

**BUSINESS TO CUSTOMER (B2C) E-MARKETPLACE FOR
SMALL AND MEDIUM ENTERPRISES IN UUM**

SHARF KHALED ALZU'BI

**UNIVERSITI UTARA MALAYSIA
2012**

B2C E-MARKETPLACE FOR SMALL AND MEDIUM ENTERPRISES IN UUM

A report submitted to Dean of Awang Had Salleh Graduate School in
Partial Fulfilment of the requirement for the degree
Master of Science of Information Technology
Universiti Utara Malaysia

By
SHARF KHALED ALZU'BI

Copyright © Sharf Alzu'bi, May 2012. All Rights Reserved

PERMISSION TO USE

In presenting this project in partial fulfillment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this project in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence by the Dean of Postgraduate and Research. It is understood that any copying or publication or use of this project or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my project.

Requests for permission to copy or to make other use of materials in this project, in whole or in part, should be addressed to

Dean of Awang Had Salleh Graduate School
College of Arts and Sciences
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman
Malaysia

ABSTRACT

E-Marketplaces can provide significant value to buying and selling organizations of all sizes. They facilitate more efficient and effective trade of goods and services, and eliminate inefficiencies inherent in the trading process. The development of business to customer e-Commerce has brought significant changes in recent years in Malaysia. Malaysian businesses, Small and Medium Enterprises (SME) have been relatively slow in web adoption. In UUM there are many Small and Medium Enterprises (SME) working at the mall of university, they needs to develop a trade methods to selling product and selling effectively, awareness of the problem which arises because the understanding of the electronic environment of the interaction of SMEs with customers. Moreover, during the holiday there are no any customers, which that mean cannot maintain the business. On other side, the students find it difficult to provide the daily needs such as fresh foods and deliver without damage. This study is to develop e-Marketplace within the University Utara Malaysia (UUM) and its surroundings, the prototype was develop by using C# language, and the research design adopted the general methodology. The prototype was evaluated by use questionnaire technique based on usability testing with the System Usability Scale (SUS). The prototype was assessed by a sample consists of sixty-three respondents. The results have been positive.

ACKNOWLEDGEMENT

I am most grateful to Allah and to those who have helped me during the process of my research. I am heartily thankful to my supervisor, Dr. Nor Farzana Binti Abd Ghani. Whose encouragement, guidance and support from the initial to the final level enabled me to develop an understanding of the subject? Deep gratitude goes to my parents and my family, for their love, support and encouragement.

TABLE OF CONTENTS

ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES	ix
LIST OF FIGURES	x

CHAPTER ONE:INTRODUCTION

1.1 Background	1
1.2 Problem Statement	4
1.3 Research Questions	5
1.4 Research Objectives	5
1.5 Research Scope	Error! Bookmark not defined.
1.6 Research Signification	6
1.7 Organization of the Project	6
1.8 Summary	7

CHAPTER TWO:LITERATURE REVIEW

2.1 E-commerce	8
2.1.1 Regional B2C E-commerce	11
2.2 B2C e-Marketplace	14
2.3 Small and Medium Enterprises	17
2.4 Small and Medium Enterprises in Malaysia	20
2.4.1 Small and Medium Enterprises at UUM	22
2.5 Summary	24

CHAPTER THREE:METHODOLOGY

3.1 Research Methodology.....	25
3.2 Phased of Methodology	27
3.2.1 Awareness of Problem	27

3.2.2	<i>Gathering requirement</i>	27
3.2.3	<i>e-Marketplace Observation</i>	28
3.2.4	<i>Development</i>	32
3.2.5	<i>Evaluation</i>	32
3.2.6	<i>Conclusion</i>	33
3.3	<i>Summary</i>	33

CHAPTER FOUR:ELECTRONIC MARKETPLACE PROTOTYPE

4.1	<i>Prototype Requirements</i>	34
4.1.1	<i>Functional Requirements</i>	34
4.1.2	<i>Non Functional Requirements</i>	36
4.2	<i>Use Case</i>	38
4.3	<i>Activity Diagram</i>	40
4.4	<i>Sequence and Collaboration Diagram</i>	42
4.5	<i>Class Diagram</i>	54
4.6	<i>Prototype Interface</i>	55
4.6.1	<i>System Interface</i>	55
4.6.2	<i>Business Admin Interface</i>	58
4.6.3	<i>Customer Interface</i>	61
4.7	<i>Prototype Evaluation</i>	65
4.7.1	<i>General Information</i>	65
4.7.2	<i>Evaluation of User</i>	66
4.8	<i>Summary</i>	80

