



# Implications in e-Commerce Research in Small Business

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## ABSTRACT

*It is believed that the recent emergence of electronic commerce (eCommerce) in the early 90s could provide different opportunities to small and medium-sized enterprises (SMEs) in overcoming part of their technological, environmental, organizational, and managerial inadequacies. However, recent research portrays a gloomy picture about eCommerce uptake and use in SMEs. Therefore, the implication here is twofold. Initially, there is a need to generate more eCommerce research that could penetrate much deeper into main impending issues pertaining to the SMEs in their potential uptake and use of eCommerce. On the other hand, eCommerce is characterized of being embryonic but growing very fast and fragmented across the different disciplines, which makes the task of capturing its different perspectives a very complex task. The preceding two implications represent the greatest challenge for researchers and professionals interested in undertaking eCommerce research in SMEs. In line with the above implications, the first objective of this research aims at capturing the different eCommerce perspectives from the SMEs point of view and the second objective aims at capturing the eCommerce perspective from the theoretical and the methodological point of view. Addressing the preceding implications in this research could shed some light into some of the grey areas in the eCommerce research in SMEs.*

## INTRODUCTION

In recent years, small to medium-sized enterprises (SMEs) have been shown to contribute strongly to national economies. Generally, SMEs constitute around 95 percent of enterprises and account for 60 to 70 percent of employment within the countries of the Organization for Economic Cooperation and Development (OECD, 1997). The recent emergence of the Internet in general and the World Wide Web (WWW or Web) in particular has revolutionized business activities (Abell & Lim, 1996). The open standards of the Internet bring electronic commerce/business (eCommerce) within the reach of the smallest of firms and help reduce the gap between large and small firms (Kalakota & Whinston, 1996; MOC, 1998). E-Commerce is becoming a more and more essential tool for organizations in general, and for SMEs businesses in particular, in gaining competitive advantage and in accessing global markets (Poon & Swatman, 1995). The online economy introduces unique opportunities to SMEs for open and free trade because it avoids tariffs and tax, and lessens the impact of the great geographical distances and time that separate SMEs from potential opportunity across the globe (Abell & Lim, 1996; Cameron & Massey, 1999; MOC, 1998; Peters & Paynter, 1999).

However, despite the apparent media hype (c.f. 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 eCommerce, the available eCommerce research is fragmented and did not introduce significant insights about true eCommerce success/failure and penetration in SMEs (c.f. Abell & Lim, 1996; Riggins & Rhee, 1998; Turban, Lee, King & Chung, 2000). Existing empirical

research focusing on success factors of eCommerce (Web sites) is anecdotal, exploratory in nature, and did not provide sufficient insights pertaining to the combinations of these factors (Liu & Arnett, 2000). Above all, there is no detailed knowledge about the owners of the small business and the process of running the small business (Blackburn & Stokes, 2000). There is still a lack of knowledge about the nature and the extent of SMEs support and needs and the mechanism for delivering these needs effectively (Hoffman, Barejo & Bessant, 1998).

The existing eCommerce studies were mostly surveys, exploratory in nature and focused mainly on the growth of the Internet in terms of usage, advantages and impediments (Abell & Black, 1997; Abell & Lim, 1996; Adam & Deans, 2000; Deloitte, 2000; PWHC, 1999; Poon & Swatman, 1995; 1997; 1998; 1999a; 1999b). Similarly, issues concerning how and why businesses are using the Internet are also scarce (Adam & Dean, 2000; Abell & Black, 1997; Abell & Lim, 1996; Deloitte, 2000). In a recent study, it was found that seventy three percent of surveyed small businesses connected to the Internet. However, the potential use of the Internet in business was rarely explored (Waikato, 1999), which cast serious doubts about the effective use of the Internet and eCommerce in SMEs. The preceding findings meant that using "Internet adoption" as measure for Internet success is unwarranted and is quite misleading. Findings from a survey study indicate the lack of knowledge among SMEs about eCommerce and its applications (Deloitte, 2000). Despite the high adoption rates of e-mail, domain names, and web sites, SMEs are lagging other countries in the use of eCommerce in business and in the adoption of eCommerce-technology in general (Deloitte, 2000). In spite of the different perceived advantages, the Internet is used mainly as a communication tool and Web sites for publishing organizational information only, but rarely used in conducting commercial transactions. The SMEs approach towards eCommerce adoption is usually more reactive than proactive, generally doing just enough to meet their buyers/suppliers needs (Chen & Williams, 1998). This laggardness in eCommerce adoption applies to different SMEs in different countries such as Ireland (McDonagh & Prothero, 2000) and the U.S (Alexander, 1999; CB, 2000).

