

Australian SMES' And E-Commerce adoption

Newer Perspectives

Scupola, Ada

Published in:

Global Perspectives on Small and Medium Enterprises and Strategic Information Systems

Publication date:

2010

Document Version

Early version, also known as pre-print

Citation for published version (APA):

Scupola, A. (2010). Australian SMES' And E-Commerce adoption: Newer Perspectives. In P. Bharati, I. Lee, & A. Chaudhury (Eds.), *Global Perspectives on Small and Medium Enterprises and Strategic Information Systems: International Approaches* (pp. 132-144). Idea Group Publishing.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the public portal.

Take down policy

If you believe that this document breaches copyright please contact rucforsk@ruc.dk providing details, and we will remove access to the work immediately and investigate your claim.

Global Perspectives on Small and Medium Enterprises and Strategic Information Systems: International Approaches

Pratyush Bharati
University of Massachusetts, USA

In Lee
Western Illinois University, USA

Abhijit Chaudhury
Bryant University, USA

Director of Editorial Content: Kristin Klinger
Director of Book Publications: Julia Mosemann
Acquisitions Editor: Lindsay Johnston
Development Editor: Dave DeRicco
Publishing Assistant: Keith Glazewski
Typesetter: Keith Glazewski
Production Editor: Jamie Snavelly
Cover Design: Lisa Tosheff
Printed at: Yurchak Printing Inc.

Published in the United States of America by
Business Science Reference (an imprint of IGI Global)
701 E. Chocolate Avenue
Hershey PA 17033
Tel: 717-533-8845
Fax: 717-533-8661
E-mail: cust@igi-global.com
Web site: <http://www.igi-global.com/reference>

Copyright © 2010 by IGI Global. All rights reserved. No part of this publication may be reproduced, stored or distributed in any form or by any means, electronic or mechanical, including photocopying, without written permission from the publisher.

Product or company names used in this set are for identification purposes only. Inclusion of the names of the products or companies does not indicate a claim of ownership by IGI Global of the trademark or registered trademark.

Library of Congress Cataloging-in-Publication Data

Global perspectives on small and medium enterprises and strategic information systems : international approaches / Pratyush Bharati, In Lee and Abhijit Chaudhury, editors.

p. cm.

Includes bibliographical references and index.

Summary: "This book highlights the challenges faced by SMEs and how they are coping with the adverse environment through skillful use of IT and technologies such as Web 2.0, Enterprise Resource Planning (ERP), e-commerce, open source software, Business Process Digitization (BPD), and other emerging technologies"--Provided by publisher.

ISBN 978-1-61520-627-8 (hbk.) -- ISBN 978-1-61520-628-5 (ebook) 1. Small business--Management. 2. Small business--Information technology. 3. Information technology--Management. I. Bharati, Pratyush, 1970- II. Lee, In, 1958- III. Chaudhury, Abhijit, 1958- IV. Title.

HD62.7.G56 2010

658.4'038011--dc22

2009052561

British Cataloguing in Publication Data

A Cataloguing in Publication record for this book is available from the British Library.

All work contributed to this book is new, previously-unpublished material. The views expressed in this book are those of the authors, but not necessarily of the publisher.

Chapter 7

Australian SMEs and E-Commerce Adoption: Newer Perspectives

Ada Scupola
Roskilde University, Denmark

ABSTRACT

This chapter presents the results of a study on factors affecting adoption of e-commerce in small and medium size enterprises in Australia. The Tornatsky and Fleischer (1990) model is used in the investigation therefore the main group of factors taken into consideration are environmental, organizational and technological. Top managers employed in five companies located in the area of Brisbane, Queensland have been interviewed. The results are partially in line with similar studies on e-commerce adoption in SMEs. However many differences are also found. For example this study found that the external environment has an influence mainly through customers' requirements and pressure and availability of IT services, contrary to other studies that found that government and public administration have a big role. The organizational and technological contexts have also much relevance and include factors such as employees and CEO attitude.

INTRODUCTION

Small and medium size enterprises (SMEs) are an important sector of the economy and in some countries constitute more than 90% of businesses (OECD, 2002). The management issues, problems and opportunities faced by SMEs are very different from those faced by large corporations, therefore the need to focus specifically on this segment. In

this paper the Australian Bureau of Statistics (ABS) definition of SMEs is adopted according to which a small and medium size business is any business employing less than 200 employees (www.abs.gov.au). By drawing on Zwass (1996) e-commerce is here defined as the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunications networks. The literature on SMEs' e-commerce adoption is extensive and addresses different aspects among which technological characteristics such as

DOI: 10.4018/978-1-61520-627-8.ch007

barriers and benefits, predictors and determinants (e.g. Saffu et al., 2008; Chitura et al. 2008; Sabherwal et al. 2006; Jeyaraj et al., 2006; Walczuch et al., 2000).

