

Contents lists available at GrowingScience

## International Journal of Data and Network Science

homepage: [www.GrowingScience.com/ijds](http://www.GrowingScience.com/ijds)**Recent trend of e-business in Canada****Sara Orouji<sup>a\*</sup> and Aynaz Kafashan<sup>b</sup>**<sup>a,b</sup>*Growing Science, Canada*<sup>b</sup>*Department of Industrial Engineering, Iran University of Science and Technology, Tehran, Iran***CHRONICLE****ABSTRACT***Article history:*

Received: October 1, 2017

Received in revised format: November 16, 2017

Accepted: May 7, 2018

Available online:

May 12, 2018

*Keywords:**e-business**SMEs**Canada*

Canadian enterprises are increasingly implementing Internet based e-business technologies such as websites, web-based procurement, and e-commerce to reduce their cost and increase their productivity. While there have been several studies in different countries to locate the determinants of e-business adoption, the newness of business could preclude much understanding of the factors, which influence the evolution of e-business within firms. This paper performs a review on recent studies on the implementation of e-business adaptation in Canada. The study covers several studies accomplished on Small and medium enterprises (SMEs) after implementing e-business in their business activities and discusses the barriers and the challenges on enhancing the new technology.

© 2017 by the authors; licensee Growing Science, Canada

**1. Introduction**

Canadian enterprises are increasingly implementing Internet based e-business technologies such as websites, web-based procurement, and e-commerce (Chan et al., 1997; Amit & Zott, 2001). While there have been several studies in different countries of the determinants of e-business adoption, the newness of business could preclude much understanding of the factors, which influence the evolution of e-business within firms. There is significant interest in stages of e-business and the factors that move firms to move between e-business stages. Carnaghan and Klassen (2007) used panel data for approximately 4,700 business enterprises from 2001 to 2003 collected by Statistics Canada and performed some analyses to better understand which technological, environmental, and organizational factors proposed in the theoretical literature were associated with changes in e-business stages. Vlosky and Pitis (2001) investigated eBusiness capabilities of the forest goods industries in the USA and Canada and reported that good opportunities were available for eBusiness for the development of the forest products sectors in both countries.

\* Corresponding author.

E-mail address: [s\\_orouji@yahoo.com](mailto:s_orouji@yahoo.com) (M. Orouji)

In many enterprises, more and more eBusiness personnel adopt the various intelligent, automated trade systems based on the Internet (Lv & Hou, 2008; del Águila-Obra et al., 2007). In spite of the advantage of the increased sales and the operational efficiencies, a significant number of companies have not yet adopted e-business. In fact, Annual surveys of e-business use in Canada and other OECD countries have disclosed substantial differences between sectors in using online selling channels (Basiouni & McNaughton, 2011). Ouellet and McKeown (2008) presented some estimates on electronic commerce transactions by Canadian businesses and concluded by raising important research issues. For instance, despite the fact that online sales continue to increase at a double-digit pace in Canada, there was a concern as to why e-commerce uptake appeared to be relatively slow. Frohlich (2007) presented a survey accomplished by NPTA Alliance to predict business management in the paper, packaging, and supplies distribution channel in 2006. E-commerce on distributor businesses was an area where many distributors had seen an acceptance of e-business, and there was a growth in the perceived effect of e-commerce.

The advanced computing power and reduced acquisition expenses of information technology have helped the collection, storage, and processing of information quickly. Privacy legislation has been enacted to make sure that governments and businesses secure such collections in their systems and apply solutions to become compatible with the law. One such legislation in Canada is called the Personal Information Protection and Electronic Documents Act (PIPEDA), intended as a technology-neutral data protection law, where the principles are general and do not need firms to apply a specific vendor or technological tool. Szeto and Miri (2007) give a detailed analysis and taxonomy of implementation of several privacy-enhancing technologies (PET) to help Business-to-Consumer (B2C) enterprises to comply with PIPEDA. The analysis reports that a combination of PETs could help in complying with the ten PIPEDA privacy principles, with selection of the PETs to be appointed by the organization's privacy handling practices.