This shortage of detailed eCommerce research, however, is most likely the result of only the recent emergence of the eCommerce field in the early nineties and the fact that it is still in the evolutionary phase, despite the fact that it is progressing in a revolutionary manner and in different directions. On the other hand, this could also be the result of the multi-perspectives that characterize eCommerce. Capturing the multi faceted perspectives that characterize the eCommerce field represents the greatest challenge for researchers and professionals interested in SMEs and eCommerce. This can further fragment the eCommerce field across the different disciplines. Thus, the implications here and hence, the book's objectives are divided into two parts. Firstly, there is a need to generate more eCommerce research tackling critical and contemporary issues in SMEs and secondly, there is a need to establish a theoretical foundation for the eCommerce field at least at the IS discipline.

Thus, the first objective of this research aims at capturing the different eCommerce perspectives from the SMEs point of view and the second objective aims at capturing the eCommerce perspective from the theoretical and the methodological point of view. Addressing the preceding implications in the current research could shed some light into some of the vague areas in the eCommerce research in SMEs.

## ELECTRONIC COMMERCE RESEARCH IN SMEs

### The Impact of E-Commerce on SMEs

In addressing the first implication, one should note that eCommerce impacts organizations differently and immensely. eCommerce impacts organizations differently in the sense that eCommerce introduces a new set of features that are unique to its perspective. Past studies confirmed the former assertion and found that facilitation factors vary according to the innovation type (Swanson, 1994). Issues or implications such as security and legal concerns, the compatibility of the new medium with the organization and its employees or in seeing customers through electronic interfaces rather than the traditional face-to-face interactions (social impact), complexity of the field and the lack of knowledge about the new field and its business models were only few of the mentioned impediments. Further, eCommerce introduces unprecedented opportunities and business models, which before its inception were not possible.

E-Commerce impacts organizations immensely and holistically. It is of paramount importance to emphasize here the importance of the integration perspective and to explore the holistic impact of eCommerce on organizations. It has been found that the earlier research tackling the strategic impact of IT on organizational performance was confined to a supporting role. Further, earlier research point to the dominant internal nature of the IT field in organizations (e.g., transaction processing, back-office automation, etc.). However, with the emergence of eCommerce this internal and supporting perspective grew to become part of the strategic behavior and the essence of the corporate strategy of many firm seeking greater dominance in the marketplace. However, eCommerce envisions streamlining the whole operations and processes inside (e.g., Intranet) and outside (buyers and suppliers, e.g., EDI, XML, Extranet/VPN, Web sites, etc.) the organization. One possible impact of eCommerce is that it could transform the organization from being a purely physical organization (e.g., bricks and mortar) to a virtual one (e.g., dot com, clicks). At the heart of the transformation path is the level of eCommerce impact and whether the organization is able to increase its levels of integration between internal/external systems and eCommerce technology (e.g., strategic eCommerce (alignment), outsourcing, change management, ERP, procurement, BPR, CRM, SCM, etc.) reaching to a level where it can develop successful digital business models, e.g., the ability to digitize its processes, products, and the delivery agent (Choi et al., 1997). However, the preceding approach depends on issues pertaining to the products produced by the different SMEs, which in turn points to industry-specifics and hence, addressing that from the perspective of the different SMEs across the different industries is of paramount importance in order to generate rich insights about eCommerce adoption and diffusion among the different SMEs.