CHAPTER FIVE:CONCLUSIONS

5.1	<i>Discussion</i>	82
5.2	<i>Contribution</i>	83
5.3	<i>Future Work</i>	84
5.4	<i>Conclusion</i>	84

REFERENCES	86
APPENDIX A	93

LIST OF TABLES

Table 2. 1: Definitions of SMEs (Saleh & Ndubisi, 2006)	19
Table 4. 1: List of Functional Requirements.....	35
Table 4. 2 : List of Non-Functional Requirements	36
Table 4. 3: Distribution of Respondents histogram	66
Table 4. 4: Do you buy goods over the Internet.....	66
Table 4. 5: Illustrate Statistics for All Elements	67
Table 4. 6 : Attributive statistics for dimensions	68
Table 4. 7: Q1 Using EM_UUM helps me to be more effective	68
Table 4. 8: Q2 Using EM_UUM helps me to be more productive.	69
Table 4. 9: Q3 Using EM_UUM saves my time when I use it	70
Table 4. 10: Q4 Using EM_UUM would enhance my effectiveness.....	71
Table 4. 11: Q5 Using EM_UUM would make it easier to do my tasks	72
Table 4. 12: Q6 EM_UUM was everything I would expect it to do.....	73
Table 4. 13: Q7 EM_UUM is simple to use.....	74
Table 4. 14: Q8 EM_UUM is very friendly to use	75
Table 4. 15: Q9 It requires the fewest steps possible to accomplish what I want to do with it	76
Table 4. 16: Q10 I can use it without written instructions	77
Table 4. 17: Q11 I don't notice any inconsistencies as I use EM_UUM	78
Table 4. 18: Q12 I can use EM_UUM successfully every time.	79

LIST OF FIGURES

Figure 2. 1: Competitive powers model.....	12
Figure 2.2 : Basic Structure of Regional B2C E-commerce	14
Figure 2. 3: Organization infrastructure for e-marketplace	16
Figure 2. 4: University Utara Malaysia.....	22
Figure 2. 5: University Utara Malaysia Mall	23
Figure 2. 6: Koperasi UUM Berhad Company	24
Figure 3.1 : Research Design Methodology (Vaishnavi & Kuechler, 2004)	26
Figure 3. 2: lelong homepage.....	29
Figure 3. 3: eBay Malaysia homepage.....	31
Figure 4. 1: Use Case Diagram of EM_UUM	39
Figure 4. 2: Description the activity diagram for admin.....	40
Figure 4. 3: Description the activity diagram for customer	41
Figure 4. 4: Login Sequence Diagram	42
Figure 4. 5: Login Collaboration Diagram.....	43
Figure 4. 6: view product Sequence Diagram.....	44
Figure 4. 7: View product Collaboration Diagram	44
Figure 4. 8: Search product Voting Sequence Diagram.....	45
Figure 4. 9 : Search product Collaboration Diagram	46
Figure 4. 10: Sequence Diagram for Use Case Make Registration.....	47
Figure 4. 11 : Collaboration Diagram for Use case make registration.....	48
Figure 4. 12: Sequence Diagram for manage product Use Case.....	49
Figure 4.13 :Collaboration Diagram for manage product Use Case.....	50
Figure 4.14 : Sequence Diagram for make order Use Case	51

Figure 4. 15: Collaboration Diagram for make order Use Case	52
Figure 4. 16: Sequence Diagram for Logout Use Case.....	53
Figure 4. 17: Collaboration Diagram for Logout Use Case	53
Figure 4. 18: Class diagram for EM_UUM	54
Figure 4.19 : Interface of homepage prototype	55
Figure 4. 20: View Product interface	56
Figure 4. 21: Search product interface	57
Figure 4.22 : Register interface for business admin.....	58
Figure 4. 23: login interface for business admin.....	59
Figure 4.24 : Manage product interface	60
Figure 4. 25: Register interface for customer.....	61
Figure 4.26 : Login interface for customer	62
Figure 4. 27: Make order interface.....	63
Figure 4. 28: Make order interface.....	64
Figure 4. 29: Statistics for question one.....	69
Figure 4. 30: Statistics for question two.....	70
Figure 4. 31: Statistics for question three.....	71
Figure 4. 32: Statistics for question four.....	72
Figure 4. 33: Statistics for question five	73
Figure 4. 34: Statistics for question six.....	74
Figure 4. 35: Statistics for question seven	75
Figure 4. 36 : Statistics for question eight.....	76
Figure 4. 37: Statistics for question nine.....	77
Figure 4. 38: Statistics for question ten.....	78
Figure 4. 39: Statistics for question eleven	79

Figure 4. 40: Statistics for question twelve	80
--	----

CHAPTER ONE

INTRODUCTION

1.1 Background

The Information and Communication Technologies (ICTs), particularly use the internet to conduct online business is quickly changing the conventional way of doing business among brick and mortar companies. With the strong waves of globalization and liberalization across the world, ICT is believed to be the most cost-efficient tool to help companies gain bigger markets and the ability to compete with larger organizations in attracting customers to their products, services and information (Tan *et al.*, 2009).

