businesses, thereby leading to the lack of IT security policies. Further, they are often pressured by their large manufacturers to adopt e-commerce. Their systems are often vulnerable, and are related to unpatched systems that are improperly configured. The next section discusses factors that inhibit small business adoption.

Factors Inhibiting E-Commerce Adoption

The factors that inhibit e-commerce adoption stem from two perspectives, namely, technology-related factors and relationship-related factors. Risks refer to the possibility of an adverse outcome and uncertainty. Risks can be derived both internally and externally, thereby causing a concern to the smooth flow of e-commerce operations.

Technology-Related Factors

Technology related factors are derived from misuse of IT, viruses, and the lack of confidentiality, integrity, and availability mechanisms. Some of the risks include viruses, worms, spy ware, spam, phishing scams, hackers, and bot networks. They impact the compatibility, infrastructure, complexity, and uncertainties of e-commerce systems and operations.

Preadoption Negotiation and Integration Challenges

E-commerce adoption, unlike traditional information systems adoption, demands high levels of negotiation, cooperation, and commitment from participating organizations. Selecting transaction sets, negotiating legal matters, and defining performance expectations can burn up hours of employees' time and demand financial and technological resources (Senn, 2000). This becomes even more challenging for small businesses, as they lack the technical skills and knowledge to negotiate effectively. Previous studies suggest an internal fear of opening their organization's systems to suppliers, as implementing e-commerce could affect critical business processes including procurement, inventory management, manufacturing, order fulfillment, shipping, invoicing, payments, and accounting, as in difficult to measure success (Nath, Akmanligil, Hjelm, Sakaguch, & Schultz, 1998; Senn, 2000; Storresten, 1998).

High Implementation Costs

Startup costs for implementing e-commerce applications can be high. These include connection costs, hardware, software, set up, and maintenance (Iacovou, Benbasat, & Dexter, 1995; Nath et al., 1998). Implementation costs may also include conducting an initial search costs, costs of writing contracts, and paying staff to update and maintain electronic databases.

Lack of Standards and Policies

Due to the small size and physical environment, most small businesses operate with a lack of formal standards and best-known practices, which can lead to potential compromises in network controls, maintenance, data ownership, internal and external security, and permissions (Riggins & Rhee, 1998; Senn, 2000). For example, current methods of standardization for structuring data exchanged in extranet applications totally ignore how e-commerce applications were designed to operate. Most small businesses do not know what policies to set and many do not even have a complete security policy in place (Marcella, Stone, & Sampias, 1998). Lack of established standards, regulatory policies, and best business practices can impact effective business operations in e-commerce.

Technology Uncertainties and Security Concerns

The proliferation of e-commerce applications has left most small businesses uncertain of e-commerce operations and unaware of the full potential of e-commerce technology (Ghosh, 1998). Uncertainties arise when small businesses encounter barriers in communication (such as incompatible e-commerce systems, or lack of uniform standards) that may lead to conflicts.

Relationship-Related Factors

Relationship-related risks are derived from mistrust among small business partners. Trust is defined as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer, Davis, & Schoorman, 1995).They arise from a lack of experience, training, and a lack of technical knowledge about the security concerns, task uncertainties, environment uncertainties, false impressions of unreliability, and concerns about the enforceability of transaction records in the electronic trade area. They examine opportunistic behavior, conflicting attitudes, poor reputation, lack of training, and reluctance to change in business partners.

Competitive Market Pressure

Small businesses that form electronic partnerships between buyers and suppliers or manufacturers and distributors are subjected to competitive pressures in the global environment that demand quality. Iacovou et al. (1995) suggest that external pressures and organizational readiness may affect e-commerce adoption. For most organizations, the biggest challenge is not if or when to consider an Internet commerce solution, but rather how to select the best Internet commerce strategies to develop and sustain competitive advantage.

Lack of Trust

Security is one barrier, but the real underlying factor is insufficient trust in the reliability of e-commerce systems to absorb the rapid increase in use (Keen, 2000). Despite the opportunities of Internet commerce, many small businesses

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