Influential Factors in the Adoption and Use of E-Business and E-Commerce Information Technology (EEIT) by Small & Medium Businesses

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ABSTRACT

This study addresses factors commonly examined in the research concerning adoption and use of e-business and e-commerce information technology (EEIT) by small and medium enterprises (SMEs). The primary objectives are to determine: 1) what barriers and incentives SMEs perceive in adopting EEIT; 2) how the level of adoption of EEIT influences perceptions of incentives and barriers; and 3) whether results vary depending on demographic characteristics of size, geographic market scope, or industry sector. This paper also examines how homogenous SMEs’ perceptions are in their consideration of EEIT adoption factors. Data were collected from 290 U.S. SMEs. The findings revealed that among 25 factors identified in the research literature as incentives or barriers to adoption of EEIT by SMEs, only 16 factors were significant in the population studied, 12 as incentives and four as barriers. Factors were perceived differently as incentives or barriers by adopters, intended adopters, and non-adopters of EEIT. A number of differences were found among SMEs based on demographic characteristics, particularly size and industry-sector.

Keywords: Electronic Commerce, Information Technology Adoption, IS/IT Planning, Small and Medium Enterprises (SMEs), Systems Implementation

INTRODUCTION

It has been widely suggested that e-commerce and e-business information technology (EEIT) offers new opportunities for small and medium enterprises (SMEs) to offset competitive disadvantages of size, resources, geographic isolation, and market scope. Despite the potential benefits, however, adoption and use of these technologies by SMEs has been slow. Even where governments or other agencies have promoted the benefits or provided incentives for small businesses, it has been primarily larger businesses that have benefited the most from this
technology. Similar results have been reported fairly universally around the globe, and the slow adoption and diffusion of EEIT among SMEs has been the subject of considerable research over the past 10 years especially in relation to identifying barriers to entry.

A significant body of research has been built up around application of various theories related to the adoption and diffusion of innovations (Anderson & Schwager, 2003; Al-Qirim, 2004, 2005; Caldeira, 2002; Chau & Hu, 2001; Harrison et al., 1997; Jensen, 2003; Knol & Stroeken, 2001; Lawrence, 2002; Magnusson, 2004; McCoy, 2001; Pflughoeft et al., 2003; Straub et al., 1995; Riemenschnieder & McKinney, 2001; Silvia, 2004; Tatnall & Burgess, 2004; Venkatesan, 2003; Venkatesh & Brown, 2001; Venkatesh et al., 2003; Windrum & de Berranger, 2004; Wyner & Regan, 2005). This research reveals many factors believed to influence the decision making process. Much of this research has been exploratory in nature and has employed surveys, interviews and case studies. Generally these studies have hypothesized specific barriers or incentives to adoption and use of EEIT by SMEs and then tested for their significance based on a variety of theoretical models. The literature search produced a fairly lengthy list of variables with a good deal of inconsistency in the naming, grouping, and perceived influence among them (Huang, Hart & Wiley, 2004). The literature also suggests that SMEs differ in important ways from their larger cousins so that research in larger organizations is not necessarily applicable to SMEs. Moreover, even differences among SMEs in demographic characteristics such as size, location, market scope, and industry sector, may call into question the generalizability of research results across all SMEs. Even though the number of research studies is growing, the conditions that lead to the successful use of EEIT by SMEs remain unclear.

In order to clarify the nature and effect of the many variables associated in the literature with the adoption and use of EEIT by SMEs, we took the approach of consolidating these variables into a neutral list of factors to determine whether SMEs perceived them as a positive or negative influence on their decisions about adopting and using EEIT. In addition, the survey collected data about the awareness and interest of SMEs in expanding their markets and the demographics of current and future markets.

The primary objectives of the research were to determine: 1) what barriers and incentives SMEs perceive in planning for or implementing EEIT; 2) the extent to which level of adoption of EEIT influences these perceptions of incentives and barriers; 3) whether results vary depending on demographic characteristics such as size, geographic market scope, or industry sector. The theoretical rationale for the study is based on IT adoption and diffusion theory, and the variables were culled from the related literature.

LITERATURE REVIEW AND RATIONALE

Research related to incentives and barriers to technology adoption is found in the literature of several different disciplines including management, organizational behavior, communications, computer science and information systems, marketing and sociology. Studies span many types of businesses and industries around the globe. This section provides a brief overview of the research literature related to the following areas:

1. Theoretical frameworks related to adoption and use of technology
2. Variables related to adoption and use of EEIT by SMEs
3. Demographic characteristics of small and medium enterprises (SMEs)

Theoretical Frameworks for IT Adoption and Use

Many researchers have applied innovation adoption and diffusion models to the study of barriers and incentives for SME adoption and use of EEIT. Research specifically focusing on EEIT adoption in SMEs includes: AlQirim