E-Commerce Stimuli and Practices in Malaysia

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Abstract

E-Commerce changes the way organizations do business. Recognizing the significance of E-Commerce contributions to the nation's economic growth, the Malaysian government introduced several stimuli to increase the practice of E-Commerce, particularly among SME, as they constituents about 84 percent of the Malaysian business enterprises. This paper looks at several stimulus provided by the Malaysian government in its effort to encourage SME to adopt E-Commerce as a tool to be more competitive in global markets. In addition, the study also describes E-Commerce practices among 266 SME retailers in four major cities in Malaysia. Personal interviews (using a structured questionnaire) were carried out to obtain responses from the retailers. The findings indicate E-Commerce practices among the Malaysian SME are still very low and are mainly for communication and marketing purposes. Lack of awareness and knowledge as well as skills were among the factors stated to be impeding the increase of E-Commerce usage among them. Therefore, relevant authorities must take note and concentrated efforts must be taken to overcome these impediments if Malaysia wants to be a major E-Commerce player in the region.

Keywords

E-Commerce, stimulus, practices, applications, impeding factors

1. Introduction

As we move into the 21st century, the way business is carried has evolved from the days of barter trading to virtual trading. It can be also observed that world trade liberalization has been spurned on by the advert of the Internet, which in turn has given rise to a new medium of doing business known as E-Commerce. Many researches have defined E-Commerce according to their own perspectives. Wigand (1997) defined E-Commerce in terms of using electronic connection to conduct economic activities while others (Turban, Lee, King and Chung 2000) emphasized on the use of computer networks and the Internet infrastructure as a medium of business transactions. Similarly, the World Trade Organization has looked at E-Commerce as usage of the Internet as the Internet provides platform for companies to conduct exchange and transactions from e-mails, leisure reading, browsing to selling, purchasing and providing services (WTO 1998).

Consequently, the scope of E-Commerce is defined differently by different authors. Kalakota and Whinston (1997) have defined E-Commerce from four different perspectives; communication, business process, service and online. E-commerce can further be assessed

from two additional perspectives; namely the connectivity and adoption ladder (Lewis and Cockrill 2002). The connectivity model emphasized the basic level of connectivity to the Internet either by having web sites, e-mail or EDI. On the other hand, the adoption ladder highlighted the full business processes participation including messaging, online marketing, online ordering, online payment, order/progress/online sales support and e-business (Daniel, Wilson and Myers 2002).

Regardless of how we define E-Commerce, the applications can be as simple as e-mail and online advertising to the more complex applications such as the online payment and electronic fund transfer among businesses (Cockburn and Wilson, 1996; Soh, Quee, Fong, Chew and Reid 1997; Haynes, Becherer and Helms 1998; Kardaras and Papathanassiou, 2000). The more complicated applications may require additional resources and expertise for them to be implemented. Therefore, organizations may implement some applications especially the simple ones, if not all applications.

The potential market of the E-Commerce is very promising especially in the Asia Pacific region. Nua Ltd (2002) reported that E-Commerce revenues in the Asia-Pacific region would rise from USD76.8 billion at year-end 2001 to USD338.5 billion by the end of 2004. Out of this, B2B will account for the largest share of revenue. It is expected that the value will rise from USD68.6 billion at the end of 2001 to USD300.6 billion by the end of 2004. Thus, we can observe that there is a vast growing market potential for companies to embark on E-Commerce and reap its potential benefits.

According to Malaysian Minister of Energy, Communications and Multimedia during the launching of the National E-Commerce Expo 2002, the potential revenues arising from business to consumer (B2C) and business to business (B2B) E-Commerce activities in Malaysia are set to increase by almost nine fold from USD1.5 billion in 2002 to USD9.4 billion by 2005. Domestic online sales totaled RM46 million in 1999, however, several State and commercial agencies estimated a rise to between RM750 million and RM1 billion by 2003 (MATRADE, 2003).

The figures above indicate E-Commerce's significant contributions to the nation's economy. Therefore, it is only appropriate that a study be conducted to review E-Commerce practices in Malaysia. This study however focuses on the small medium enterprises (SME) as they are said to be playing an important economic vitality to a nation (Haynes et al., 1998). The SME constitute 84% of the business enterprises in Malaysia, contributes 19% to the total gross domestic products (GDP) and make up 12% of the total workforce in the country (EDS, 2001).