In addition to the product-industry perspective, the depth of the eCommerce impact (or the transformation) depends on other factors as well pertaining to the organization (e.g., product, management, structure, resources) itself and to the environment surrounding it (macro: political, economical, social, technological; micro: competition, suppliers and buyers, partners, technology vendors, etc.) (c.f., Al-Qirim & Corbitt, 2002a, 2002b; Teo et al., 1997; Vadapalli & Ramamurthy, 1997). Thus, identifying the most significant contexts and factors on eCommerce success/failure in SMEs and hence, explaining their impact on SMEs is of paramount importance to researchers and to professionals. Despite the high adoption rate for the Internet, recent eCommerce adoption research report limited use of eCommerce in SMEs (Al-Qirim & Corbitt, 2002b; Levy & Powell, 2002; Walczuch et al., 2000). Thus, introducing new issues, concepts, implications, contexts, techniques and tools that could assist in unveiling part of the varied facets that characterise the eCommerce field in SMEs could contribute highly to

our understanding about one of the fastest growing and dynamic areas in the history of mankind, the information and knowledge economy age, the Internet age. Assisting the SMEs in transforming (e.g., mindset, practices, processes) to the electronic commerce arena represents the greatest challenge for researchers and professionals interested in SMEs and eCommerce (c.f. Al-Qirim & Corbitt, 2002b).

### Theoretical and Methodological Implications

In addressing the second implication however, researchers are confronted with different hurdles: Researchers suggested the interdisciplinary nature of IS and its overlap with the computer science and the business disciplines (Clarke, 1999; Mumford, 1991). This argument could be extended to eCommerce technologies research being part of IS. On the other hand, the IS field is an applied discipline and lacks the presence of a solid theoretical foundation, which makes it possible to use a theory from a referenced discipline (Clarke, 1999; Garcia & Quek, 1997) such as management, marketing, economics, etc. The danger is represented here by the borrowed theoretical or methodological models becoming stereotyped or distorted (Garcia & Quek, 1997).

In relying on the IS literature in small business as a reference theory, it was observed that the few existing studies provide few insights into IS uptake and use by small business, even depicting mixed messages (Levy et al. 1998). In their review of the IS literature in small business, Harrison et al. (1997) found most of the earlier research exploratory or descriptive in nature and concluded that the existing research focuses on particular business sectors and is fragmented in terms of the findings and the conceptual approaches used. However, most of the few existing published papers on SMEs and IS uptake and use by SMEs points to the devolvement of the small sector at different organizational, technological, environmental, and managerial levels (Bilili & Raymond, 1993; Cragg & King, 1992, 1993; Zinatelli et al., 1996; Levey et al., 1998). Thus, addressing such contextual impacts from the different disciplines could contribute significantly to IS and eCommerce research in SMEs.

Cragg & King (1993) found much of the earlier research tackling IS success in small business confirmed findings from studies set in large businesses. However, the difference between large and small business is quite fundamental (Bilili & Raymond, 1993; Cragg & King, 1993; Harrison et al., 1997; Levy et al., 1998; Thong, 1999). Being large and enjoying significant resources and capabilities, large organizations were the early runners in reaping benefits from the Internet (Poon, 1999). On the other hand, smaller businesses have much simpler structures, resources and capabilities and they are more susceptible to environmental and to internal constraints and therefore their mortality rate is much higher than larger firms. Thus, applying (and/or adapting (Greenwood & Grimshaw, 1999)) results from IS research within large businesses to smaller businesses is dubious at best (Jansen, 1998; Reimenschneider & Mykityn, 2000; Thong, 1999; Thong et al., 1996) and more accurate models targeting SMEs are required.

eCommerce research represents a new phenomenon, which imposes unprecedented challenges to current IS research approaches in capturing its multi faceted perspectives. Most researchers do either quantitative or qualitative (positivist or interpretive) research. Combining tools from both research methods is not common among researchers. However, recently some researchers in the IS (Gallivan, 1997; Nissen, Klein, & Herschheim, 1991) and in the eCommerce (Poon & Swatman, 1999) field, called for combining methods from each research paradigm within the same study. Others suggested using multiple methods (or methodological pluralism) within the same paradigm (e.g., qualitative paradigm) (Galliers, 1991; Mingers, 1996; Myers, 1997) to achieve more rigor and validity (Garcia & Quek, 1997). Gallivan (1997) indicated that in studying the impact of new technologies on organizations, e.g., eCommerce, the use of mixed methods provides opportunities to gather mixed level data, which can be useful in linking the individual to the organizational level of analysis. Further, the use of mixed methods approach could tie together positivist and interpretive researchers. On the other hand, combining methods is not a straightforward process and does poses serious implications (Mingers, 1996). In undertaking multiple research methodologies (e.g., surveys, focus group, case studies),

researchers are confused by the issue of triangulation, e.g., contrasting the findings of one method by findings produced by another method, indicating that those findings are unlikely to be the result of measurement biases. However, this positivist view of triangulation is misleading and direct comparison between methods is not possible and neither is validation by triangulation (Bloor et al., 2001). Therefore, using different methods in the same research to generate different insights pertaining to the investigated issues is highly encouraged rather than engaging in slaying methodologies.