This paper presents a survey on recent advances on experiences of e-business adaptation among Canadian enterprises as well as Small and medium enterprises (SMEs).

## **2. Small and medium enterprises (SMEs)**

Small and medium enterprises (SMEs) all around the world are involved in e-commerce and e-business to help business operations and to increase the revenue from nontraditional sources solely based on Internet and e-business technologies (IEBT). In spite of the universal advantage of IEBT, there are evidences that the adoption of such technologies by SMEs could be influenced by contextual imperatives (Ifinedo, 2011). The spread of IEBT globally is absorbing many people and IEBT have enabled businesses to improve their reach and enhance productivity (Ifinedo, 2009). Ifinedo (2011) studied various factors affecting the adoption of IEBT in SMEs based in the Maritime region of Canada. The research model was based on the diffusion of innovation (DIT) and the Technology Organization Environment (TOE) frameworks. They used different factors including relative advantage, compatibility, complexity, management support, organizational readiness, external pressure, and government support to examine various hypotheses. The results showed no evidence of compatibility, complexity, government support, customers' and partners' pressures as significant predictors of IEBT adoption by the SMEs in the region.

Ifinedo (2008), in other work, investigated the effects of relevant factors on the acceptance of internet and e-business technologies in Atlantic Canada's SMEs by adopting a research framework with 9 hypotheses to examine the relationships. The author also performed a survey among 162 business owners, managers, etc. The survey found that SME's organizational readiness was positively associated with their intent to use Internet/business technologies; the two constructs of the technology acceptance model (TAM) were also determined to be significant mediators in the relationship between the man-

agement support construct and the dependent variable. However, no evidence was reported to recommend that management support could positively impact on the intent to use Internet/business technologies among Atlantic Canada's SMEs.

Raymond and Bergeron (2008) performed a survey to get some insight on the performance of the alignment between the e-business capabilities of SMEs and their business strategy based on Miles and Snow's recognized strategic typology that includes prospectors, analyzers, and defenders. They performed a survey on 107 Canadian manufacturers and the collected data were analyzed through correlation analysis. They reported that the ideal e-business profiles could vary in the association with the firms' strategic orientation, either as a defender, analyzer or prospector type. E-business alignment in their survey maintained positive performance for manufacturing SMEs in terms of growth, productivity and financial performance. Jutla et al. (2002) presented a conceptual model to be used by governments in building and sustaining an appropriate climate which facilitates the national adoption of e-business. The study concentrated specifically on the requirements of SMEs and recommended six categories of e-business readiness measures to be implemented for evaluating how a country could perform in terms of providing a positive e-business readiness climate with some examples in Canada, The Netherlands, Norway, and Singapore.

Archer et al. (2008) measured the importance of challenges in the SME community to the adoption of internet business procurement and supply chain solutions by executing a phone survey among 173 Canadian SMEs based on the type of business; distributors, retailers or manufacturers. They found limited differences between SME internet adopters and the others, which was a necessity for education for all SME management on the benefits and drawbacks to implement e-business solutions. Inter-organizational information systems required to link supply chain partners were detected to be a serious barrier to online solutions. There was a substantial dependency among supply chain partners in decisions on adopting online links. Flexibility, agility and capability of SMEs could help them use partial e-business solutions for low volumes of business, but this approach could be very inefficient when transaction volumes were large.

### *2.1 Loyalty in Canadian e-business*

The growth of Internet shopping create some motivation on a better understanding of how e-loyalty could be constructed online between businesses and consumers. In a study accomplished by Cyr et al. (2005), Web site design and culture were advanced as essential tool to Web site trust, Web site satisfaction, and e-loyalty in online business relationships. Using the data collected in Canada, the U.S., Japan and Germany, the study examined within culture options for design elements of a local vs. other countries' Web site and subsequent participant perceptions of trust, satisfaction, and e-loyalty. As anticipated, similarities were available among Americans, Canadians, and Germans, with the Japanese representing a different and unique case.