The study aims to achieve the following objectives:

1. To identify the various stimulus taken by the Malaysian Government to increase the participation of E-Commerce among SME
2. To describe E-commerce practices among SME
3. To identify factors impeding E-Commerce implementation among SME

This paper begins by describing E-Commerce, its implementation and guided study framework. The next section describes the research methodology used and characteristics of SME. The findings of the study are presented next. It begins by highlighting the various E-

Commerce stimuli and proceeds by describing E-Commerce practices and the various factors impeding E-Commerce practices among the SME. The paper concludes by highlighting the implications of the findings to the relevant authorities.

2. Overview of E-commerce Implementation

The use of Internet as medium of communication or messaging is greater than its use in other applications of E-Commerce. This could be due to the fact that e-mail requires minimal or no additional cost to be implemented. On the other hand, the setting up of online order, for example would require additional cost of developing web based order application (Poon and Swatman 1999).

A study carried out among 590 organizations in Malaysia found that e-mail was the most widely used E-Commerce application. On the contrary, the smart card and prepaid card were the least used (Ainin 2000). Another study of 199 Malaysian companies consisting of manufacturers, traders and service providers showed that electronic payment from customer and suppliers accounted for 1.0% and 2.5% respectively in terms of usage (Fatimah, Kusairi and Mohd 2000).

Similarly, a study conducted by Soh et al. (1997) in Singapore found that companies used E-Commerce for marketing, advertising, and information gathering. Electronic transactions such as order delivery and payment were used to a lesser extent. The trend was also found among UK retailers, where it was reported that as high as 64% companies reached the messaging stages while as low as 4% of them reached the post-sales and e-business stages (Lewis and Cockrill 2002).

The viability of E-Commerce is not limited to large and multi-national organizations alone. Small and medium (SME) organizations implementing E-Commerce will also reap the benefits brought about by the change in the way business is conducted. According Auger and Gallaugher (1997), SME have a greater flexibility to react to any changes in the business. It is said that the smaller firms can better respond to any uncertainties because they are able to adjust in a shorter time period. With limited resources, it makes sense for them to minimize the cost of conducting business transactions (O'Keefe, O'Connor and Kung 1998). Using E-Commerce, small companies are able to reach the same target market as the larger companies. Lack of scale was another reason cited for SME to turn to E-Commerce as alternative business channel (Poon and Jevons 1997). With E-Commerce, SME can now compete with larger companies.

The introduction of the E-Commerce has impacted the ways organizations conduct their business. A study of SME located in the Northeastern US found that companies that have web sites utilize it for regular business transactions which include online promotion, online sales and purchase, online customer service, and gathering online data about marketing, suppliers and distributors (Fahri and Omar 2001). Previous studies indicated that the small companies are less likely to adopt E-Commerce (Morganosky 1997; Poon and Swatman 1999; Riquelme 2002) compared to larger companies.

Although the practice of E-Commerce is increasing worldwide, there are still many factors that need to be address to further increase the implementation. Lack of technical personnel was one of the reasons why retailers in Wales do not adopt E-Commerce. The study (Lewis and Cockrill 2002) also cited factors such as lack of advice and support, funds and skilled and qualified staff as among the reasons for non-participation in E-Commerce activities. Besides lack of technical expertise, companies are not comfortable with the security level of the online transactions as the transactions conducted electronically were open to hackers and viruses which are beyond their control (Ainin and Rohana 2000). Studies conducted in

Australia and UK (Lawrence, Corbitt, Tidwell, Fisher and Lawerence 1998; Computimes Feb 2000) also showed similar concerns.

The following framework was developed and used as a guideline in the study. The framework was adopted from Soh et al (1997), Lewis and Cockrill (2002), Fahri and Omar (2001) and Lawrence et. al (1998).

Figure 1: Framework of the study

3. RESEARCH METHODOLOGY

This research was conducted using both primary and secondary data. Secondary data included literature pertaining to E-Commerce, including hard and soft copy of articles. Secondary data obtained from various Government policy reports and documentations was used to identify the various stimuli provided by the government to increase E-Commerce participation particularly among SME. For the purpose of this study, the Small and Medium Industries Development Corporation's (SMIDEC) definition of SME is adopted: 'a company is considered a SME if it is a company with an annual sales turnover not exceeding RM 25 million and full time employees not exceeding 150'. SME was chosen as there has been very little research done on ICT in SME although they make up more than 80% of businesses in Malaysia.

Although Malaysia has a total of thirteen states, the study concentrated on four states, Perak, Negeri Sembilan, Melaka and Kelantan. These states were chosen based on convenience and because there have not been many studies conducted in these areas. Moreover, the Federal Territory Kuala Lumpur, Selangor and Penang were not chosen as many past studies concentrated on these areas (Fatimah et.al 2000, Yusserie at al 2002, Ainin et.al 2001, among others).

