


**UNIVERSITI MALAYSIA SABAH**  
**BORANG PENGESAHAN STATUS TESIS**

**JUDUL** : DETERMINANTS OF E-COMMERCE ADOPTION  
AMONG ENTREPRENEURS  
**IJAZAH** : MASTER OF BUSINESS ADMINISTRATION  
SESI PENGAJIAN 2009-2010


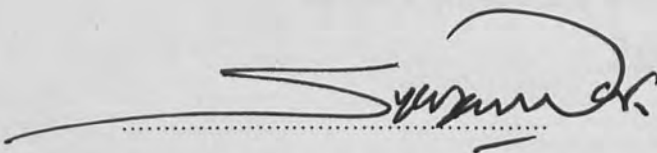
Saya, PENNY POON MAY LANE mengaku membenarkan tesis sarjana ini disimpan di Perpustakaan Universiti Malaysia Sabah dengan syarat-syarat kegunaan berikut:

1. Tesis adalah hak milik Universiti Malaysia Sabah.
2. Perpustakaan Universiti Malaysia Sabah dibenarkan membuat salinan untuk tujuan pengajian sahaja.
3. Perpustakaan dibenarkan membuat salinan tesis ini sebagai bahan pertukaran Institusi Pengajian Tinggi.
4. TIDAK TERHAD

Disahkan oleh,



Penulis: Penny Poon May Lane  
Alamat: 26, Lorong Raja Udang 3,  
Taman Kingfisher,  
88450 Kota Kinabalu, Sabah.

  
TANDATANGAN PUSTAKAWAN

Penyelia: Prof. Dr. Syed Azizi Wafa Syed Khalid Wafa



**DETERMINANTS OF E-COMMERCE ADOPTION  
AMONG ENTREPRENEURS**

**PENNY POON MAY LANE**

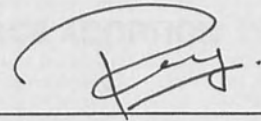
**DISSERTATION SUBMITTED IN PARTIAL  
FULFILLMENT FOR THE DEGREE OF  
MASTER OF BUSINESS ADMINISTRATION  
(MBA)**

**SCHOOL OF BUSINESS AND ECONOMICS  
UNIVERSITI MALAYSIA SABAH  
2010**



## DECLARATION

I declare that this is the result of my own research except as cited in reference. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree.



PENNY POON MAY LANE

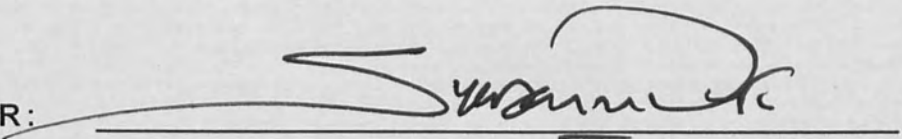
PE2009-8645C

## CERTIFICATION

NAME : PENNY POON MAY LANE  
MATRIC NO : PE20098645C  
TITLE : DETERMINANTS OF E-COMMERCE ADOPTION  
AMONG ENTREPRENEURS  
DEGREE : MASTER OF BUSINESS ADMINISTRATION  
VIVA DATE : 28 JUNE 2010

DECLARED BY:

SUPERVISOR:



PROF. DR. SYED AZIZI Wafa SYED KHALID Wafa

## ACKNOWLEDGEMENT

First and foremost, I would like to thank my supervisor, Prof. Dr. Syed Azizi Wafa Syed Khalid Wafa for his guidance, advice and full support throughout this study. Various techniques had been learned and I gained a lot of constructive knowledge and skills Prof. Dr. Syed Azizi Wafa Syed Khalid Wafa. His expertise and passion had brought me strength and courage to complete this final year project. Above all, I would like to thank Prof. Dr. Syed Azizi Wafa Syed Khalid Wafa for his precious time and comments and I truly appreciated it.

In addition, I wish to thank all the respondents for their time and cooperation given in helping me completing my questionnaire. Without their help and endurance, I would never be able to collect enough data for my research. Again, thank you all for your kind help and understanding during my sampling period.

Last but not least, I am grateful for all the moral support, strength, faith and help I received from my family, course mates and all my dear friends. Warmest gratitude from me for your endless support and encouragement that guide me through this study.