### *2.2. Cost effective e-business*

Bayard (2010) investigated the adoption of e-business information and communication technologies (ICTs) from 2001 to 2004 by Canadian companies. The results of his survey reflected the current literature on e-business adoption and technology adoption frameworks. In this survey, those firms invested in other forms of ICT had a higher orientation towards e-business; firms citing barriers associated with costs and delivery were related to lower e-business adoption; and firms that experienced advantages over time reported better coordination, lowered costs, and reaching new customers had higher e-business operations. In addition, the survey also discovered a significant proportion of variation in e-business adoption rates was contributed to unobservable characteristics specific to the company.

Davis (2003) explained the Canadian experience, based on Statistics Canada, in developing and implementing measures of electronic commerce. Davis and Vladica (2006a, 2006b) presented a structural model of sources of use value of Internet usages and e-business advantages among micro-enterprises.

The model investigated the direct effects of connectivity, website functionality, transaction capability, and e-business use on perceived business value, and indirect impacts of these capabilities on value creation via internal and external factors. The model was examined with PLS with data from 181 micro-enterprises in Eastern Canada. The results indicated that perceived business value could be predictable among micro-enterprises who implement specific Internet technologies and e-business solutions to sell goods or services online and look for expanding their market reach.

Nikoloyuk et al. (2005) provided some insights into the adaptations Canadian public sector auditors to the emergence of e-commerce and e-business in the delivery of public services. They performed a comprehensive review of the literature was completed as a foundation for building a semi-structure interview questionnaire implemented in a series of interviews with audit executives from 20 audit firms in Canada's public sectors. They reported a distinct disconnect between what could be reported in the literature and what was actually happened in practice. Practicing auditors did build a substantial interest in the effect of e-business on the audit profession specifically and on their client organizations generally. However, there was a significant disagreement about whether e-business could provide another set of technologically mediated changes, not much different from the many others of the past 30 years, or whether e-business could be truly disruptive in nature. Norton (2000) outlined the explosive growth of the commercial internet and the meteoric rise in public attention given to e-business, which is of increasing importance to the UK economy. Nevertheless, the author stated that in spite of initiatives launched by government and industry, the UK lags behind the USA, Canada and Australia in business and consumer e-business use.

### **3. Conclusion**

The use of information and communications technologies and e-commerce more specifically has been indicated as an important factor in building sustainable economic growth. In spite the fact that many of the early, exuberant and perhaps self-interested predictions of growth have proven to be incorrect, there is a little argument that e-commerce is having a significant transformative impact on economic and social activities and relationships throughout the world. These effects present big opportunities, but also creates some challenges for all countries including Canada. Many people may have been caught up in the enthusiasm and rushed to gather core numbers without understanding how they would be implemented or how they could be compared internationally. In that regard, defining e-commerce has been the source of some debate. The good news though is that international forums did exist to discuss and develop standards, and internationally-accepted definitions were put in place before legacy measurement programs became too entrenched in individual countries. In this paper, we have discussed the issues of e-business adoption in Canadian society and explained that the e-business has changed the business models in Canada by reducing costs and increasing the productivity.

### **Acknowledgement**

The authors would like to thank the anonymous referees for their insights on earlier version of this paper.

### **References**

- Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic Management Journal*, 22(6-7), 493-520.
- Archer, N., Wang, S., & Kang, C. (2008). Barriers to the adoption of online supply chain solutions in small and medium enterprises. *Supply Chain Management: An International Journal*, 13(1), 73-82.
- del Águila-Obra, A. R., Padilla-Meléndez, A., & Serarols-Tarres, C. (2007). Value creation and new intermediaries on Internet. An exploratory analysis of the online news industry and the web content aggregators. *International Journal of Information Management*, 27(3), 187-199.