In order to determine the various E-Commerce practices among the SME, primary data was collected using a questionnaire. The questionnaire was designed based on previous researches on E-commerce (Soh et al. 1997; Lawrence et al. 1998; Lewis and Cockrill 2002 among others). The questionnaire was divided into two sections. The first section contains questions on E-Commerce applications and their extent of usage. The second section required respondents to rate their perception regarding factors that become barriers in using E-Commerce. A five interval Likert scale was used where 1 = Strongly Disagree and 5 =

Strongly Agree. The scale was further collapsed into only three namely; Agree, Neutral and Disagree during analysis to make the findings more meaningful.

Field assistants were used to collect the necessary data. They approached the owner of the organizations, interviewed and assisted them in filling up the questionnaire. This approach was adopted as in the pilot study many retailers indicate that they preferred someone to write down their responses.

The questionnaires were distributed to all small retailers in the capital city of each selected state namely, Ipoh (North), Seremban (Middle), Melaka (South) and Kota Baharu (East Coast). However, many of the SME did not want to respond to the questionnaires thus resulting in an overall low response rate.

After nearly eight weeks of data collection, a total of 299 responses were received, however only 266 were usable. The profile of the respondents in terms of locality is illustrated in Figure 2.
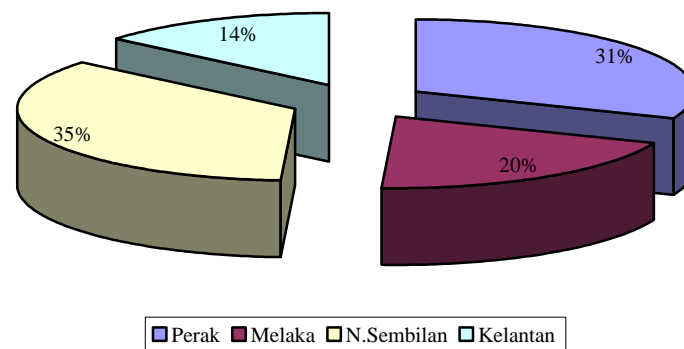

Figure 2 : Locality of the respondents

It can be seen from Figure 2 that Seremban accounted for 35 percent followed by Ipoh, Bandar Melaka and Kota Baharu. The unequal distribution was due to poor response from cities such as Kota Baharu. It must be noted here that the poor response from Kota Baharu was probably because many of the retailers were not using computers in their business at all. Moreover based on the national Internet subscriber's figures, Kelantan has the lowest percentage (12.5%) subscribers per 1000 population among the states in Malaysia whereas Perak, Negeri Sembilan and Malacca have 27.3, 27.0 and 28.6 percent respectively.

A majority of these retailers are local companies (97.7%) with three and less personnel (60.9%) (can be considered as family-owned SME), while 16.8% have more than six employees in their organizations, as illustrated in Figure 3.
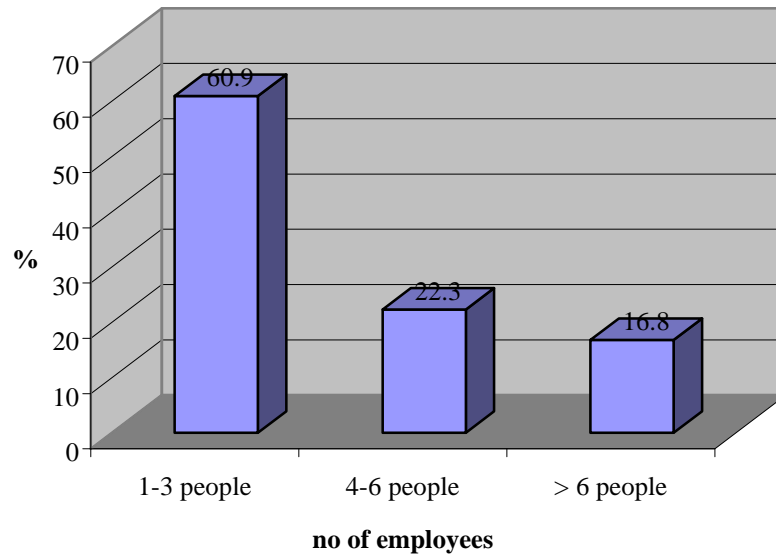
Figure 3: Size of the SME

This study has several limitations, thus, the discussions focused on a few facets. One of the limitations is the fact that it was conducted on only four states of Malaysia, which respectively cover the middle, south, and north and the east coast regions. As such, future research can be carried to extend the coverage of retailers in other parts of Malaysia. Another limitation of the study is terms of ownership of the companies. It should be noted that this study was done on SME retailers with only Bumiputera status (bumiputera status is reserved for Malay descendents and natives of peninsula Malaysia, Sabah and Sarawak). Future research on E-Commerce usage among retailers may be extended to include other ethnicities such as Chinese and Indians.