The purpose of this chapter is to present the results of a study on adoption and implementation of e-commerce in Australian SMEs. There have been a number of studies investigating factors affecting SMEs' adoption of e-commerce both in Australia (e.g. Marshall et al., 2000; Akkeren and Cavaye 2000; Poon, 2000) and other countries (e.g. Scupola, 2003; Chen and McQueen, 2008). However, as the rate of e-commerce adoption and diffusion among SMEs increases and consequently SMEs become more acquainted and sophisticated in incorporating e-commerce in their operations it can be expected that the drivers and inhibitors of e-commerce adoption and implementation change as a result. Therefore there is the need of new studies to monitor such evolution and status quo. In addition this study distinguishes itself from previous literature on e-commerce adoption in Australia because by drawing on Tornatzky and Fleischer (1990) it mainly focuses on the organizational, technological and environmental factors.

The basic research question investigated in this paper is: "What are the factors affecting the adoption and implementation of e-commerce in small and medium size enterprises in Australia?" The study can be relevant both to academics and practicing managers interested in understanding the problems faced by SMEs in adopting e-commerce as a major business channel.

The chapter is structured as follows. The first section is the introduction and presents the motivation for the study and the research question. The second section presents a literature review of small business IT adoption frameworks with a focus on the model used in this paper and positions the study within the overall SME research landscape. The third section describes the research design and the data collection process, while a description of the companies is given in the fourth section. The following section is the main thrust of the chapter

and presents the analysis and discussion of the study results. The last two sections present future research directions and conclusions.

Factors Affecting IT Adoption: A Literature Review and a Research Model

A fundamental approach to studying the adoption of new technologies is the diffusion of innovations (Rogers, 1995). According to Rogers (1983:21), adoption is a decision to make full use of an innovation as the best course of action whereas rejection is a decision not to adopt an available innovation. In this study, adoption is defined as *the decision to make use of e-commerce to conduct business or transaction with trading partners*. There are two levels of adoption. Initially, innovation must be purchased, adopted and acquired by an organization. Subsequently, it must be accepted by the ultimate users in that organization also called implementation (Chong and Bauer, 2000; Rogers, 1995). Many studies have investigated explanatory variables for inter-organizational systems (IOS), IS and IT adoption both in small and large organizations (e.g. Saffu et al., 2008; Sabherwal et al. 2006; Jeyaraj et al., 2006; Kurnia & Johnston 2000; Chau & Tam, 1997). For example, in one well known study, Iacovou et al. (1995) identified three major factors responsible for EDI adoption: 1) organizational readiness, operationalized as financial and technological resources of the firm; 2) external pressures divided into competitive pressure and imposition by trading partners and 3) perceived benefits of the technology. By investigating seven case studies of small businesses, Iacovou concluded that "a large number of small organizations tend to lack the needed high organizational readiness and perceived benefits that are required for integrated, high impact systems" and that a major reason for small companies to adopt EDI is the external pressure by trading partners. Thong (1999) developed and tested a model including CEO, IS, organizational

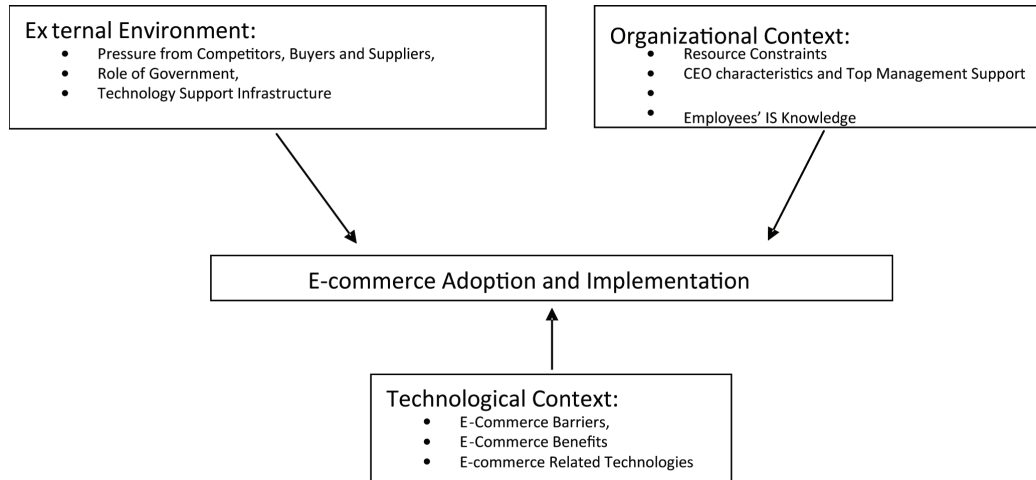
and environmental characteristics as explanatory variables for IS adoption. His results show that the CEO characteristics have a major importance in IS adoption. In addition, Palvia and Palvia (1999) focused on businesses with very few employees and conducted a study to measure and report satisfaction among small-business users” (Palvia and Palvia, 1999, p. 128). They found that IT satisfaction is influenced by business-related factors such as type of business, size, profitability, location and by owner characteristics. Kuan and Chau (2001) conducted a study to understand factors distinguishing adopters from non adopters. The main results show that perceived direct benefits were distinguishing adopters from non adopters, while perceived indirect benefits were not a distinguishing factor. Perceived financial cost and perceived technical competence was more an obstacle for non adopters than adopter firms and adopters perceived a higher government pressure and lower industry pressure than non adopters. Finally Wymer and Regan (2005) consolidated previous factors of e-commerce and IT adoption and determined their level of influence on the adoption decision. A set of 26 factors, used as variables in various adoption models from the literature, were presented in a neutral manner, without pre-classifying them as barriers or incentives, through a survey sent to SMEs. They found that the only consistent factor across all groups was cost as perceived barrier and concluded that factors are perceived differently by adopters, intended adopters and those not intending to adopt.