# ABSTRACT

## DETERMINANTS OF E-COMMERCE ADOPTION AMONG ENTREPRENEURS

A research study has been carried out to find out the determinants of electronic commerce (e-commerce) adoption among entrepreneurs. A conceptual framework has been formed and modified to suit this research based on the original Technology Acceptance Model (TAM) which are including Perceived Usefulness and Perceived Ease of Use as the intervening variables. The external variable or independent variables chosen for this research were Demographic Profile and Entrepreneurial Characteristics. Age, Ethnicity and Education Level were chosen as the dimensions to be analyzed in Demographic Profile while Need for Achievement, Risk-taking Ability and Locus of Control were the chosen dimensions for Entrepreneurial Characteristics. A total of 290 questionnaires have been distributed via email to all the possible respondents whom are established business owners regardless brick-and-mortar, brick-and-click, or click only business in Kota Kinabalu, Sabah. However, only 170 respondents were sampled due to the constraint of time. SPSS statistical tools were used as the medium to analyze the data collected. From the results obtained, demographic profile has been proven to be invalid as the determinant while entrepreneurial characteristics are valid as the determinant of the e-commerce adoption. The intervening variables have shown positive relationship with the dependent variable, the degree of e-commerce adoption as well. Hence, it can be concluded that entrepreneurial characteristics (need for achievement, risk-taking ability and locus of control) have significant relationship with the e-commerce adoption and they are valid as the determinants of the degree of e-commerce adoption.

## ABSTRAK

### FAKTOR PENENTU USAHAWAN MENGGUNAKAN E-DAGANG

Satu kajian telah dijalankan untuk memperolehi determinan atau faktor penentu yang menyebabkan usahawan mengguna elektronik dagang (e-degang) dalam urusan perniagaan. Rangka konseptual yang sesuai telah diubahsuai daripada "Technology Acceptance Model" atau TAM yang asal untuk digunakan dalam kajian ini. "Perceived Usefulness" dan "Perceived Ease of Use" merupakan dua pembolehubah mencelah dalam rangka konseptual malah pembolehubah tidak bersandar yang digunakan dalam kajian ini ialah Butiran Demografik dan Ciri-ciri Keusahawanan. Umur, bangsa dan tahap pendidikan merupakan dimensi yang dipilih untuk Butiran Demografik manakala 'keinginan untuk pencapaian', 'keupayaan pengambilan risiko' dan 'lokus kawalan' merupakan dimensi yang dipilih untuk Ciri-ciri Keusahawanan. Sejumlah 290 soal selidik telah diagihkan melalui e-mel untuk semua responden-responden yang merupakan pemilik-pemilik perniagaan mantap tanpa menghiraukan jenis perniagaan biarpun ia berkedai sahaja, berkedai dan membuat perniagaan dalam internet, atau hanya membuat perniagaan dalam internet sahaja di Kota Kinabalu, Sabah. Bagaimanapun, hanya 170 responden yang membalas disebabkan kekangan masa. Alat-alat statistic SPSS telah digunakan sebagai bahantara untuk menganalisis data yang dipungut. Dari keputusan yang dianalisis, Butiran Demografik telah dibuktikan tidak sesuai untuk dijadikan sebagai faktor penentu manakala Ciri-ciri Keusahawanan telah dibuktikan sesuai untuk dijadikan sebagai faktor penentu yang menyebabkan usahawan mengguna elektronik dagang. Pembolehubah mencelah juga didapati menunjukkan hubungan positif dengan pembolehubah bersandar iaitu darjah penerimaan e-dagang. Oleh itu, adalah disimpulkan bahawa Ciri-ciri Keusahawanan (keinginan untuk pencapaian, keupayaan pengambilan risiko dan lokus kawalan) mempunyai hubungan positif nyata dengan darjah penerimaan e-dagang dan ia adalah sesuai untuk dijadikan faktor penentu yang menyebabkan usahawan mengguna elektronik dagang dalam urusan perniagaan.

# TABLE OF CONTENTS

	Pages
TITLE	i
DECLARATION	ii
CERTIFICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
ABSTRAK	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	xi
LIST OF FIGURES	xii
LIST OF APPENDIX	xiii
 CHAPTER 1: INTRODUCTION	
1.1 Introduction	1
1.2 Problem Statement	3
1.3 Research Objectives	4
1.4 Scope of Study	4
1.5 Significance of the Study	5
1.6 Outline of Study	7
 CHAPTER 2: E-COMMERCE ADOPTION IN MALAYSIA	
2.1 The New Economy	8
2.2 Migration from Traditional Business to E-commerce and E-business	10
2.3 Online History in Malaysia	11
2.4 E-commerce Adoption in Sabah	14
 CHAPTER 3: LITERATURE REVIEW	
3.1 Electronic Commerce and Electronic Business	15
3.1.1 Electronic Commerce (E-commerce)	15
3.1.2 Electronic Business (E-business)	16
3.1.3 Difference between E-commerce and E-business	17

3.2	Theoretical Background for Research Model	17
3.2.1	Technology Acceptance Model (TAM)	18
3.3	Variables Justification	20
3.3.1	Demographic Profile	20
3.3.2	Entrepreneurial Characteristics	21
3.3.2.1	Insight of Entrepreneurial Characteristics	21
3.3.2.2	The Entrepreneurial Characteristics	23
3.4	Summary	27

