Study on Adoption of E-commerce in SMEs

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Abstract: Growing e-commerce has an increasingly huge impact on the economy and society, offering new opportunities as well as threats for business organizations. The successful adoption of e-commerce by SMEs would affect the entire national economy, but SMEs have still shown a reluctance to adopt e-commerce, almost due to inadequate knowledge base and resources. This research sought to identify the range of issues surrounding SMEs in their potential adoption of e-commerce with the aim of recommending strategies that would enhance the level of successful adoption.

Keywords: e-commerce, SMEs, adoption

1 Introduction

Electronic commerce refers to conducting business transactions over the Internet, which includes exchange of information of value in the form of products and services as well as payments, using web-based technologies (Fraser, Fraser & MacDonald, 2000). Rapid changes brought about by e-commerce have offered new opportunities as well as threats for business organizations (Fraser et al., 2000). Companies are under increasing pressure to adopt e-commerce if they want to remain competitive (Henderson, 2002).

Almost 90% of large corporations in China use the Internet as an integral part of their business, but SMEs have been slower to do so (Zhao, 2009). SMEs seem to be aware of the possible benefits to be achieved from adopting e-commerce, but they also recognize that there are significant barriers or inhibitors that influence their adoption.

This research sought to identify the factors influencing e-commerce adoption by SMEs and recommend strategies that would enhance the level of successful adoption. The rest of the paper is divided in three parts. In the first part, the definitions of SMEs and e-commerce were analyzed in detail. The second part focused on factors influencing e-commerce adoption by SMEs and recommended strategies that would enhance the level of successful adoption. The third part studied some recommendation for promoting SMEs to adopt e-commerce.

2 E-commerce and SMEs: An Overview

2.1 Definitions of e-commerce

Electronic commerce refers to conducting business transactions over the Internet, which includes exchange of information of value in the form of products and services as well as payments, using web-based technologies. It has been observed that e-commerce is not a simple innovation; rather it is a cluster of separate innovations, which involves accounting and auditing, business law and ethics, computer science and management information systems, economics and finance, marketing, management, and others.

2.2 Significance of e-commerce

E-commerce not only permits but facilitates an increase in productivity enabling the creation of new relationships with customers, distributors, suppliers and other strategic partners. While China has been relatively successful in getting many businesses online, there is still a gap between small and large enterprise – 45% for small and 90% for large by 2009 (Zhao, 2009).
2.3 Definitions of SMEs
Small and medium enterprises (also SMEs) are companies whose headcount or turnover falls below certain limits. There are two criteria: the number of employees or annual sales turnover. Take China as an example, SMEs in industry have population of 300-2,000 and annual revenue of 4,000-40,000 million Yuan.

2.4 Characteristics of SMEs
The owners and managers of SMEs are one person, determining that strategic decisions are dependent only on a few people, which leads to a high identification with the business, a stable culture, and high commitment. Due to their relatively small size, simple product range and less market share, they are faced with problems such as the lack of human and financial resources leading to that SMEs tend to lack technical knowledge and specialists for e-commerce adoption.

2.5 Significance of SMEs
SMEs are the driving force behind a large number of innovations and contribute to the growth of the national economy through employment creation, investments and exports. Research suggests that SMEs are the major providers of new jobs and contribute positively to economic growth. SMEs make a significant contribution to China’s economy. SMEs represent over 99% of enterprises, employing 80% of China’s total workforce in urban and providing more than 50% of tax revenue. It is estimated that in 2009 there were 9,580,000 businesses with fewer than 300 employees. The successful adoption of e-commerce by SMEs would affect the entire China’ economy. There is growing evidence that SMEs is falling behind in the race for sustainable and valuable use of online business, a large percentage of them do not use the internet daily in their business operations.

2.6 The Patterns of SMEs use e-commerce
The using of e-commerce by SMEs may take many forms, from online purchasing of products, contacting suppliers through email, to marketing and selling their products through their own websites to international clients, which can be divided into upstream (business to business or B2B) and downstream (business to customer or B2C) activities. Upstream activities such as inbound logistics and operations can be organized globally to achieve economies of scale. Downstream activities such as marketing, sales and customer service must be organized on a multi-domestic basis. Most SMEs use the internet for a very limited range of purposes, e.g. e-mail, an easier and more economic way to contact suppliers or receive services, as another medium for collecting information. Accordingly, the revenue they generate through e-commerce is much less, which further block adoption of e-commerce in SMEs.

3 Factors Influencing E-commerce Adoption by SMEs
There are many factors that affect the ability of SMEs to adopt e-commerce. According to “Technology-Organization-Environment”(TOE) framework proposed by DePietro, factors influencing e-commerce adoption by SMEs are discussed in detail below.

3.1 Technological dimension
E-commerce is as an innovation. There are three attributes of the innovation to influence its adoption. These three attributes are relative advantage, compatibility and complexity.