In this chapter a model developed by Scupola (2009) is adopted in the investigation (Figure 1). This model is based on the Tornatzky and Fleischer’s (1990) framework and is tailored to the specific context of SMEs e-commerce adoption. Tornatzky and Fleischer’s (1990) framework has three main explanatory variables for technology adoption: the external environmental context, the organizational context and the technological context. The external environment is the arena in

which an organization conducts its business. By conducting a thorough literature review, Scupola (2009) finds that the significant external factors that might influence SMEs’ e-commerce adoption are competitive pressures (Dholakia and Kshetri, 2004; Zhu et al., 2003), pressure from trading partners such as buyers and suppliers (Iacovou et al., 1995; Grandon and Pearson, 2003), the role of government (Kuan and Chau, 2001; Scupola, 2005), and technology support infrastructure such as access and quality of ICT consulting services (Scupola, 2003). The organizational context represents the factors internal to an organization influencing an innovation adoption and implementation (Tornatzky and Fleischer, 1990). Some of the organizational factors more cited in the literature are organizational size (Iacovou et al., 1995) and organizational structure (Jeyaraj et al., 2006). Scupola (2009) finds that CEO characteristics and top management support, employees’ IS knowledge, and resource constraints are among the most important organizational factors affecting e-commerce adoption. The technological context represents the pool of technologies available to a firm for adoption. These can be both the technologies available on the market and the firms’ current equipment. The decision to adopt a technology depends not only on what is available on the market, but also on how such technologies fit with the technologies that a firm already possesses (Tornatzky and Fleischer, 1990; Jeyaraj et al., 2006, Sabherwal et al. 2006; Wymer and Regan, 2005). In this chapter, the main factors considered are e-commerce relative advantage (e-commerce barriers and benefits) and e-commerce related technologies.

Bharati and Chaudhury (2009) in an introductory article for the special issue on “SMEs and Competitiveness—The Role of Information Systems”, of the International Journal of E-Business Research provide a review of the current state of research on information systems and SMEs. In this preface they develop a framework (Figure 2 below) that illustrates where the research on IS

Figure 1. A model of e-commerce adoption in SMEs (Scupola, 2009; adapted from Tornatsky and Fleischer, 1990 and Chau and Tam, 1997)

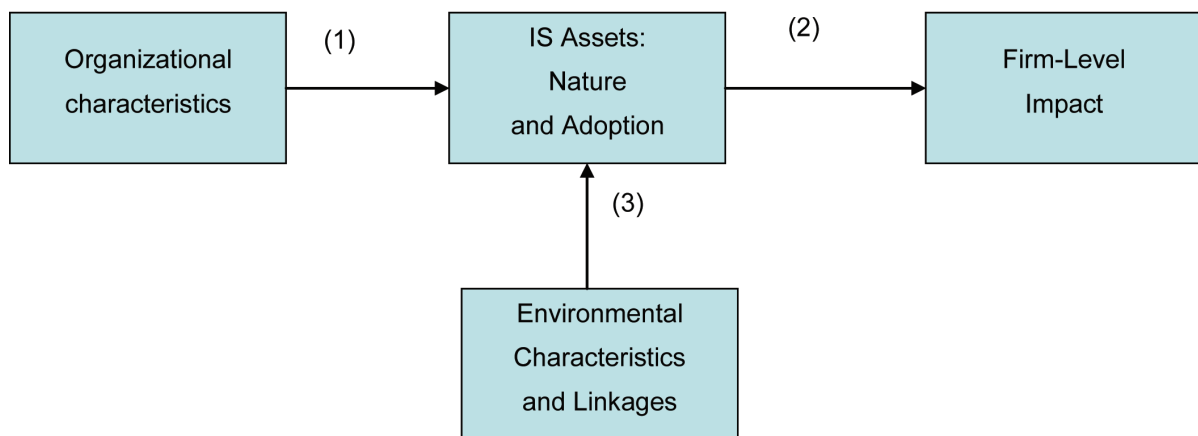


and SMEs has been concentrated and which areas are just beginning to be explored.