#### CHAPTER 4 : RESEARCH FRAMEWORK AND METHODOLOGY

4.1	Conceptual Development	28
4.2	Research Framework	29
4.3	Research Hypotheses	31
4.3.1	Demographic Profile	32
4.3.2	Entrepreneurial Characteristics	35
4.3.3	Perceived Usefulness, Perceived Ease of Use and Degree of E-commerce Adoption	37
4.4	Research methodology	40
4.4.1	Population Sampling and Sample Size	40
4.4.2	Data Collection Method	41
4.4.3	Questionnaire Design	41
4.5	Data Analysis	42

#### CHAPTER 5 : RESEARCH ANALYSIS AND FINDINGS

5.1	Profile of Respondents	43
5.1.1	Total Sample	43
5.1.2	Gender	45
5.1.3	Age Category	45
5.1.4	Ethnicity	45
5.1.5	Education Level	45
5.1.6	Annual Income (Before Taxes)	46
5.2	Technology Experiences Profile	46
5.2.1	Years of Experience in ICT Usage	47
5.2.2	Years of Experience in Internet Usage	48
5.2.3	Years of Experience in E-commerce Usage	48

5.3	Descriptive Analysis	48
5.4	Screening for Normality	50
5.4.1	Normality Testing for Age	50
5.4.2	Normality Testing for Ethnicity	50
5.4.3	Normality testing for Education Level	51
5.4.4	Normality Testing for E-commerce Usage and Intention To Use	51
5.4.5	Normality Testing for Perceived Usefulness	52
5.4.6	Normality Testing for Perceived Ease of Use	52
5.4.7	Normality Testing for Need for Achievement	52
5.4.8	Normality Testing for Risk-taking Ability	53
5.4.9	Normality Testing for Locus of Control	53
5.5	Screening for Reliability	54
5.6	Hypotheses Testing	56
5.6.1	Multiple Regression Analysis	57
5.6.2	Multiple Regressions Analysis for Hypothesis 1 and Hypothesis 2	60
5.6.3	Multiple Regressions Analysis for Hypothesis 3 and Hypothesis 4	62
5.6.4	Correlation Analysis for Hypothesis 5, Hypothesis 6 and Hypothesis 7	64
5.6.5	Hierarchical Regression Analysis for Hypothesis 8 and Hypothesis 9	66
5.7	Summary of Hypotheses	69

## CHAPTER 6 : DISCUSSION AND IMPLICATION

6.1	Perceived Usefulness and Perceived Ease of Use	71
6.2	Demographic Profile not valid as Determinants	72
6.3	Entrepreneurial Characteristics as Determinants	74
6.4	Theoretical Implication	76
6.5	Practical Implication	77

CHAPTER 7 : CONCLUSION

7.1	Summary	78
7.2	Research Limitation	79
7.3	Future Research Recommendation	79

REFERENCE	80
-----------	----

APPENDIX	87
----------	----

## LIST OF TABLES

Table No.	Title	Pages
3.1	Entrepreneurship Type, Personality Type and Attributes	23
3.2	Summary of Entrepreneurial Characteristics	24
4.1	Summary of Variables Used	31
4.2	List of Hypotheses Generated	38
5.1	Demographic Profile of Respondents	44
5.2	Technology Experiences Profile of the Respondents	47
5.3	Descriptive Summary of Variables	49
5.4	Summary of Normality Testing	54
5.5	Summary of Reliability Testing	55
5.6	Multiple Regressions Summary for Demographic Profile, Perceived Usefulness and Perceived Ease of Use	60
5.7	Multiple Regressions Summary for Entrepreneurial Characteristics, Perceived Usefulness and Perceived Ease of Use	62
5.8	Summary of the Correlation Table	64
5.9	Summary of the Hierarchical Regression Analysis for Perceived Usefulness	66
5.10	Summary of the Hierarchical Regression Analysis for Perceived Ease of Use	67
5.11	Summary of the Hypothesis Results	69

## LIST OF FIGURES

Figure No.	Title	Pages
2.1	Total Subscribers and Penetration rate of Dial-up Internet in Malaysia from 1997-2006.	13
2.2	Penetration rate of Dial-up Internet and Broadband according to different states in Malaysia (2006).	13
3.1	Framework of Technology Acceptance Model (TAM)	20
4.1	Research Framework	30
4.2	Research Model with Research Hypothesis	32

## LIST OF APPENDIX

Appendix		Pages
A	Questionnaire	87
B	Frequency Table for Profile of Respondents	93
C	Technology Experiences Profile	95
D	Descriptive Summary of Variables	96
E	Screening for Normality	102
F	Screening for Reliability	114
G	Multiple Regression Analysis and Correlation Analysis	118

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The exponential growth of the internet has changed the rules of competition in many industry sectors. Many big corporations including SMEs are integrating their business into the internet where they can reach a larger market scope online. Doing business online has been a new trend nowadays and many customers are switching to shopping online. Therefore, more and more entrepreneurs are doing business online as there are demands that initiate the business especially among SMEs.