4. Findings

The following sub sections highlight the findings of the study. First the various stimuli are described then the E-Commerce practices among the SME are illustrated and finally factors impeding E-Commerce practices are forwarded.

4.1 E-Commerce Stimuli

Malaysian is seen as slow in adapting to the new and enabling technology such as E-Commerce due to its geographical reasons and lagging of ICT infrastructure (Yuserrie et al. 2000). While we are lagging behind companies from countries such as US and Australia, a study conducted on manufacturing firms located in the Penang FTZ area, found that we are almost at the same level with Japan and the European countries (ibid). Nevertheless, in order to accelerate the uptake of E-Commerce, the Malaysian Government have taken several efforts to convince the non-ICT sectors especially the SME to use more ICT products and services in their businesses. They have also been frequently encouraged to explore and tap new markets using alternative channel such as the web sites to promote their products and services.

The Malaysian Government realizing the importance of E-Commerce set up the National Information Technology Council (NITC). Through NITC, various efforts and grants have been introduced to promote ICT and E-Commerce usage. In addition, during the 2002 Budget, the government announced that the costs of developing websites are allowed an annual deduction of 20% for income tax purpose for five years.

In the Eight Malaysia Plan, (2001), the Government has formulated several policies and initiatives to stimulate the growth of E-Commerce implementation in Malaysia. For example, in April 1998, E-Commerce grants are offered to SME to encourage them to participate in E-Commerce activities (www.smidec.gov.my). The grants provide assistance to SME for setting up their own web sites to conduct E-Commerce activities.

In addition, anticipating that the SME may not have the expertise and knowledge to start E-Commerce on their own, the government have initiated third party market place environment. MyBiz for example have been given the mandate to develop and maintain this new market place. Using MyBiz portal, the SME are able to initiate E-Commerce activities at a minimal price. Currently, MyBiz have recorded over four hundred SME registered on their portal (www.MyBiz.com.my) since its inception in 1999. Further study must be undertaken to identify why not many SME participate in the portal.

SMIDEC has also introduced new programs namely RosettaNet Grant, Engineering Design Grant and E-manufacturing Grant. RosettaNet, is an Internet, based common messaging standard for global supply chain management. This is especially meant for companies in the electrical and engineering sector. It enables companies in the supply chain to communicate and conduct business electronically through common codes for sourcing of parts and components. The objective of the grant is to prepare Malaysian companies for early adoption and implementation of global supply chain management system. With the adoption of the RosettaNet standard, local companies would be able to conduct business through electronic means with their partners, suppliers and buyers; and enjoy the benefits of reduced inventory costs, time to market and lower transaction costs (www.smidec.gov.my).

4.2 E-commerce Practices

The practice of E-Commerce applications can be observed by studying the extent of E-Commerce applications used by the retailers. The first widely used application is payments using credit card where 24.4% indicated using it in their companies. However, it must be noted that the usage of credit cards were not carried out via the Internet. Instead it was conducted in physical presence of the retailers. Nevertheless, this finding is still significant as it indicates that there are nearly 75 percent of the retailers that did not accept credit card as a method of payment. This implies that they are not willing and ready to use any form of technology to replace cash transactions. Therefore, it is expected that retailers will not be willing and ready to use online credit card for payment that is an essential component in E-Commerce transaction.

E-mail falls into second place with 9.8% of the respondents indicated using and the third widely used application is tracking of delivery of goods where 9.4% showed that they are using it as one of their E-Commerce activities. Usage of web sites as E-Commerce application is also important whereby 4.9% of them indicated using it followed by online advertising (4.9%).

