

SMEs Amidst Global Technological Changes

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BACKGROUND AND IMPLICATIONS

In small countries such as New Zealand, small to medium-sized enterprises (SMEs) are defined as enterprises employing 19 or fewer employees. Small enterprises are defined as those employing zero to five full-time employees (FTEs) (often called microbusinesses), and medium-sized enterprises as those employing six to nineteen FTEs. Other countries, such as the United States and European countries, define their SMEs as having a much larger number of employees (200–500 or fewer).

SMEs contribute significantly to the economies and to the employment levels of different countries in the world. For example, SMEs constitute around 95 percent of enterprises and account for 60–70 percent of employment within the countries of the Organisation for Economic Cooperation and Development (OECD, 1997) and other countries across the globe, including the United States. Not to forget that SMEs are usually the source of most of the profound inventions and innovations (Iacovou, Benbasat, & Dexter, 1995).

Historically, SMEs have been accused of being uncritical about the strategic importance of IT and its use in their businesses. This laggardness in adopting or using IT in business was attributed to various organisational, technological, and environmental deficiencies in SMEs. The recent emergence of the Internet, in general, and the Web, in particular, revolutionises business activities (Abell & Lim, 1996) and promises to provide unprecedented opportunities to SMEs to expand in scope and in market reach.

However, despite the apparent media hype (Premkumar & Roberts, 1999) and the enthusiasm among academicians (Adam & Deans, 2000; Abell & Lim, 1996; *Infotech Weekly*, 1997; Poon & Swatman, 1999a) and professionals (Deloitte, 2000; IDC, 1998; PWHC, 1999) about electronic commerce (EC), the published EC research portrayed a gloomy picture about EC uptake and use by SMEs. Thus, investigating reasons behind such laggardness in adopting and in using EC effectively is essential. This research attempts to highlight some of the important issues that could assist in bridging the existing divide between SMEs and EC. These issues could be of interest to SMEs and to other stakeholders interested in SMEs and EC.

ELECTRONIC COMMERCE SUCCESS IN SMES

In the SMEs scenario, different research emphasised the different EC advantages to SMEs (Abell & Black, 1997; Abell & Lim, 1996; Adam & Deans, 2000; Deloitte, 2000; Poon & Swatman, 1997, 1998, 1999a,b; PWHC, 1999):

1. The Internet is an efficient communication medium and a vast resource for information. The SMEs could use e-mail technology to communicate efficiently with their buyers and suppliers, reducing communication costs, including the buying of expensive equipment (e.g., fax/telex).
2. The Internet provides added-value services to customers/partners/suppliers by providing different primary/supplementary information about the organisation's industry, products, and services on their Web sites. This could result in increasing the loyalty and the stickiness of their customers (customer resource management; CRM). The preceding tangible and intangible tactics are of strategic importance in retaining and increasing customer bases by increasing switching costs.
3. The Internet would provide new opportunities to SMEs, otherwise not possible before the introduction of the Internet, such as the ability to reach global markets and the ability to mass-customise products and services to appeal to the different tastes of global consumers.
4. SMEs would adopt EC for image-enhancement purposes. Having an Internet account (URL, dot-com, Web page) and printing an e-mail address on business cards and letterhead were reported as major drivers as well. Whether the SMEs were able to elevate from such initial depiction to a more strategic posture in adopting more strategic EC initiatives, such as selling and buying online, is worth further investigation from the perspective of the different countries.

On the other hand, the EC research highlighted the following impediments:

1. Technological impediments: e.g., security (privacy concerns, viruses, e-payments), legalities (enforceability of contracts, confirmations of receipt, prosecutions), policies (lack of global or unified standards),

- telecommunication services [bandwidth, convergence, reliability and quality of services (QoS)]
2. Organisational impediments: cost, busy nature, small size and limited resources, lack of knowledge/expertise about EC
 3. Environmental impediments: Relating to the lack of regulatory frameworks pertinent to the above technological impediments highlighted in (1), above, either at the one-country level or even at the global level.