The internet is an exceptionally important new technology and it has received so much attention from a variety of aspects of people nowadays from various fields. More and more entrepreneurs are starting to do business online and it is not surprising that big corporations from different industries are opting to establish official websites of their own companies as well. Bloggers are gaining popularity and their counter hits per day can lead them to earn a fortune through advertisement sponsorship online.

Despite the fact that the internet is able to offer a great deal of advantages for entrepreneurs, the internet has proved its effectiveness in information gathering when the Web is used as the communication and information medium. Adopting e-commerce has also facilitated direct and indirect advertising on the Internet as well as easy access to the potential customers around the world which ultimately lowered the cost of communication; a cost saving method especially crucial for small firms (Walczuch *et al.*, 2000).



The most significant factor that transformed the internet into a global communications phenomenon was the development of the World Wide Web (www) in the early 1990s. The introduction of hypertext that linked documents held on the internet servers has extended the functionality of the internet. This introduction which has facilitated access to particular parts of documents or even to other related documents held on other servers was called the hypertext transfer protocol (HTTP) and it was derived from a mark-up language called hypertext markup language (HTML). Within these servers, a unique addresses termed universal resource locators (URL's) are given to each documents or pages within documents and the ability to access pages, documents and servers from various different websites has shaped a network of interconnectivity and ultimately, give rise to the term of World Wide Web (Combe, 2006).

With all the advantages and benefits offered by the Internet, e-commerce adoption by entrepreneurs is rising significantly in recent years. As noted by Ho *et al.* (2007), e-commerce has been blooming in the business cycle where the traditional brick-and-mortar business has undergone transition to now leading dotcom or click-only business. The e-commerce adoption has been a strategic use of the organization, despite the size of the organization, as it provides opportunities for various type of business to flourish in the maturing of e-commerce. Although smaller firms are slower in adopting the e-commerce compare to their larger counterparts at the first place, however, the usage of e-commerce among small firms are growing rapidly in the recent years (Drew, 2003), suggesting that e-commerce has a significant beneficial impact in the business practices.

## 1.2 Problem Statement

The internet is a tremendously imperative new emerging technology nowadays and it is not surprising that it has received enormous interest from executives, investors, entrepreneurs and business observers (Porter, 2001). Several observers have also recommended that major opportunities are made available for new entrepreneurs and SMEs businesses to thrive in the potential of e-commerce, according to Drew (2003).

Regardless of the widespread acceptance of internet use in corporate environments, the internet usage continues to diverge widely among small and medium sized enterprises (SMEs). The research study by Sadowski *et al.* (2002) has provided a clear understanding of the motivations for adoption and use of the internet by SMEs. The authors have found out that the establishment of communication needs is the driving force in the adoption of the internet by SMEs. However, further research is needed to strengthen the finding as suggested by the authors.

In the paper presented by Ozer (2005), the author has formed a conceptual model for the success of online business as the internet business environment is becoming increasingly complex and uncertain. The highly dynamic and uncertain nature of the internet environment has caused failures of large number of e-business soon after their market introduction. Hence, the conceptual model formed is hoped to be useful for researchers to develop and test research hypothesis as well as for practitioners to manage their e-business more effectively.

The past literature has offered a great number of studies in the area of e-business and despite the large number of earlier studies, more research is needed in this area which will integrate multiple disciplines into a single study that will ultimately, offer a holistic view of the e-business as stated by Ozer (2005) as well. There are, still, very limited empirical research has been performed to evaluate the determinants that

influence the adoption of e-commerce by a firm as stated by Lin & Lin (2008). Many unanswered questions in the e-commerce are still to be explored and how far into the future will small business fully embrace e-business is remain uncertain (Poon & Swatman, 1999). Hence, this research project is aimed to contribute into e-commerce through entrepreneurial perspective by determining the determinants which initiates entrepreneurs to adopt e-commerce.

### **1.3 Research Objectives**

Doing business online is a trend nowadays among Malaysian entrepreneurs. Most of them do not possess an actual shop but aided with only a computer and internet connection, they are ready to do business online. After going through this research project, the objectives to be achieved are:

1. To identify the determinants of e-commerce adoption among entrepreneurs;
2. To indentify the demographic profile influence on the degree of e-commerce adoption among entrepreneurs;
3. To indentify the entrepreneurial characteristic influence on the degree of e-commerce adoption among entrepreneurs; and
4. To identify the mediating influence of perceived usefulness and perceived ease of use on the degree of e-commerce adoption among entrepreneurs.