- Basiouni, A., & McNaughton, R. (2011, June). Innovation in e-business models: a net-enabled business innovation cycle (NEBIC) theory perspective with empirical evidence. In *Technology Management Conference (ITMC), 2011 IEEE International* (pp. 114-120). IEEE.
- Bayard, J. (2010, August). Exploring e-business ICTs in Canada. In *Proceedings of the 12th International Conference on Electronic Commerce: Roadmap for the Future of Electronic Business* (pp. 110-118). ACM.
- Carnaghan, C., & Klassen, K. (2007, June). Exploring the determinants of web-based e-business evolution in Canada. In *ASAC* (Vol. 28, No. 4).
- Chan, Y. E., Huff, S. L., Barclay, D. W., & Copeland, D. G. (1997). Business strategic orientation, information systems strategic orientation, and strategic alignment. *Information systems research*, 8(2), 125-150.
- Cyr, D., Bonanni, C., Bowes, J., & Ilsever, J. (2005). Beyond trust: Web site design preferences across Cultures1. *Journal of Global Information Management*, 13(4), 25.
- Davis, T. (2003). E-commerce measurements and analysis. *Statistical Journal of the United Nations Economic Commission for Europe*, 20(3, 4), 289-301.
- Davis, C. H., & Vladica, F. (2006a). Use of Internet technologies and e-Business solutions: a structural model of sources of business value among Canadian micro-enterprises. In *System Sciences, 2006. HICSS'06. Proceedings of the 39th Annual Hawaii International Conference on* (Vol. 8, pp. 210c-210c). IEEE.
- Davis, C. H., & Vladica, F. (2006b). The value of Internet technologies and e-business solutions to microenterprises in Atlantic Canada. *E-Commerce and V-Business*, 125.
- Frohlich, W.H. (2007). 2007 NPTA Alliance distribution business forecast report. *Paper and Packaging*, 48(1), pp. 14-17
- Ifinedo, P. (2008). Factors affecting the acceptance of Internet and e-business technologies in Atlantic Canada's SMEs: A structural equation model. *AMCIS 2008 Proceedings*, 404.
- Ifinedo, P. (2009, September). Examining the impacts of relevant contextual influences on the extent of use of e-business technologies: Perspectives from Atlantic Canada's SMEs. In *Science and Technology for Humanity (TIC-STH), 2009 IEEE Toronto International Conference* (pp. 403-408). IEEE.
- Ifinedo, P. (2011). An empirical analysis of factors influencing Internet/e-business technologies adoption by SMEs in Canada. *International Journal of Information Technology & Decision Making*, 10(04), 731-766.
- Jutla, D., Bodorik, P., & Dhaliwal, J. (2002). Supporting the e-business readiness of small and medium-sized enterprises: approaches and metrics. *Internet Research*, 12(2), 139-164.
- Lv, X., & Hou, D. (2008, October). On the legal status of electronic agent in international trade. In *Management of e-Commerce and e-Government, 2008. ICMECG'08. International Conference on* (pp. 189-191). IEEE.
- Nikoloyuk, G. M., Marche, S., & McNiven, J. (2005). E-commerce impact on Canadian public sector audit practice. *International Journal of Public Sector Management*, 18(1), 83-95.
- Norton, J. (2000). The e-business imperative. *Info*, 2(5), 449-454.
- Ouellet, S., & McKeown, L. (2008). E-commerce in Canada: Trends and issues. MCCSIS'08 - IADIS Multi Conference on Computer Science and Information Systems; *Proceedings e-Commerce*, 275-279.
- Raymond, L., & Bergeron, F. (2008). Enabling the business strategy of SMEs through e-business capabilities: A strategic alignment perspective. *Industrial Management & Data Systems*, 108(5), 577-595.
- Szeto, M., & Miri, A. (2007, July). Analysis of the use of privacy-enhancing technologies to achieve PIPEDA compliance in a B2C e-business model. In *Management of eBusiness, 2007. WCMeb 2007. Eighth World Congress on the* (pp. 6-6). IEEE.
- Vlosky, R. P., & Pitis, O. T. (2001). eBusiness in the forest products industry: A comparison of the United States and Canada. *The Forestry Chronicle*, 77(1), 91-95.



© 2017 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).