According to Bharati and Chaudhury (2009) this framework identifies the important antecedent factors such as organizational characteristics and environmental factors used in IS research for SMEs as well as the goals which have usually been adoption and nature of the IS asset. Increasingly, they also have found that firm-level

performance appear to be one of the goals to be causally explained. They identify three links between IS assets and other factors in Figure 1. Link 1 represents the relationship between organizational characteristics and IS asset adoption and utilization. With the advent of e-commerce in the world of SMEs, the research focus widened to include more antecedent factors and how IS assets related to the internet were affecting firm

Figure 2. The SME and IS research framework (source: Bharati, P., & Chaudhury, A. (2009). SMEs and competitiveness - The role of information systems. International Journal of E-Business Research, 5(1), i-ix.)



performance, which is represented with link 2 in Figure 2. Finally Bharati and Chaudhuryi (2009) argue that the relationship between environmental factors and IS assets has recently become a focus for research (link 3 in Figure 1). I would argue that the research conducted in this chapter, addressing the external environment, the organizational and the technological context can be positioned in links 1 and 2 in Figure 2.

RESEARCH APPROACH AND DATA COLLECTION

To investigate the research question a number of interviews have been conducted in different companies (Yin, 1994). To ensure that the companies chosen were subject to the same external factors, geographical proximity was defined as one criterion for selection. Another major selection criterion was that firms had to practice e-commerce. The companies participating in this study were chosen across different business sectors. Five companies in Brisbane area have been selected. They varied in regards to ownership, size and age. Due to the commercial confidentiality, names of the companies are kept undisclosed.

Face-to-face semi-structured interviews based on an open-ended questionnaire were used to collect the data. The interviews were conducted with CEOs, managers and other employees that had been involved in the adoption and implementation of e-commerce in the selected companies. The interview guide was sent to the participating companies prior to the interview. The interviews were conducted at the company location. Each interview lasted for about 1 hour. All interviews were tape-recorded and transcribed. Notes were also taken during the interviews. Each interview was transcribed in a sequential order (Miles and Huberman, 1994). Data have also been gathered from the company web sites, brochures and reports provided by the companies. The interview guide included two parts. Part one captured the back-

ground information about the respondents' gender, age, educational level, years with the organization as well as general information about e-commerce and e-commerce sophistication. In part two the questions focused on gaining information about factors affecting adoption and implementation of e-commerce with regard to the three contexts of the Tornatzky and Fleischer model as showed in Fig. 1. The data were analyzed intuitively by the author according to each context of Tornatzky and Fleischer (1990) by following Yin (1994) and Miles and Huberman (1994). The results of the study were sent to the companies to ensure external validity.

COMPANIES BACKGROUND

The age of the five firms ranged from 6 to 40 years. Firms' size varies from 2 to 140 employees. Two out of the five firms (F2 and F4) conduct international business. The degree of sophistication of the web pages varies from a static web page (F1, F4) to a web page offering the capability to download software components (F3) or offering online training and online customer support (F2). F2 has an Intranet. A summary of the companies' characteristics can be found in Table 1.

Company F1 is in the business of site and facilities management and has been founded in 1964. The company has 35 employees and has started using e-commerce in year 2000. The company is considering offering different kind of e-services to their tenants. The second company (F2) is a financial service software provider, established in 1983. F2 has three subsidiaries in Australia and serves the Australian and the New Zealand markets. The company has 140 employees and offers online customer support and online training. The third company's (F3) core business is software development. The clients are mainly SMEs, larger size companies and government departments, such as the department of education. They serve the local Brisbane market. The

Table 1. Characteristics of respective companies in the sample

| Firm | Business Type | Years in Business | Number of employees | International business | Year of e-commerce adoption | Internet use |
|-------------|-------------------------------------|--------------------------|----------------------------|-------------------------------|------------------------------------|---|
| F1 | Site and facilities Management | 40 | 35 | No | 2000 | Communication, searching information, online purchasing of office supplies, market research |
| F2 | Financial Service Software Provider | 20 | 140 | Yes | 1996 | Communication, online customer support, online training, relationship management. Intranet is used for news, HR management, and internal communication. |
| F3 | Software Development | 6 | 3 | No | 1997 | Communication, marketing, online promotion, offering of trial software from the web site, searching information. |
| F4 | Manufacturing | 32 | 80 | Yes (limited) | 1996 | Communication, information retrieval, chasing new customers, sending invoices and purchasing orders, online purchasing of office supplies. |
| F5 | Human Resource Consulting | 15 | 2 | No | 2002 | Advertising, e-banking, customer relationship management, searching information, communication. |

company employees 3 people including the CEO/owner. It is possible to download some software application components from the web side for trial by the client companies, but they do not charge for it yet. The fourth company (F4) was established in 1971 and serves the national and the international market. F4 has 80 employees and manufacturers point of sale objects such as displays and illuminated signs. They have adopted e-commerce in 1996. The fifth company (F5) is a private practice in Human Resource Management, serving the local market and all Queensland. The customers are government agencies and private services. The company is 15 years old and is a family driven business.