### **1.4 Scope of Study**

In order to search for the answer to this research project concerning the determinants of adoption of e-commerce among entrepreneurs, the evaluation will be carried out

based on the measures espoused from previous research on related study. The degree of e-commerce adoption are determined by the variables such as entrepreneurial characteristics, demographic factors, skill intensity, government policy, openness of economy, competitive environment and other firm-specific factors such as size of operation, export intensity, international orientation, wage rates, and profit margins (Lal, 1999; Lal, 2005; Porter & Donthu, 2006). However, only two variables will be focus in this research project due to time constraints and the variables focused are (1) demographic factors and (2) entrepreneurial characteristics.

The research design chosen for this research is cross-sectional study. The sample of this study will be using convenient sample that consists of entrepreneurs with established business regardless brick-and-mortar, brick-and-click, or click only business. The sample location will be focus primarily in Kota Kinabalu, Sabah.

### **1.5 Significance of the Study**

The first e-commerce was founded in the early to mid-1990s. Survey in several countries has showed that SMEs have been slow in adopting e-commerce than their larger counterparts (Drew, 2003). Although in many countries small business provides the foundation for the entire economy, small business often face difficulties and hardship due to lack of resources as well as their fragility in the formative stage. However, the rate of internet usage in SMEs is growing quite rapidly. More and more SMEs are integrating internet into their business to form e-commerce as governments around the world have funded test-bed projects to encourage internet adoption and e-commerce among small business (Poon & Swatman, 1999).

The internet, no doubt, is able to offer great deal of advantages to small firms by providing 24 hour visibility around the world. The internet adoption does not require

high investment costs or an advanced pre-existing telecommunication infrastructure as well. According to Lal (2005) the adoption of internet by SMEs has achieved a higher rate (68.8%) than the larger firms (66.7%). The exponential growth of retail outlets accessible via WWW has presents consumers with a bewildering range of opportunities to online shopping (Ennew, *et al.* 2005) which created a balance demand and supply in the virtual world.

The internet, which acts as an information-rich resources and an inter-organizational communications tool, has drastically transformed the way firms gather, produce and transmit competitive intelligence. The adoption of internet into business has become one of the prerequisite to stay competitive in the market as the ability to stay ahead in the market via competitive intelligence will win the firm an unbeatable competitive advantage. The competitive intelligence has become internationally recognized and practiced discipline as it is a process of knowing what the competition is up to and staying one step ahead of them by gathering information about competitors and, ideally, applying it to short and long-term strategic planning of the firm (Teo & Choo, 2001). Moreover, early research which focused on case studies of small sample of organizations also emphasized on how companies have derived competitive advantage via e-business (Martinsons, 2002). These evidences have further highlighted the importance of adopting e-commerce and how, by understanding the relationship between determinants and e-commerce will benefit the organizational in practice.

According to the research done by Lin & Lin (2008), technology resources are key variables which lead to greater degree of success on implementing e-business. Thus, the top management and Information System executives who wished to deploy e-commerce will need to assess their technological investment, as suggested by the empirical findings. A favorable e-business or e-commerce environment should be

created also to improve the responsiveness market changes as well as to enhance customer services. With these underlined importance of understanding the e-commerce adoption, valuable guidelines can be provided to policy-makers and practitioners, especially the top management, in implementing e-business and accelerating the e-business development in their firm. Furthermore, this research might contribute towards academic theory as well when the theoretical model for e-commerce was projected from an entrepreneurial perspective.

## **1.6 Outline of Study**

The next chapter, Chapter 2 is describing the history condition of internet and e-commerce adoption in Malaysia. Chapter 3 focused on literature review whereby related past literatures are review regarding on this research topic to support the significance of this research. Chapter 4 discuss mainly on the formation of theoretical framework for the research design along with the independent and dependent variables chosen. Hypotheses are formed based on the research framework as well in the Chapter 4.

The following Chapter 5 presented on the result of the analysis done on all the data collected by using different testes in SPSS. Chapter 6 is primarily concentrating on discussion of research finding together with the implication of the findings and limitation of research done. The last chapter, Chapter 7, is a chapter to conclude all chapters beforehand by summarizing the research done, findings and implications.

## CHAPTER 2

### E-COMMERCE ADOPTION IN MALAYSIA

#### 2.1 The New Economy

The uses of the internet, digital technology, or information and communications technology (ICT) have significant contributions to the economy and together, these types of technologies have created a 'new economy'. Basically, the emergence or creation of this new economy is based on the entrepreneurship in knowledge creation and sharing, innovation and creativity, and utilizing information technology for developing and selling new products and services in the market. The dynamic changes in the marketplace have encouraged entrepreneur to incorporate innovation and information technology into the product and service development in order to stay competitive in the market. Hence, the new economy which defined in the late twentieth century will probably be the dominant driver of economies into the new millennium (Combe, 2006).