Nevertheless, there were still many E-Commerce applications that are not widely used among these retailers. They are online help desk where 98.9% of the respondents indicated not using this type of application. This is followed by electronic catalogue with 98.5%, smart card payment (98.5%) and online research on buyers (98.1%). A summary of the applications used is illustrated in Figure 4.
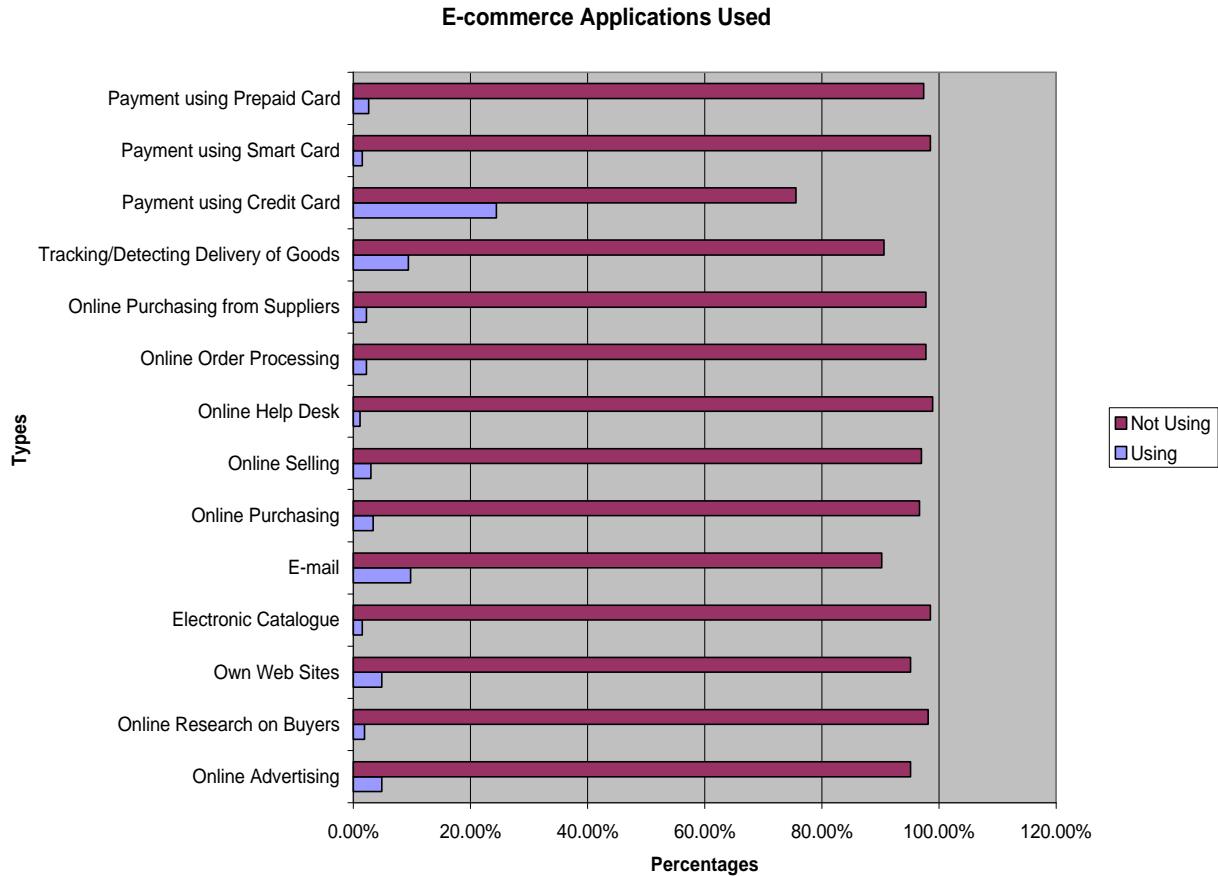
E-commerce Applications Used

Figure 4: E-commerce Applications Used in SME

4.3 Factors Impeding E-commerce Practices

The retailers agreed that their extent of using E-Commerce is influenced by various factors, which become hindrance to E-Commerce practice among them (Table 1). Majority of them (79.0%) agreed that not many success stories of E-Commerce are known as the first barrier to E-Commerce adoption. Other barriers included not having knowledge of E-Commerce (72.6%), not all buyers have access to the Internet (72.2%) and lack of E-Commerce potential knowledge (69.6%). In addition, factors such as lack of skilled workers to operate E-Commerce and not having necessary skills in using E-Commerce were cited as barriers to E-Commerce uptake among these retailers.

Majority of the respondents (45.8%) disagreed that potential for E-Commerce in Malaysia is small. Subsequently, they disagreed on factors such E-Commerce requires additional staffing (35.0%), the products and services offered are not suitable to be sold on the Internet (26.0%),

difficulties in justifying the cost and benefits of using E-Commerce (25.2%) and high implementation and operational cost (203.%).