E-commerce evolved in various means of relationship within the business circle. It can be in the form of Business to Customer (B2C), Business to Business (B2B), Business in Business (BIB) and lastly Customer-to-Customer (C2C). Generally, B2B, which is between organizations, formed the bulk of the e-commerce activities. Although e-commerce implies information between businesses, the technology is equally applicable between business and consumers and indeed between consumers themselves (Stevenson & Hojati, 2002). As such, the significant role of the internet as the main tool in ecommerce is becoming

The contents of
the thesis is for
internal user
only

REFERENCES

- Alam, S. S. (2009). Adoption of internet in Malaysian SMEs. *Journal of Small Business and Enterprise Development*, 16(2), 240-255.
- Arendt, L. (2008). Barriers to ICT adoption in SMEs: how to bridge the digital divide? *Journal of Systems and Information Technology*, 10(2), 93-108.
- Bangor, A., Kortum, P. T., & Miller, J. T. (2008). An empirical evaluation of the system usability scale. *International Journal of Human-Computer Interaction*, 24(6), 574-594.
- Büyüközkan, G. (2004). Multi-criteria decision making for e-marketplace selection. *Internet Research*, 14(2), 139-154.
- Chaffey, D., Ellis-Chadwick, F., Mayer, R., & Johnston, K. (2009). *Internet marketing: strategy, implementation and practice*: Prentice Hall.
- Chang, H. H., & Wong, K. H. (2010). Adoption of e-procurement and participation of e-marketplace on firm performance: Trust as a moderator. *Information & management*, 47(5), 262-270.
- Chong, A. Y. L., Ooi, K. B., Lin, B., & Tang, S. Y. (2009). Influence of interorganizational relationships on SMEs'e-business adoption. *Internet Research*, 19(3), 313-331.
- Chong, W. K., & Shafaghi, M. (2009). Performances of B2B e-Marketplace for SMEs: The research methods and survey results. *Communications*, 9.
- Chong, W. K., Shafaghi, M., Woollaston, C., & Lui, V. (2010). B2B e-marketplace: an e-marketing framework for B2B commerce. *Marketing Intelligence & Planning*, 28(3), 310-329.

- Daniel, E., Wilson, H., & Myers, A. (2002). Adoption of e-commerce by SMEs in the UK. *International Small Business Journal*, 20(3), 253-270.
- Dave, C. (2008). *E-Business and E-Commerce Management*: Pearson Education India.
- Drew, S. (2003). Strategic uses of e-commerce by SMEs in the east of England. *European Management Journal*, 21(1), 79-88.
- Dubelaar, C., Sohal, A., & Savic, V. (2005). Benefits, impediments and critical success factors in B2C E-business adoption. *Technovation*, 25(11), 1251-1262.
- Eid, R., Trueman, M., & Ahmed, A. (2006). B2B international internet marketing: A benchmarking exercise. *Benchmarking: An International Journal*, 13(1/2), 200-213.
- Fathian, M., Akhavan, P., & Hoorali, M. (2008). E-readiness assessment of non-profit ICT SMEs in a developing country: The case of Iran. *Technovation*, 28(9), 578-590.
- Harridge-March, S. (2004). Electronic marketing, the new kid on the block. *Marketing Intelligence & Planning*, 22(3), 297-309.
- Hooi, L. W. (2006). Implementing e-HRM: The readiness of small and medium sized manufacturing companies in Malaysia. *Asia Pacific Business Review*, 12(4), 465-485.
- Humphrey, J., Mansell, R., Paré, D., & Schmitz, H. (2003). Reality of e-commerce with developing countries.
- Ishak, I. S., & Alias, R. A. (2005). Designing a strategic information systems planning methodology for Malaysian institutes of higher learning. *International Association for Computer Information Systems*, 5(1).