In the context of old economy, on one hand, the information flow was seen as physical in terms of cash, checks, invoice, bills of lading, reports, receipts, face-to-face meeting, analog telephone calls or radio and television transmissions, blueprints, maps, photographs, musical scores, catalogues, and direct mail advertisements. In the new economy, on the other hand, information in all forms have become digitalized and reduced to bits stored in computers and racing at the speed of light across the networks. This new world of possibilities has thereby created a significant invention



which transformed the old economy to now new, digitalized, improved and well-integrated economy worldwide (Carlsson, 2004).

The emergence of this new economy has been boosted by the development and advancement of the infrastructure that supports the internet, ICT and digital technology. With the aid of high-speed broadband internet access, digital exchanges and fiber-optic networks, more and more people are getting connected to the internet access everyday with greater flexibility and scope of activities where convergence of technologies take place. Convergence of technologies have brought the once separated distinct industry such as television broadcasting, internet and telecommunications together into one to offer the consumers greater scope for accessing services via one technology (Combe, 2006).

The same goes in the business level as well whereby organizations are no longer seen as individual entities, but rather, as a part of an integrated network through collaboration and partnership. ICT plays a key role in this scenario to enable the business transaction and communication runs smooth while the internet unlocks the gateway of exchanging information, products and services around the globe without any restraints of time or distance. The world is borderless now and the new economy is characterized by changes to the boundaries of whole economies as well as industries and firms. These changes have indirectly led to a noticeable hastening in globalization in the last few decades (Combe, 2006).

Knowledge sharing, encouraging innovation and creativity, integrating global supply chains, facilitating global trade and creating wealth have been made possible with the diffusion of information technologies. There is also local characteristic to the new economy as organizations were utilizing information technologies to serve local or regional demand of the market. Moreover, new economy has led changes in the competitive structure of industries as well. The traditional model has given way to a

need for organizations to adapt to dynamic changes in market conditions, seek new opportunities, enhance learning, embrace change and innovation, and create and share knowledge (Combe, 2006).

## **2.2 Migration from Traditional Business to E-commerce and E-business**

The beginning of new networked economy has called for new concept and new understanding of doing business. Based on the three dimensions of business which are product, process and delivery agent, as stated by Bremser & Chung (2005), three categories of business can be identified namely, traditional business, partial e-business, and pure e-business. With the emergence of new economy in the past few decades, there is a visible trend of traditional businesses migrating either towards e-business or expanding to incorporate e-business into the organization. In order to compete in a dynamic changing environment, many firms are adopting organizational designs, such as networked incubators, which provide quick response, innovation and entrepreneurial behavior according to Bremser & Chung (2005) as well.

In the research done by Hong & Zhu (2006), technology integration, web functionalities, and web spending are the three drivers for e-commerce adoption. Although adoption is a necessary prerequisite for migration, however, factors affecting adoption may actually have a different effect on migration as well. Higher level of technology integration might make it easier for firms to adopt e-commerce, yet, this cannot assure the success on the internet. In contrast, web functionalities and web spending are positively related to the level of e-commerce migration after adoption. According to the authors as well, websites with more functionality such as easy browser, search engine, quick photo viewer, html link and other web applications have

## REFERENCES

- Agarwal, R. & Prasad, J. Are Individual Differences Germane to the Acceptance of New Information Technologies? *Decision Sciences*. 30(2): 361-391.
- Agarwal, R. & Prasad, J. 1998. A Conceptual and Operational Definition of Personal Innovativeness in the Domain of Information Technology. *Information Systems Research*. 9(2): 204-215.
- Barringer, B. R. & Ireland, R. D. 2008. *Entrepreneurship: Successfully Launching New Ventures (2<sup>nd</sup> edition)*, New Jersey: Pearson Prentice Hall.
- Bolongkikit, J., Obit, J. H., Asing, J. G., Tanakinjal, G. H. 2006. An Exploratory Research of the Usage Level of E-commerce among SMEs in the West Coast of Sabah, Malaysia. *Journal of Internet Banking and Commerce*. 11(2).
- Bremser, W. G. & Chung, Q. B. 2005. A Framework for Performance Measurement in the E-business Environment. *Electronic Commerce Research and Applications*. 4, Elsevier B. V., 395-412.
- Bryman, A. & Cramer, D. 1997. *Quantitative Data Analysis with SPSS Release 10 for Windows: A Guide for Social Scientist*. Routledge.
- Burton-Jones, A. & Hubona, G. S. 2006. The Mediation of External Variables in the Technology Acceptance Model. *Information & Management*. 43, Elsevier B. V., 706-717.
- Carlsson, B. 2004. The Digital Economy: What is new and what is not? *Structural Change and Economic Dynamics*. 15, Elsevier B. V., 245-264.
- Chaffey, D. 2004. *E-Business and E-Commerce Management (2<sup>nd</sup> edition)*, Prentice-Hall: Harlow.