ANALYSIS

This section is structured around the three contexts of the model of Figure 1: environmental, organizational and technological context. The

factors belonging to each one of these contexts are summarized in Table 2, Table 3 and Table 4 respectively.

Environmental Context

As it can be seen from Table 2 the main external factors that have influenced adoption and implementation of e-commerce have been pressure from customers as also found by Iacovou (1995) and Scupola (2003) and quality of IT services. In fact 4 out of 5 companies state that these factors had a big influence in e-commerce adoption. Regarding the quality of IT services, small companies were generally satisfied with the consulting services, while very dissatisfied with the quality of the service provided by Internet service providers. All the companies in the sample had changed Internet service provider several times, and only recently they started being satisfied with the level of service provided.

Table 2. Analysis of the firms with respect to adoption factors within environmental context

| Company Factor | F1 | F2 | F3 | F4 | F5 |
|--------------------------------|------------------|-----|---|-----|------------------|
| Competitive Pressure | No | Yes | No | No | No |
| Customers' Pressure | No | Yes | Yes | Yes | Yes |
| Suppliers' Pressure | No | No | No | No | Yes |
| IT services | Yes | No | Yes | No | Yes |
| Government | No | No | Yes (Indirectly) | No | Yes (Indirectly) |
| Public Administration | Yes (Indirectly) | No | No | No | Yes (Indirectly) |
| Trade Associations | Yes (Indirectly) | No | Yes (Indirectly) | No | No |
| New Factors found in the study | | | Globalization/ Open Source Movement/ Big Corporations as Driving Force | | |

Table 3. Analysis of firms with respect to adoption factors within organizational context

| Company Factor | F1 | F2 | F3 | F4 | F5 |
|--------------------------------------|-----|----------------------|-----|--------------------------------|-----|
| Financial resources | Yes | Yes | No | Yes | Yes |
| Employees' IT knowledge/ attitude | Yes | Yes | Yes | No | No |
| CEO's characteristics | Yes | Yes | Yes | Yes | Yes |
| Other factors | | Marketing Department | | EDB Department (Only recently) | |

Table 4. Analysis of firms with respect to adoption factors within the technological context

| | |
|---------------------------------|---|
| E-Commerce Barriers | Reduction of productivity of the employees (F1, F4); constant interruption and distraction (F1,F3); too much junk mails (C1, C3); cost (F1, F2, F4, F5); technology change and evolution (F2); lack of technology readiness for customers (F1); lack of time (F5); fear of getting lost in cyberspace (F 5); vendor lock in (F2), fear of theft of identity (F3), lack of trust in banks supporting electronic transactions (F3), lack of bandwidth and infrastructure outside the capital cities (F3); loss of sales due to unreliable service providers (F4); |
| E-Commerce Benefits | Fast access to information (F1, F5, F2, F3, F4); first mover advantage (F2); contribution to internationalization (F5, F3), increased company visibility (F1, F3); increased efficiency (F1, F4), increased market potential (F5, F4), increased collaboration (F5, F3), increased sales (F4), increased public media interest in the company (F1), online customer support function (F2), Online training (F2). |
| E-Commerce Related Technologies | Push technology e.g. the ability to stream information out to the clients (F2); videoconferencing (F3); video camera connected with PCs (F3) |

As it can be seen in Table 2, competition and supplier pressures as well as the influence of government, public administration and trade association is negligible. The companies believe that government, public administration and trade associations were providing some information, organizing seminars, etc., but they were mostly directed to the private citizen. However, they all believed that becoming the private citizen more informed and more used to e-commerce would also influence the extent of adoption in SMEs. None of the companies were aware of direct government intervention such as tax breaks, pilot projects, financial incentives, etc. F3 believed that globalization, the open source movement and the adoption of e-commerce by big corporations could also affect adoption of e-commerce in small companies, at least in the software sector.

Organizational Context

The five companies in the sample had recognized the relative advantage of e-commerce and had allocated the required financial resources to its adoption. However the companies had expressed concern about further investing in e-commerce, especially due to uncertainty of the return on investment (F1, F2, F3, F4, F5). Therefore financial constraints and uncertainty of return on investment are still important factors influencing adoption of e-commerce in SMEs, even though they have been found important in earlier research as well (e.g. Wymer and Regan, 2005; Iacovou et al., 1995).

As it can be seen in Table 3, employees' IT knowledge, expertise and attitude are important in three companies, but they have importance on the way e-commerce is used only once it has been adopted. The decision to adopt and extent of implementation is still made by upper management and CEOs (F1, F2, F3, F4, F5), thus supporting the results found in other studies (e.g. Poon and Swatman, 1999; Thong 1999). However, this study shows that CEOs are starting taking into

considerations the employees' suggestions (F1, F2, F3). For example the CEO of F3 stated that he is willing to listen to employees suggestions regarding e-commerce usage and expansion. The EDB department is starting having an important role in e-commerce adoption in F4. The decision to adopt is mainly based on financial constraints, the uncertainty of return on investment, and on the knowledge of the upper management and CEO. Lack of managerial time was the reason for late adoption in F5.