Some researchers measure eCommerce capability in small business by adopting measures such as the ability to sell/buy products and services, collect payments online and even deliver products completely over the Internet to its intended buyers (music downloads) (Adam & Deans, 2000; PWC, 1999). However and as highlighted earlier, recent studies emphasising the status of the eCommerce field in SMEs pointed to the laggardness of the sector in terms of adopting and using eCommerce. Therefore, studying advanced eCommerce issues such as selling and buying goods and services and collecting payments directly over the Internet is likely to yield no useful results as such and even if they do exist, their results could not be generalised to the whole SMEs' community. Other eCommerce capability measures could be employed here such as a change in the financial turnover since adopting eCommerce, increase in market share, number of customers, business activities and sales enquiries, but however, is not feasible as the SMEs may not hold such figures in the first place and even if they retained such figures, it is highly unlikely that they would be keen to provide such privileged information (Poon, 2000). Another approach suggested in detecting eCommerce capability in SMEs is by segregating adopters from non-adopters alongside the different adopted eCommerce technologies by the different SMEs. Devising robust techniques and tools that could detect true eCommerce use and success in SMEs is essential to the eCommerce area in SMEs. For instance, Teo et al. (1998) and Thong (1999) suggested the use of continuous scales such as depicting the number of the different adopted eCommerce technologies as one measure for eCommerce adoption. Using multiple measures and scales within the same variable could yield more useful results.

There is no agreement upon what constitutes good definition for SMEs (Burgess, 1998; MOED, 2000; Zinatelli, Cragg & Cavaye, 1996) except on the fact that it is managed directly by its owner(s), e.g., owns most of the shares, provides most of the finance and makes most of the principal decisions (Cameron & Massey, 1999). Cameron and Massey (1999) found other countries and agencies employing different qualitative and quantitative limits (c.f. Hailey, 1987) in defining their SMEs, but however, the criterion most commonly used is the number of employees as it is a more reliable measure of firm size over time and between different sectors of the economy. However, they highlighted other characteristics of these businesses: i- personally owned and ii-managed and iii- not being part of a larger business enterprise. Premkumar and Roberts (1999) found most SMEs tend not to give their sales revenue for confidentiality reasons and therefore they utilized the number of employees as a proxy in their study.

Another implication represented here is in providing a criteria where results from countries that define their SMEs' size up to 500 employees (OECD, 1997) could be extended to other countries that defines their SMEs' size up to 19 employees (e.g., New Zealand) and vice versa. For instance, the Ministry of Economic Development defines New Zealand SMEs as enterprises employing 19 or fewer full time equivalent employees (FTEs) (MOED, 2000). However, for comparison purposes, MOED (2000) extended their definition of SMEs to include businesses employing up to a hundred FTEs. Based on the type of the industry, Burgess (1998) divided the SMEs to businesses belonging to the non-manufacturing (employing less than 20 people) or to the manufacturing (employing less than 100 people) sectors. Bollard (1988), in New Zealand, limited the size of small manufacturing firms to less than 50 employees and very small firms to less than 20 employees. The preceding measures and taxonomies would facilitate the exchange of results across the different countries.

## CONCLUSION

The current research aims at addressing issues that are of significant importance to researchers, students, and professionals interested in the eCommerce field in SMEs. This research addressed professional as well as theoretical issues relating to eCommerce, SMEs, theory, and methodologies. It is by following such an approach that eCommerce research in SMEs could take a shape of its own and results could be shared transparently across the different countries and institutions. As the eCommerce field is relatively new and fragmented across the different disciplines, addressing issues pertaining to its new perspectives and linking those with a suitable reference theory is of paramount importance before undertaking a research endeavor. The current research introduced some of the implications that surround the eCommerce research in SMEs and provided a framework where the different implications could be addressed and progressed. Thus, it is left to other researchers in the same field to expand on those issues from their perspectives in the different countries.

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