- Combe, C. 2006. *Introduction to E-business: Management and Strategy (1<sup>st</sup> edition)*, Butterworth-Heinemann Publications, Elsevier Ltd.
- Davis, F. D. 1989. Perceived Usefulness and Perceived Ease of Use and User Acceptance of Information Technology, *MIS Quarterly*. **13**(3).
- "Department of Statistics Malaysia: The Source of Malaysia's Official Statistics" in <http://www.statistics.gov.my/>. 11 April 2010.
- Drew, S. 2003. Strategic Uses of E-Commerce by SMEs in the East of England. *European Management Journal*. **21**(1), Elsevier Science Ltd., 79-88.
- Ennew, C., Lockett, A., Blackman, I., Holland, C. P. 2005. Competition in Internet Retail Markets: The Impact of Links on Web Site Traffic. *Long range Planning*. **38**, Elsevier Ltd, 359-372.
- Gunasekaran, A., Marri, H. B., McGaughey, R. E., Nebhwani, M. D. 2002. E-commerce and its Impact on Operations Management. *International Journal of Production Economics*. **75**, Elsevier Science B. V., 185-197.
- Hertzog, C., Hultsch, D. F. 2000. Metacognition in Adulthood and Old Age. In: Craik, F. & Salthouse, T. (eds). *The handbook of Aging and Cognition (2<sup>nd</sup> edition)*, Lawrence Erlbaum Associates, New Jersey.
- Hisrich, R. D. & Peters, M. P. 2002. *Entrepreneurship (5<sup>th</sup> edition)*. Boston: McGraw-Hill.
- Ho, S. H., Kauffman, R. J., Liang, T. P. 2007. A Growth Theory Perspective on B2C E-commerce Growth in Europe: An Exploratory Study. *Electronic Commerce Research and Applications*. **6**, Elsevier B. V., 237-259.

- Hong, W. Y. & Zhu, K. 2006. Migrating to Internet-based E-commerce: Factors Affecting E-commerce Adoption and Migration at the Firm Level. *Information & Management*. **43**, Elsevier B. V., 204-221.
- "Internet World Stat: Usage and Population Statistics" in <http://www.internetworldstats.com/asia/my.htm> . 27 March 2010.
- Israel, G. D. 2009. *Sampling the Evidence Of Extension Program Impact*. Program Evaluation and Organizational Development, IFAS, University of Florida. PEOD-5. October.
- Keh, H. T., Nguyen, T. T. M., Ng, H. P. 2007. The Effects of Entrepreneurial Orientation and Marketing Information on the Performance of SMEs. *Journal of Business Venturing*. **22**, Elsevier Inc, 592-611.
- Kirby, D. A. 2002. *Entrepreneurship*. McGraw-Hill, Maidenhead.
- Kirby, D. A. 2004. Entrepreneurship Education: Can Business Schools Meet the Challenge? *Education & Training*. **46**(8/9): 510-519.
- Kuratko, D. F. & Hodgetts, R. M. 1995. *Entrepreneurship: A Contemporary Approach*. New York: The Dryden Press.
- Kuratko, D. F. & Hodgetts, R. M. 2004. *Entrepreneurship: Theory, process, Practice*. South Western Thomson Learning.
- Lal, K. 1999. Determinants of the Adoption of Information Technology: A Case Study of Electrical and Electronic Goods Manufacturing Firms in India. *Research Policy*. **28**, Elsevier Science Ltd, 667-680.
- Lal, K. 2005. Determinants of the Adoption of E-Business Technologies. *Telematics and Informatics*. **22**, Elsevier Ltd, 181-199.

- Legris, P., Ingham, J., Colletette, P. 2003. Why do People Use Information Technology? A Critical review of the Technology Acceptance Model. *Information & Management*. **40**, Elsevier B. V., 191-204.
- Lessem, R. 1986. *Enterprise Development*. Gower: Aldershot.
- Lin, H. F. & Lin, S. M. 2008. Determinants of E-business Diffusion: A Test of the Technology Diffusion Perspective. *Technovation*. **28**, Elsevier Ltd, 135-145.
- López-Nicolás, C., Molina-Castillo, F. J., Bouwman, H. 2008. An Assessment of Advanced Mobile Services Acceptance: Contributions from TAM and Diffusion Theory Models. *Information & Management*. **45**, Elsevier B. V., 359-364.
- "Malaysian Communication and Multimedia Commission" in <http://www.skmm.gov.my/>.  
1 April 2010.
- Martinsons, M. G. 2002. Electronic Commerce in China: Emerging Success Stories. *Information & Management*. **39**, Elsevier Science B. V., 571-579.
- McClelland, D. C. 1961. *The Achieving Society*, Van Nostrand, Princeton, New Jersey.
- Mohd Khairuddin Hashim & Syed Azizi Wafa. 2002. *Small & Medium-Sized Enterprises in Malaysia: Developmental Issues*. Kuala Lumpur: Prentice Hall.
- Ndubisi, N. O., Jantan, M. & Richardson, S. 2001. Is the Technology Acceptance Model Valid for Entrepreneurs? Model Testing and Examining Usage Determinants. *Asian Academy Management Journal*. **6**: 31-54.
- Ozer, M. 2005. Online Business: Tailoring Your Business Environment in order to compete. *International Journal of Information Management*. **25**, Elsevier Ltd, 137-149.