Factors	Agree		Neutral		Disagree		Total	
	Freq	%	Freq	Freq	%	%	Freq	%
High Cost – implementation	151	57.1	61	54	20.3	22.9	266	100
Additional Workers Required	122	45.9	51	93	35.0	19.2	266	100
Difficult to Justify Cost and Benefit	104	39.1	94	67	25.2	35.3	265	100
E-commerce has Very Little Potential	86	32.3	58	122	45.8	21.8	266	100
Selling/Marketing Requires Face-to-Face	178	66.9	51	33	12.4	19.2	262	100
E-commerce Channels are Different from Traditional Commerce	183	68.8	53	26	9.7	19.9	262	100
Most Suppliers Do Not Have Internet Access	173	65.0	76	17	6.4	28.6	266	100
Insufficient Security for Online Credit Payment	169	63.6	64	33	12.4	24.1	266	100
Insufficient Security for Virus Protection	169	63.5	61	35	13.2	22.9	265	100
Lack of Resources for Developing E-commerce	164	61.6	78	24	9.0	29.3	266	100
Lack of Skilled Workers to Operate E-commerce	182	68.4	53	31	11.7	19.9	266	100
Lack of Standards and Procedures from Government	136	51.1	96	34	12.8	36.1	266	100
Lack of E-commerce Potential Knowledge	185	69.6	61	20	7.5	22.9	266	100
Insufficient Telecommunication Infrastructure	135	50.8	79	52	19.5	29.7	266	100
Perspective Change in Using E-commerc90e	148	55.7	91	27	10.1	34.2	266	100
Do Not Have Skills in Using E-commerce	181	68.1	63	22	8.2	23.7	266	100
Products and Services Offered Not Suitable to be Sold on Internet	126	47.2	71	69	26.0	26.7	266	100
Do Not Have Knowledge of E-commerce	193	72.6	53	20	7.6	19.9	266	100
Less Support from Related Agencies	180	67.7	70	15	5.7	26.3	265	100
Not All Buyers in Malaysia Have Internet Access	192	72.2	58	16	6.1	21.8	266	100
Not Many Success Stories of E-commerce are Known	210	79.0	38	18	6.8	14.3	266	100

Table 1: Factors Impeding E-commerce Practices Among SME

5. CONCLUSION

The findings of the study conform to all previous studies carried out on the practice or usage of E-Commerce. The usage of e-mail as an E-Commerce tool is found to be common among Malaysian retailers. One of the reasons is the cost of setting up e-mail is the cheapest compared to all the other applications. In addition, e-mail is the easiest application to use that does not require high level of expertise and technical knowledge.

Malaysian retailers have moved towards using the Internet to advertise their products and services. This could be due to the fact that they finally realized the importance of web presence in the current business environment. With very minimal or no cost at all, retailers are able to develop own web sites and create web linkages to and from their suppliers. In addition, attractive advertising tools such as banners or flashes are becoming more popular for companies to do advertisement on the Internet. Malaysian retailers have further extended their E-Commerce awareness into satisfying customers' satisfaction where they provide tracking or detecting delivery of goods facilities. With this function customers are now able to check the status of their orders, which is especially important for inventory and sales planning and supply chain management.

Although online advertising is used among the retailers, other electronic marketing tools such as electronic catalogue and online research on buyers are among the least used applications. Reasons could be due to lack of expertise and resources to develop such applications. Majority of retailers in Malaysia are considered SME with very few products or services to market. As such, they may find it less effective to do online cataloging. Unless their size is equivalent to a department store where they have the whole collection of products to be sold on the Internet, they may find this application effective.

The findings suggest that Malaysian retailers are using some if not all of the IT applications in E-Commerce. Although the level of adoption varies greatly even within the retail industry, it indicates that some of Malaysian retailers are preparing themselves to the business opportunities offered by E-Commerce. Nevertheless, the level of adoption is still considered not extensive if we look at the overall percentages of those currently using and not using each of these applications. This is despite the fact that various schemes, incentives and grants currently offered by the Government to promote the usage of E-Commerce among retailers in particular, among the SME.

This study has further showed that there is still low level of E-Commerce awareness among the SME retailers. The fact that they do not know about E-Commerce success stories requires the related agencies such as the Ministry of Entrepreneur Development, Ministry of International Trade and Industry (MITI), Malaysia Trade Development Corporation (MATRADE) and SMIDEC to constantly educate and promote the importance of E-Commerce to their members. Road shows of E-Commerce activities and expo among Malaysian companies could be carried to increase the awareness level among SME retailers. Nevertheless, organizing road shows and expos alone is not sufficient, the SME must be made to participate in the activities. In addition, training on some if not all of the E-Commerce applications could be conducted to increase their E-Commerce knowledge. However, it was recently reported that as there are now more success stories as benchmarks, SME are more willing to use ICT especially E-Commerce and no longer adopting the "wait and see" attitude (Manecksha, 2003).