Technological Context

In this study the factors of the technological context have been grouped under three main categories according to the model of Figure 1 and are summarized in Table 4. This study found that some companies believe that e-commerce leads to a productivity increase (e.g. F2); others (F1, F3) instead pointed out to a productivity decrease mainly due to the fact that employees start using e-mails for their own purposes. The amount of junk mail and e-mail is considered to be a mean of constant interruption and distraction. Other factors that have emerged as potential barriers are vendor lock-in and threat of disintermediation (F2). Furthermore F3 said that there is a lack of trust in the banks' support for electronic transactions, since the customer is not protected if anything goes wrong, and the fear of theft of identity. F4 considered loss of sales due to unreliability of the service providers as an inhibitor to further use e-commerce. Cost of adoption and implementation was still considered an important issue by all the companies, except F3 as also found by Wymer and Regan (2005).

All firms in the sample identified a number of short- and long term benefits of e-commerce that are similar to those already mentioned in the literature (e.g. Wymer and Regan, 2005; Scupola, 2003). The most important experienced short-term benefits were reduction of administrative burden (F1, F2), easy access to information or products

(F1, F2, F3, F5), increased public media interest in the company (F1). The most important long term benefit was improvement of customers relations and communications (F2, F3, F4, F5), increased market potential (F5, F4), contribution to internationalization (F5, F3). F2 considered an important benefit the possibility of being able to offer online training and online customer support.

The study also found that complementary technologies could be important facilitators of e-commerce use and adoption in line with Scupola (2003). For example, F2 said that the coming into the market of push technology, giving the possibility of streaming information out to the clients could enhance further use of e-commerce in the company. F3 said that more widespread and cheaper use of videoconferencing and video camera connected to a PC could potentially further adoption and use of e-commerce.

DISCUSSION OF FINDINGS

This study has investigated factors affecting adoption and implementation of e-commerce in small- and medium-sized enterprises in Australia. The study found that among the external factors two factors have a major importance in adoption of e-commerce: customer pressure and quality of IT services. Marshall et al. (2000) and Akkeren and Caveye (2000) also found industry-related factors as being important in e-commerce adoption, but they were identified mainly in competitors and suppliers pressure. Similarly to the study conducted by Scupola (2003) and Kuan and Chau (2001), this study has found that the influence of government, public administration and trade associations is limited to an indirect source of influence. Industry pressure is important at least in terms of customers. As far as the managers interviewed are aware of there are no financial governmental incentives directly or indirectly targeting adoption of e-commerce in SMEs. There have been some informational campaigns con-

ducted by the government and trade associations have been organizing seminars (F1), but they did not have a big influence. What could make a difference is financial incentives (F1, F2, F3, F4, F5) as also found by Scupola (2003). However, F3 did say that the government could influence the adoption of e-commerce among local SMEs by starting offering electronic tendering. This was the case in Kuan and Chau (2001). Furthermore, three companies (F1, F3, F4) perceive that governmental campaigns are mostly directed towards the private citizen, eventually impacting SMEs' e-commerce adoption in an indirect way.

Regarding access to IT related services the study shows that the companies interviewed are generally satisfied with consulting services in the area (F1, F4, F5). However they have been very dissatisfied with the quality of the Internet service providers (F1, F2, F3, F4, F5). Only recently this is getting better. This is different from the Marshall et al. (2000) results that found most dealers used an ad hoc approach to their web sites and were reluctant to use consultants.

Finally two factors have emerged in this study that had not been discussed in earlier literature: the importance of globalization and the open source movement (F3). However it is difficult from this study to say whether these factors are peculiar to the software industry. Further research is necessary to test this.

Regarding the organizational context, the CEOs characteristics appear as the most important factors with five out of five companies mentioning it as a determinant factor in the decision to adopt e-commerce. Usually the CEO's decision is based on his/her perception of return on investment, the financial resources of the firm and the perceived benefits of e-commerce. For example F4 specifically mentions that they first prioritize investments in manufacturing and then in IT, so if there is not enough money in the budget, there will be no investment in IT made that year, even though the employees feel that they need extra facilities or applications.

Employees' interest and attitude is also considered important by F1, F2 and F3 both for adoption and extent of implementation. For example the CEO of F3 said that if one of his employees goes to him and says that he would like to buy an application to do so and so, then he would normally give the permission for the acquisition. F2 said instead that the marketing department had a major role in suggesting to the CEO what to do regarding e-commerce, while F4 said that until recently it had been the CEO the only one deciding, but recently he was also opening up to the suggestions from the EDB department. So we can conclude that the results of this study are in line with other studies on IT adoption, finding that the characteristics of the CEO are determinant in adoption (e.g. Palvia and Palvia, 1999; Thong, 1999). This study also shows that the CEO is more and more basing his decisions on inputs coming from other employees within the company or consultants external to the company.