3.1.1 Relative advantage
The benefits of e-commerce can be classified into two categories, direct benefits and indirect benefits. Direct benefits are mostly operational benefits relate directly to the organization, and they are usually tangible benefits in everyday activities, such as improving data accuracy, improving security of data, improving operation efficiency, speeding up application processes and reducing clerical errors. Indirect
benefits are mostly strategic benefits, which are likely to be intangible to the organization. However, they can generally bring the organization tactical and competitive advantages that have a far-reaching impact on business practices and relationships. Some SMEs tend to concentrate on direct benefits and ignore the indirect benefits, as the latter are viewed as non-immediate benefits. Overall, indirect benefits are generally more important and have further influences over the SMEs.

3.1.2 Compatibility
It is clear that the higher compatibility, the less changes or adjustment will be needed and the lower the possible level of resistance to the technology when it is adopted e-commerce has its roots in the modern ICT, so the existing IT infrastructure (technological compatibility) of the organization, the nature of organization’s work practices and the consistence of values, culture and legal framework (organizational compatibility), all can impact the decision to adopt e-commerce.

3.1.3 Complexity
It was reported that the ease of use is an important factor for the hotel industry in the adoption of e-commerce (electronic channels of distribution). In general, the higher complexity of e-commerce and its related infrastructures, the bigger the negative influence over the adoption of e-commerce. However, the rapid advancement of the ICT, the availability of fast broadband and easier access to new technology all act to lower the complexity of e-commerce.

3.2 Organizational dimension
3.2.1 Human resource readiness
Due to its specialty, e-commerce highly depends on the IT/ICT knowledge. The employees’ readiness mainly refers to the ability and confidence of employees to operate IT-related innovations. Competent human resource with the understanding of ICT can facilitate the adoption of e-commerce, which determines the SME’s speed of adoption.

3.2.2 Financial resource readiness
Financial resource readiness refers to the availability of financial resources to implement and operate the IT infrastructure needed for e-commerce. The cost of implementation and on-going running costs affect the adoption decision, especially for SMEs, which normally have limited financial resources.

3.2.3 Technological resource and capability readiness
Higher technical competence means a better readiness for e-commerce adoption Innovation champion. The presence of innovation champions (normally IT professionals) inside the adopting organization can raise awareness of the innovation and its perceived benefits for the organization, thus increasing the readiness of the SME to adopt.

3.3 Environmental dimension
3.3.1 Competitive pressure
This factor refers to the level of innovation capability in the organization’s industry and that of its competitors. The higher the competitive intensity in an industry, the bigger the pressure is as a motivator for the adoption of e-commerce.

3.3.2 Government
The role of government can be a notable factor in the adoption of e-commerce. For example, the New Zealand government has a “Central Online Management and Export Trade Accelerator Project”, which identified the barriers to the uptake and use of e-commerce and broadband by SMEs in New Zealand, and developed a “Blueprint” for SMEs to use e-commerce to access global markets.

3.3.3 Perceived support from technology vendors
Available support from technology vendors also can be an external factor that influences the adoption of an innovation. As the innovation is generally new to the firm, the scarcity of an internal innovation champion or people “know-how” forces the SME to seek external support. If the access to external support unfavorable, the organization is more likely to adopt the innovation.

4 Suggestions for Promoting SMEs to Adopt E-commerce
4.1 Government needs to establish an environment that encourages the adoption of e-commerce
Government needs to ensure policy issues that are more business specific such as adapting commercial business codes to suit this new environment, facilitating transporter data flows between businesses, establishing new means for engaging in contracts (such as digital signature authentication and certification) and improving the reliability of infrastructure to meet the quality of service demanded by business in this environment. They need to provide an environment that encourages further expansion of this sector of the economy.

4.2 Educational incentives
Lack of awareness of the potential of e-commerce by SMEs generally and lack of the potential of broadband facilities suggest that government needs to be more proactive in taking an educational role. Government wants SMEs to adopt e-commerce. They provide a great deal of online assistance, but they are not reaching SMEs. Government needs to reassess how best to reach their targeted audience – perhaps by working more closely with educational institutions.

4.3 External consultants
External consultants were hired by a number of SMEs to complete the adoption process or to install telecommunications and computer facilities, but they often failed to do what was required of them. Part of the difficulty was that they did not clarify the needs of their clients, while part of it was the technical language they used to communicate.

4.4 Infrastructure
However, most SMEs had not experienced e-commerce, so were ignorant of the possible benefits it can offer. Efforts need to be made to educate SMEs to the benefits of broadband, and to make sure reliable access to it is available to them. People cannot develop favorable perceptions of an innovation unless they have had exposure to that innovation.

5 Conclusion
E-commerce is a completely new model for business, but SMEs have still shown a reluctance to adopt it. There are many factors that affect the ability of SMEs to adopt e-commerce, which are reflected in technological dimension, organizational dimension and environmental dimension. The suggestions for promoting SMEs to adopt e-commerce are establishing an environment that encourages the adoption of e-commerce, educational incentives, external consultants and infrastructure.

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