

Networks and Electronic Commerce Adoption in Small Businesses

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INTRODUCTION

The adoption and diffusion of electronic commerce (e-commerce) in small businesses remains a critical area of investigation in information systems (IS) literature. A number of studies (Miles, Preece, & Baetz, 1999; Overby & Min, 2001) have suggested that in order to accommodate a technologically uncertain and globally focussed economy brought on by the advent of e-commerce, many small businesses are turning toward some form of alliance or network where the locus of the impact of change is interorganisational rather than organisational. Alliances or networks are formed entities that have a defined set of shared values, roles, responsibilities, and governance. Through involvement in such networks, small businesses not only find a ready source of technical and marketing expertise, but the very nature of the network “buffers” the impact of global market turbulence. This would suggest that belonging to a network is an important indicator of successful e-commerce adoption. However, a number of authors (Drakopoulou-Dodd, Jack, & Anderson, 2002; Dennis, 2000; McBer & Company as cited in Dennis, 2000) have found that many small businesses avoid network arrangements. Despite the widespread existence of networks, no research studies to date have formally compared networked and nonnetworked small businesses in relation to e-commerce adoption. This article presents the results of an exploratory study that aims to correct this oversight.

BACKGROUND

According to the European Commission (2003), a *small business* is defined as an organisation that employs less than 50 employees. However, apart from size, small businesses are characterised by a number of other unique

features that set them apart from their larger counterparts. These are summarised in Table 1. The presence of these unique features in small businesses creates a challenging environment in which to implement new technologies. In recent years, government organisations around the world have funded projects that assist small businesses in their adoption of internet and e-commerce technologies. At a broad level, *e-commerce* involves the application of Web-based information technologies toward automating business processes, transactions, and work flows (Kalakota & Whinston, 1997). Similarly, the government-funded projects are diverse and range from establishing a simple Internet presence to building virtual business networks (for examples see Dahlstrand, 1999; Damanpour, 2001; Jeffcoate, Chappell, & Feindt, 2002; Papazafeiropoulou, Pouloudi, & Doukidis, 2002; Smith, Boocock, Loan-Clarke, & Whittaker, 2002).

Despite early predictions that small business would benefit from e-commerce adoption, recent studies (Riquelme, 2002; Roberts & Wood, 2002; Barry & Milner, 2002) have shown that it is larger businesses that have more readily adopted this technology. As a result, research studies have begun to examine more closely the processes by which small businesses make their e-commerce adoption decisions. The driving forces or reasons behind e-commerce adoption, in particular, have been investigated in some detail. A summary of the outcomes of these investigations is shown in Table 2. The driving forces can be divided into two types: external and internal. External forces include the pressures and/or influences from parties outside the organisation such as customers, suppliers, and competitors, while internal forces are perceived benefits the small business believes it will achieve through e-commerce adoption.

Unlike previous technological initiatives, e-commerce is a “disruptive” innovation that radically transforms the way a company does business. For small businesses,

Table 1. Features unique to the small business sector

Unique Features of Small Businesses	Related Literature
<i>Small businesses are product oriented, while large business is customer oriented.</i>	Reynolds et al. (1994)
<i>Decision making is intuitive, not based on detailed planning.</i>	Bunker & MacGregor (2000) Reynolds et al. (1994)
<i>Small businesses have a strong owner influence.</i>	Bunker & MacGregor (2000) Reynolds et al. (1994)
<i>Small businesses are riskier than large business and have higher failure rates.</i>	Walker (1975) Brigham & Smith (1967)
<i>Small businesses have difficulties obtaining finances.</i>	Gaskill & Gibbs (1994) Reynolds et al. (1994)
<i>Planning in small businesses is informal and does not entail exhaustive study.</i>	Tetteh & Burn (2001) Miller & Besser (2000) Reynolds et al. (1994)
<i>Small businesses have poor record keeping.</i>	Markland (1974)
<i>Small businesses are more reluctant to take risks.</i>	Walczuch, Van Braven, & Lundgren (2000) Dennis (2000)
<i>Family values intrude in small businesses because they are often family operated.</i>	Dennis (2000) Bunker & MacGregor (2000) Reynolds et al. (1994)
<i>Small businesses have a strong desire for independence and tend to avoid joint business ventures.</i>	Dennis (2000) Reynolds et al. (1994)
<i>Small businesses have centralised management.</i>	Bunker & MacGregor (2000)
<i>Small businesses have a lack of technical staff and IT expertise.</i>	Martin & Matlay (2001) Bunker & MacGregor (2000) Reynolds et al. (1994)
<i>Small businesses do not have control over the environment and face external uncertainty.</i>	Hill & Stewart (2000) Westhead & Storey (1996)
<i>Small businesses make limited use of technology.</i>	Poon & Swatman (1997) MacGregor & Bunker (1996) Abell & Limm (1996)
<i>Small businesses have a limited market share and often operate in niche markets.</i>	Quayle (2002) Hadjimonolis (1999) Lawrence (1997)
<i>Small businesses rely heavily on few customers.</i>	Reynolds et al. (1994)
<i>Small businesses have a narrow product/service range.</i>	Bunker & MacGregor (2000) Reynolds et al. (1994)
<i>Small businesses have practical but narrow skills and experience.</i>	Bunker & MacGregor (2000) Reynolds et al. (1994)

adopting e-commerce has produced both positive and negative effects. Studies by Raymond (2001) and Ritchie and Brindley (2000) found that while e-commerce adoption has eroded trading barriers, this has often come at the price of altering or eliminating commercial relationships and exposing the business to external risks. Lawrence (1997), Tetteh and Burn (2001), and Lee (2001) contend that e-commerce adoption fundamentally alters the internal procedures within small businesses. Indeed, Lee adds that the biggest challenge to a small business is not to find the best e-commerce model, but to change the mindset of the organisation itself. For those that have developed an organisation-wide strategy, these changes can lead to an increase in efficiency in the firm. For those who have not developed this strategy, this can reduce the flexibility of

the business (Tetteh & Burn) and often leads to a duplication of the work effort (MacGregor, Bunker, & Waugh, 1998). These are only some of a number of studies that have examined both the benefits and disadvantages of e-commerce adoption in SMEs. A summary of these studies can be found in Table 3.

Recent studies (Keeble, Lawson, Moore, & Wilkinson, 1999; Miles et al., 1999; O'Donnell, Gilmore, Cummins, & Carson, 2001; Overby & Min, 2001) have suggested that small businesses are increasingly turning toward formal and informal alliances or networking arrangements as a mechanism to overcome the disadvantages associated with e-commerce adoption. According to Achrol and Kotler (1999, p. 148), a network is an independent coalition of task- or skill-specialised economic entities (independ-

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