The Malaysian retailers felt that the limited numbers of customers having access to the Internet is one of the reasons why they do not adopt E-Commerce. This in way implies that most of the Malaysian SME retailers studied are concentrating in the local market which also indicates that they are not ready to accept globalization where competitive markets are open with plethora flows of products and information. The retailers must be reminded that conducting business via E-Commerce means retailers would be able to reach a larger customer base i.e. on a more global basis and not depend only on Malaysian buyers.

Nevertheless, efforts must be taken to increase number of Malaysian buyers as TNS Interactive – Global eCommerce Report 2002, has shown that only 1 percent of the total population and 3 percent of the Internet users buys online. This issue has to be dealt with at a higher level because it involves not only the national policy of "growth with equity" to information, but global connectivity per say. The Malaysia government in its effort to bridge the gaps of the 'information rich' and information poor', implemented the Communications and Multimedia Act (Act 588). The Act addresses the issue of Universal Service, i.e. availability, equitable access and affordability. Availability means that coverage of network services (telephone, Internet, etc.) must be made available nationwide, when and where they are needed. Equitable access means all consumers should be given equal treatment. There must not be discrimination in terms of price, service and quality, regardless of geographical location. Affordability is translated as network services that must be affordable to the people. It is hoped that more local buyers will surface and buy products sold by Malaysians retailers.

The paper has shown that the level of E-Commerce practices in Malaysia is still lagging behind developed countries such as USA, Europe and neighbor Singapore, who are seen to be in a more advantageous position as they have the latest technology, knowledge and highly skilled and talented human resource. In addition, they are also better positioned in terms of infrastructure, education and suppliers of products and services. Most importantly they have a bigger market share and better access to market.

Based on the various stimuli provided by the government, the development of E-Commerce will accelerate during the Eighth Plan period. Special focus however, needs to be given towards promoting and encouraging the wider use of E-Commerce as a new way of doing business through the digital network particularly among the SME. The government acts as the catalyst to promote the environment for E-Commerce to flourish, however, the businesses and communities within Malaysia will have to respond and participate actively in the development and usage of E-Commerce. Having many stimuli to promote E-Commerce practices is not adequate if the number of participants is still very small. More concentrated efforts should be taken to improve this situation. It must be stressed that the E-Commerce grant program introduced by the government has been discontinued as it has reached the allocated in June 2002. This implies that the SME have taken up the grants to initiate E-Commerce activities. Future research must be conducted to analyze the characteristics of these SME. It is also suggested that this research be expanded to cover all the states in Malaysia and to include other ethnicities as well. This would enable us to obtain a more accurate picture of E-Commerce practices in Malaysia.

References

Ainin, S (2000), Status of E-Commerce Application in Malaysia, *Information Technology for Development Journal*, Vol 9, 3 / 4, 153-161.

Ainin, S and Rohana, J (2000), Implementation of E-Commerce Applications in the Manufacturing Sector, *ETEC2000 Proceedings*, 23-24 November, Kuala Lumpur.

Ainin, S, Rohana, J and Shamsul, B (2001),The Development of E-commerce in Malaysia, in *Towards the E-Society E-Commerce, E-business, E-Government,* edited by Schmid, B, Stanoevska, K and Tschammer, V, Kluwer Publishing, Zurich, 341-353.

Anonymous, (2000), Barriers to E-Commerce, *Computimes*, 10 February.

Augher, P and Gallaugher, J.M (1997), Factors Affecting the Adoption of the Internet-based Sales Presence for Small Business, *Information Society*, Vol 13, July, 38-53.

Chadwick, F.E, Doherty, N and Hart, C (2002), Signs of Change? A Longitudinal Study of Internet Adoption in the UK Retail Sector*, Journal of Retailing and Consumer Services*, Vol 9, 71-80.

Cheng, M.Y (2001), Competing in the Knowledge Economy in Malaysia and the K-economy edited by David N.Abdulai, Pelanduk, Malaysia.

Cockburn, C and Wilson, T (1996), Business use of the WWW, *International Journal of Information Management,* Vol 16, no 2. at http:// www.shef.ac.uk/~is/publications/infres/paper6.html).

Daniel, E, Wilson, H and Myers, A (2002), Adoption of E-commerce by SMEs in the UK, *International Small Business Journal*, Vol 20, no 3, 253-270.

EDS (2001), Strategy Knowledge Transfer, March.