Regarding the technological context, the study has found full support for the categories of e-commerce barriers, e-commerce benefits and Internet-related technologies. Among the mentioned benefits relevant is increased media interest in the company (F1).

Among the barriers, relevant to mention are vendor lock-in and threat of disintermediation (F2). Cost is still an important factor inhibiting adoption in Australia, even though some years have passed from previous studies (e.g. Marshall et al., 2000; Poon and Swatman, 1999).

FUTURE RESEARCH DIRECTIONS

In the last decade or so the research on SMEs and IT adoption has been flourishing (e.g. Chen and McQueen, 2008; Chitura et al., 2008; Jeyaraj et al., 2006) as well as the research on IT adoption barriers and benefits (e.g. Scupola, 2003; Poon, 2000). However Bharati and Chaudhury (2009)

show how research into SMEs and IS is progressing away from the limited focus on IS adoption, and moving more towards studies that investigate the relationship between environmental factors and IS assets (link 3 in Figure 2 above) and studies that investigate the impact of IS or IT assets on the performance of the company (Link 2 in Figure 2). Regarding the methodology, previous research has been positivistic, qualitative and interpretative. Interesting subjects for future research could be to study and analyze the impact that IT/e-commerce use can have on the relationships between SMEs and the business environment in which they are in (e.g. clusters or networks of companies). Some studies already exists (see for example Scupola and Steinfield, 2008; Steinfield and Scupola, 2008; Steinfield et al., 2009), but there is a need for more. Finally another interesting area could be the exploration of e-services in SMEs (see for example Scupola, 2008; Scupola, 2008a).

CONCLUSION

This chapter has presented the results of a study investigating factors affecting the adoption and extent of implementation of e-commerce in SMEs located in the area of Brisbane in Australia. To investigate the research question a qualitative approach has been used. The results are mainly in line with previous studies in SMEs e-commerce adoption located in Australia as well as in other parts of the world, showing that some factors are always the same even though time goes on such as costs and CEO's characteristics. However this chapter also finds new interesting results that are peculiar to Brisbane area. The study groups the factors into environmental, organizational and technological according to the Tornatzky and Fleischer (1990) framework, therefore positioning itself in the studies that investigate the impact of organizational and environmental factors on IT adoption (Link 1 and 3 according to Bharati

and Chaudhury (2009)'s framework). In addition this chapter briefly provides some directions for future research.

Finally the study presents a number of limitations. For example, the data were collected only in the area of Brisbane. In order to generalize from these results to the whole Australia, the study needs to be replicated in other settings. In addition the study is qualitative in nature, which also limits its generalizability. Nevertheless, this research gives some insights into SMEs e-commerce adoption issues in Australia that can be of interest to researchers, SMEs owners and practicing managers.

REFERENCES

- Akkeren, J. K., & Cavaye, A. L. (2000). Why Australian Car Retailers do not Adopt E-Commerce Technologies. In *Americas Conference in Information Systems (AMCIS)* (pp. 72-81).
- Bharati, P., & Chaudhury, A. (2009). SMEs and competitiveness - The role of information systems. *International Journal of E-Business Research*, 5(1), 1-9.
- Chau, P. Y. K., & Tam, K. Y. (1997). Factors Affecting the Adoption of Open Systems: An Exploratory Study. *MIS Quarterly*, 21(1), 1-24. doi:10.2307/249740
- Chen, J., & McQueen, R. J. (2008). Factors Affecting E-Commerce Stages of Growth in Small Chinese Firms in New Zealand: An Analysis of Adoption Motivators and Inhibitors. *Journal of Global Information Management*, 16(1), 26-61.
- Chitura, T., & Mupemhi, S., Dube & Bolongkikit, T. (2008). Barriers to Electronic Commerce Adoption in Small and Medium Enterprises: A Critical Literature Review. *Journal of Internet Banking and Commerce*, 13(2), 1-13.
- Iacovou, C. L., Benbasat, I., & Dexter, A. S. (1995). Electronic Data Interchange and Small Organizations: Adoption and Impact of Technology. *MIS Quarterly*, 19(4), 465-485. doi:10.2307/249629
- Jeyaraj, A., Rottman, J., & Lacity, M. J. (2006). A review of the predictors, linkages, and biases in IT innovation adoption research. *Journal of Information Technology*, 21(1), 1-23. doi:10.1057/palgrave.jit.2000056
- Kuan, K. K., & Chau, P. Y. K. (2001). A Perception-based model for EDI adoption in small business using a technology-organization-environment framework. *Information & Management*, 38, 507-521. doi:10.1016/S0378-7206(01)00073-8
- Kurnia, S., & Johnston, R. B. (2000). The need for a processual view of inter-organizational systems adoption. *The Journal of Strategic Information Systems*, 9(4), 295-319. doi:10.1016/S0963-8687(00)00050-0
- Marshall, P., Sor, R., & McKay, J. (2000). The Impacts of Electronic Commerce in the Automobile Industry: An Empirical Study in Western Australia. In B. Wangler & L. Bergman (Eds.), *CAiSE 2000* (pp. 509-521). Berlin Heidelberg: Springer Verlag.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis* (2nd Ed.). Thousand Oaks, CA: Sage Publications.
- OECD. (2002). *Electronic commerce and SMEs, ICT and electronic commerce for SMEs: Progress Report*. Working Party on Small and Medium-Sized Enterprises and Entrepreneurship, Geneva, DSTI/IND/PME (2002)7.
- Palvia, P. C., & Palvia, S. C. (1999). An examination of the IT satisfaction of small-business users. *Information & Management*, 35(3), 127-137. doi:10.1016/S0378-7206(98)00086-X