- Pavlou, P. 2003. Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*. 7: 60-103.
- Paynter, J. & Lim, J. 2001. Drivers and Impediments to E-commerce in Malaysia. *Malaysian Journal of Library & Information Science*. 6(2): 1-19.
- PERANGKAAN SOSIAL TERPILIH, SIRI 7. 2007. Jabatan Perangkaan Malaysia.
- Poon, S. & Swatman, P. M. C. 1999. An Exploratory Study of Small Business Internet Commerce Issues. *Information & Management*. 35, Elsevier Science Ltd, 9-18.
- Porter, M. E. 2001. Strategy and the Internet. *Harvard Business Review* March, 63-78.
- Porter, C. E. & Donthu, N. 2006. Using the Technology Acceptance Model to Explain How Attitudes Determine Internet Usage: The Role of Perceived Access Barriers and Demographic. *Journal of Business Research*. 59, Elsevier Inc., 999-1007.
- Qiu, L. Y. & Li, D. 2008. Applying TAM in B2C E-Commerce Research: An Extended Model. *Tsinghua Science and Technology*. 13(3): 265-272.
- Rogers, E. M. Diffusion of innovations. Fourth Edition. New York: The Free Press; 1995.
- Roscoe, J. T. 1975. Fundamental Research Statistics for the Behavioral Sciences (2<sup>nd</sup> edition). In Uma, S. & Bougie, R. 2009. *Research Methods for Business: A Skill Building Approach* (5<sup>th</sup> Edition), John Wiley & Sons, Inc, New York.
- Sadowski, B.M., Maitland, C., Dongen, J. 2002. Strategic use of Internet by small- and medium-sized companies: an exploratory study. *Information Economics and Policy*. 14, Elsevier Inc, 75-93.

- Sauer, C. 2000. Managing the Infrastructure. In: Willcocks, L., Sauer, C. (Eds.), Moving to E-business. Random House, London.
- Sekaran, U. 2003. *Research Methods for Business: A Skill Building Approach* (4<sup>th</sup> edition). New York: John Wiley & Sons, Inc.
- Shepherd, P. 2005. "Tools for Transformation" in <http://www.trans4mind.com/personality/risk.htm>. 24 April 2010.
- SIARAN KHAS PENYIASAT TENAGA BURUH USAHAWAN DI MALAYSIA, SIRI 4 BIL 1. 2009. Jabatan Perangkaan Malaysia.
- Smith, M. F. 1983. *Sampling Considerations In Evaluating Cooperative Extension Programs*. Florida Cooperative Extension Service Bulletin PE-1. Institute of Food and Agricultural Sciences. University of Florida.
- Teo, S. H., & Choo, W. Y. 2001. Assessing the Impact if Using Internet for Competitive Intelligence. *Information & Management*. 39, Elsevier Science Ltd, 67-83.
- Thompson, J. L. 1999. The World of the Entrepreneur: A New perspective. *Journal of Workplace Learning: Employee Counseling Today*. 11(6): 209-224.
- Utsch, A. & Rauch, A. 2000. Innovativeness and Initiatives as Mediators between Achievement Orientation and Venture Performance. *European Journal of Work and Organizational Psychology*. 9(1): 45-62.
- Vijayan, P., Perumal, V. & Shanmugam, B. 2005. Multimedia Banking and Technology Acceptance Theories. *Journal of Internet Banking and Commerce*. 10(1).
- Walczuch, R., Braven, G., Lundgren, H. 2000. Internet Adoption Barriers for Small Firms in the Netherlands. *European Management Journal*. 18(5), Elsevier Science Ltd., 561-572.

- Zakariya N. Belkhamza. 2008. *Determinants of Behavioural Intention of E-commerce Use by Tourism Organisations in Malaysia and Algeria*. Master Thesis. University Malaysia Sabah.
- Zakariya N. Belkhamza & Syed Azizi Wafa. 2009. The Effect of Perceived Risk on the Intention to Use E-commerce: The Case of Algeria. *Journal of Internet Banking and Commerce*. **14**(1).
- Zhang, N., Guo, X. H., Chen, G. Q. 2008. IDT-TAM Integrated Model for IT Adoption. *Tsinghua Science and Technology*. **13**(3): 306-311.
- Zhu, K. 2004. The Complementarity of Information Technology Infrastructure and E-commerce Capability: A Resource-based Assessment of their Business Value. *Journal of Management Information Systems*. **21**(1): 167-202.