In the light of the above advantages and impediments, most of the existing EC research found most of the SMEs not witnessing real benefits (direct sales and tangible profits) in the short term due to difficulties in selling products over the Internet (Adam & Deans, 2000; Poon & Swatman, 1998, 1999a). Face-to-face interactions with customers and buyers proved to be more dominating than electronic interfaces (Ba et al., 1999; Poon & Swatman, 1997). They found the key motives for SMEs to adopt EC are the long-term indirect benefits, e.g., ongoing business transformation and new business initiatives (new opportunities), which could resemble a preparatory stage (infrastructure) for the long-run direct benefits stage (secure returning customers and form long-term business partnerships) (Poon & Swatman, 1998, 1999a). However, the biggest challenge for the SMEs here is to succeed in moving from such simple and preparatory EC initiatives (driven mostly by hype from the media, professionals, and researchers) to more sophisticated and strategic initiatives (e.g., efficiency à effectiveness à strategic advantage).

On the one hand, having EC requires an apparent investment in different areas: technological infrastructure upgrades or replacement, EC integration with existing IT systems, EC consultants, investments in bandwidth and applications (Web site, intranet, extranet, etc.). However, this considerable investment in the EC infrastructure is necessary to make it possible to process information efficiently, handle heavy traffic, and deliver satisfactory performance. SMEs would perceive this to be an expensive endeavour and, hence, represent a barrier to EC adoption (MOED, 2000; PWHC, 1999). It is worth mentioning here that unlike the investment in information science/information technology (IS/IT), which requires high initial investment and smaller ongoing maintenance and support costs, EC would require considerable continued investments in upgrading, overhauling, and replacing the whole EC system with an innovation or new designs, etc. Most probably, the investment in EC would materialise in the long term only as highlighted earlier (Poon & Swatman, 1998, 1999). However, this depends on different factors, such as the ability to develop economies of scale (Ba et al., 1999; Poon, 2000), e.g., having a well-established online customer base and ongoing business that enables the firm to sell massively and cheaply at the same time.

With the introduction of new EC technology like the intranet, Internet electronic data interchange (EDI), extranet, Web site, etc., there would be some fundamental changes in work processes and current practices (Alexander, 1999; Behrendorff & Rahman, 1999). EC is not only a new way of selling and marketing, but also a new way of thinking, which requires a change of mindset. Teo, Tan, and Buk (1998) pointed to the fact that organisations attempting to adopt the Internet should expect a possible change in communication and culture patterns. EC is changing the way business is conducted, even with individual customers. Firms that are able to streamline their products or processes or delivery agents on the Internet will be able to shift entirely to the pure EC arena (Choi et al., 1997). The success stories of small businesses using the Internet are apparent and are publicised and reported by the media. However, most of the businesses existing on the Internet are not necessarily transacting information-based products only, but rather complementing the sale and the delivery of a physical product with such things as publishing information about the usability of a physical product (e.g., user manuals), tracking the shipment, etc. (Teo et al., 1998).

Most of the IS literature on SMEs (Blili & Raymond, 1993; Cragg & King, 1992, 1993; Harrison et al., 1997; Jarvenpaa & Ives, 1991; Thong, 1999; Thong & Yap, 1995, 1996) and EC in SMEs (Poon & Swatman, 1998, 1997, 1999a, 1999b) emphasises the role and the characteristics of the manager (usually the owner) as a product champion. Poon and Swatman (1998, 1999a) pointed to the manager's role in their EC study, where they found direct management involvement was the norm in the different cases. Although the managers of small business lack formal IT qualifications and training, they were champions in adopting EC, specifically in microbusinesses, where the sole decision maker was the director of the business.

Due to the recent nature of EC, it is expected that the adoption decision for EC would include some sort of high-risk elements. Hence, the adoption decision for EC would require a risk-taking manager. Poon and Swatman (1997, 1998, 1999a) found that the entrepreneurial perspective differed between the different firms in their study. Managers/owners embraced EC technology and attempted to exploit it to the maximum. The managers who championed Internet adoption in their organisations demonstrated an innovative and risk-taking attitude toward EC, despite lacking formal IT training.

Adam and Deans (2000) and Poon and Swatman (1998) pointed to the market scope of small business, where SMEs transacting with international markets would perceive many advantages from the Internet, such as cost savings and market communication in comparison with other SMEs operating in local markets. In this scenario, EC is perceived to increase global competition and provide different opportunities to SMEs. Poon and Swatman (1999a) asserted that

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