- Poon, S. (2000). Business Environment and Internet Commerce Benefit-A Small business Perspective. *European Journal of Information Systems*, 9, 72–81.
- Poon, S., & Swatman, P. M. C. (1997). Small business use of Internet Findings from Australian case studies. *International Marketing Review*, 14.
- Poon, S., & Swatman, P. M. C. (1999). An exploratory study of small business Internet commerce issues. *Information & Management*, 35(1), 9–18. doi:10.1016/S0378-7206(98)00079-2
- Premkumar, G., & Ramamurthy, K. (1995). The Role of Interorganisational and Organizational Factors on the Decision Mode for Adoption of Interorganisational Systems. *Decision Sciences*, 26(3), 303–336. doi:10.1111/j.1540-5915.1995.tb01431.x
- Rogers, E. M. (1995). *Diffusion of Innovations* (4th Ed.). New York: The Free Press.
- Sabherwal, R., Jeyaraj, A., & Chowa, C. (2006). Information System Success: Individual and Organizational Determinants. *Management Science*, 52(12), 1849–1864. doi:10.1287/mnsc.1060.0583
- Saffu, K., Walker, J. H., & Hinson, R. (2008). Strategic value and electronic commerce adoption among small and medium-sized enterprises in a transitional economy. *Journal of Business and Industrial Marketing*, 23(6), 395–404. doi:10.1108/08858620810894445
- Scupola, A. (2003). The Adoption of Internet Commerce by SMEs in the South of Italy: An Environmental, Technological and Organizational Perspective. *Journal of Global Information Technology Management*, 6(1), 51–71.
- Scupola, A. (2008). Conceptualizing Competences in E-Services Adoption and Assimilation in SMEs. *Journal of Electronic Commerce in Organizations*, 6(2).
- Scupola, A. (2008a). E-Services: Definition, Characteristics and Taxonomy: Guest Editorial Preface, Special on E-Services. *Journal of Electronic Commerce in Organizations*, 6(2).
- Scupola, A. (2009). SMEs' E-commerce Adoption: Perspectives from Denmark and Australia. *Journal of Enterprise Information Management*, 22(1-2).
- Scupola, A., & Steinfield, C. (2008). The role of a network organization and Internet-based technologies in clusters-The Case of Medicon Valley. In L. Fuglsang (Ed.), *Innovation and the Creative Process*. Cheltenham, UK: Edward Elgar.
- Steinfeld, C., & Scupola, A. (2008). Understanding the Role of ICT Networks in a Biotechnology Cluster: An Exploratory Study of Medicon Valley. *The Information Society*, 24(5), 319–333. doi:10.1080/01972240802356091
- Steinfeld, C., Scupola, A., & Lopez-Nicolas, C. (2009). Social Capital, ICT Use and Company Performance: Findings from the Medicon Valley Biotech Cluster. In *Proceedings of the International Conference on Organizational Learning, Knowledge and Capabilities (OLKC)*, Amsterdam, The Netherlands, April 26-28, 2009.
- Thong, J. Y. L. (1999). An integrated model of information systems adoption in small business. *Journal of Management Information Systems*, 15(4), 187–214.
- Tornatzky, L. G., & Fleischer, M. (1990). *The Processes of Technological Innovation*. Lanham, MD: Lexington Books.
- Walczuch, R., Van Braven, G., & Lundgren, H. (2000). Internet adoption barriers for small firms in the Netherlands. *European Management Journal*, 18(5), 561–572. doi:10.1016/S0263-2373(00)00045-1

Wymer, S., & Regan, E. A. (2005). Factors Influencing e-commerce Adoption and Use by Small and Medium Businesses. *Electronic Markets*, 15(4), 438–453. doi:10.1080/10196780500303151

Yin, R. K. (1994). *Case Study Research - Design and Methods* (2nd Ed.). Thousand Oaks, CA: Sage Publications. Retrieved from <http://www.abs.gov.au>

Zwass, V. (1996). Electronic Commerce: Structures and Issues. *International Journal of Electronic Commerce*, 1(1), 3–23.