Fahri, K and Omar, K (2001), Electronic Commerce Use in Small and Medium-Sized Enterprises in *Towards the E-Society E-Commerce, E-business, E-Government*, edited by Schmid, B, Stanoevska, K and Tschammer, V, Kluwer Publishing, Zurich, 329-340.

Fatimah, M. A, Kusairi, M. N and Mohd, F. A (2000), E-commerce Adoption in Malaysia: Problems and Barriers from the Firms' Perspective, *International Conference on Electronic Commerce Proceedings*, 21-23 November, Kuala Lumpur.

Haynes, P, Becherer, R, and Helms, M (1998), Small and mid-sized businesses and Internet use: unrealized potential? *Internet Research: Electronic Networking Application and Policy*, Volume 8, no 3, 229-235.

Kalakota, R, Whinston, A (1997), Electronic Commerce: A Manager's Guide, Addison Wesley.

Kardaras, D and Papathanassiou, E (2000), The development of B2C e-commerce in Greece, *Internet Research*, Vol 10, no 4, 1066-2243.

Lawrence, E, Corbitt, B, Tidwell, A, Fisher, J and Lawrence, J (1998), Internet Commerce: Digital Models for Business, John Wiley & Sons Australia, Ltd.

Lewis, R and Cockrill, A (2002), Going Global – Remaining Local: The Impact of E-commerce on Small Retail Firms in Wales, *International Journal of Information Management,* Vol 22, 195-209.

Malaysia (2001), Eight Malaysia Plan 2001-2006, Kuala Lumpur, Economic Planning Unit.

Malaysia External Trade and Development (2003), at http://www.matrade.gov.my.

Manecksha F (January 2003), More SMEs Using ICT, *Computimes*, Thursday 16 January.

Ministry of International Trade and Industry (2001), Electronic Commerce, Ministry of International Trade and Industry Report 2000.

Morganosky, M.A (1997), Retailing and the Internet: A Perspective On the Top 100 US Retailers. Research Note, *International Journal of Retail and Distribution Management*, Vol 25, no 11, 372-377.

New Straits Times (October 2002), SMEs Slow to Take Up Grants, Management Times, Monday 14 October.

Nua Internet Surveys (2002), Nua Limited at http://www.nua.ie/surveys.

O'Keefe, R.M, O'Connor, G and Kung, H.J (1998), Early Adopters of the Web as a Retail Medium: Small Company Winners and Losers, *European Journal of Marketing*, Vol 32, no 7/8, 629-643.

Poon, S and Jevons, C (1997), Internet-enabled International Marketing: A Small Business Network Perspective, *Journal of Marketing Management*, Vol 13, 29-41.

Poon, S and Swatman, P (1997) Small Business Use of the Internet: Findings from Australian Case Studies, *International Marketing Review*, Vol 14, no 5, 385-402.

Poon, S and Swatman, P (1999) An Exploratory study of small business Internet Commerce Issues, *Information and Management*, 35, 9-18.

Riquelme, H (2002), Commercial Internet Adoption in China: Comparing the Experience of Small, Medium and Large Businesses, *Internet Research: Electronic Networking Applications and Policy*, Vol 12, no 3, 276-286.

Small Medium Industry Development Corporation (2002) at http://www.smidec.gov.my/homepage/homepage12.nsf.

Soh, C, Quee, M, Fong, G, Chew, D and Reid, E (1997), The use of the Internet for business: the experience of early adopters in Singapore, *Internet Research: Electronic Network Application and Policy,* Volume 7, no 3, 217-228.

The Star (November 2002), Report: 655m Internet Users Worldwide by Year-End, in Tech.Plus Thursday 21 November.

Turban, E, Lee J, King D and Chung, H.M (2000), Electronic Commerce: A Managerial Perspective (1st. Edition), Prentice-Hall, Inc.

Wigand, R. T (1997), Electronic Commerce: Definition, Theory and Context, The Information Society, Vol 13, 1-16.

World Trade Organization (1998), Electronic Commerce and the Roles of the WTO, March, Geneva.

Yuserrie, Z, Ramayah, T and Yeong, UC (2002), A Study on Factors Driving Electronic Commerce Initiative and Organization Readiness, *International Conference on Electronic Commerce Proceedings,* 21-23 November, Kuala Lumpur.

Zwass, V (1998), Structure and Macro-Level Impacts of Electronic Commerce : From Technological Infrastructure to Electronic Market Places in Emerging Information Technologies ed. Kenneth E. Kendall, Thousand Oaks, CA: Saga Publications.