- Kandampully, J. (2003). B2B relationships and networks in the Internet age. *Management Decision*, 41(5), 443-451.
- Kartiwi, M. (2006). Case studies of e-commerce adoption in Indonesian SMEs: The evaluation of strategic use. *Australasian Journal of Information Systems*, 14(1).
- Koch, H., & Schultze, U. (2011). Stuck in the conflicted middle: a roletheoretic perspective on B2B e-marketplaces. *MIS quarterly*, 35(1), 123-146.
- Kotey, B., & Folker, C. (2007). Employee training in SMEs: Effect of size and firm type—Family and nonfamily. *Journal of Small Business Management*, 45(2), 214-238.
- Kuechler, B., & Vaishnavi, V. (2008). On theory development in design science research: anatomy of a research project. *European Journal of Information Systems*, 17(5), 489-504.
- Lau, R. Y. K., Li, Y., Song, D., & Kwok, R. C. W. (2008). Knowledge discovery for adaptive negotiation agents in e-marketplaces. *Decision Support Systems*, 45(2), 310-323.
- Laudon, K. C. and Laudon, J. P. (2000), *Management Information Systems: Organization and Technology in the Networked Enterprise*, 6th ed., Upper Saddle River, New Jersey, Pearson Education, Inc.
- Loukis, E., Spinellis, D., & Katsigiannis, A. (2011). Barriers to the Adoption of B2B e-Marketplaces by Large Enterprises: Lessons Learned From the Hellenic Aerospace Industry. *Information Systems Management*, 28(2), 130-146.
- Lukács, E. (2005). The economic role of SMEs in world economy, especially in Europe. *European Integration Studies*, 4(1), 3-12.

- Mansor, N., & Shaikh Ali, S. H. (2010). A B2C Business Agenda: Analyzing Customers' Perceptions towards Bumiputera Retailers. *Asian Social Science*, 6(7), P132.
- Murtaza, M. B., Gupta, V., & Carroll, R. C. (2004). E-marketplaces and the future of supply chain management: opportunities and challenges. *Business Process Management Journal*, 10(3), 325-335.
- Mutula, S. M., & van Brakel, P. (2006). E-readiness of SMEs in the ICT sector in Botswana with respect to information access. *Electronic Library, The*, 24(3), 402-417.
- Mutula, S. M., & van Brakel, P. (2006). E-readiness of SMEs in the ICT sector in Botswana with respect to information access. *Electronic Library, The*, 24(3), 402-417.
- OECD (2004), Measuring the information economy, Relative at February 27, 2012 from:
www.oecd.org/document/5/0,2340,en_2649_34449_2765701_1_1_1_1,00.html
- Ongori, H., & Migiro, S. O. (2010). Information and communication technologies adoption in SMEs: literature review. *Journal of Chinese Entrepreneurship*, 2(1), 93-104.
- O'Reilly, P., & Finnegan, P. (2007). B2B marketplaces sharing is/it infrastructures: An exploration of strategic technology alliances. *Journal of Enterprise Information Management*, 20(3), 304-318.

- Ping, L. Z. (2009). *Exploration for Regional B2C E-commerce Mode Based on Supply Chain Management*. Paper presented at the International Conference on E-Business and Information System Security, EBISS '09 Wuhan.
- Pires, G. D., & Aisbett, J. (2001). A dual Marketing and Informational Perspective to E-commerce Adoption. *The Newcastle University Research Publications*.
- Porter EM. 1990. *Competitive Advantage of Nations*. Macmillan: New York.
- Raymond, L., & Bergeron, F. (2008). Project management information systems: An empirical study of their impact on project managers and project success. *International Journal of Project Management*, 26(2), 213-220.
- Rohm, A. J., Kashyap, V., Brashear, T. G., & Milne, G. R. (2004). The use of online marketplaces for competitive advantage: a Latin American perspective. *Journal of Business & Industrial Marketing*, 19(6), 372-385.
- Spurge, V., & Roberts, C. (2005). Broadband technology: An appraisal of government policy and use by small-and medium-sized enterprises. *Journal of Property Investment & Finance*, 23(6), 516-524.
- Stevenson, W. J., & Hojati, M. (2002). *Operations management*: McGraw-Hill/Irwin New York.
- Stockdale, R., & Standing, C. (2004). Benefits and barriers of electronic marketplace participation: an SME perspective. *Journal of Enterprise Information Management*, 17(4), 301-311.
- Tan, K. S., Chong, S. C., Lin, B., & Eze, U. C. (2009). Internet-based ICT adoption: evidence from Malaysian SMEs. *Industrial Management & Data Systems*, 109(2), 224-244.

- Tan, K. S., Chong, S. C., Lin, B., & Eze, U. C. (2010). Internet-based ICT adoption among SMEs: Demographic versus benefits, barriers, and adoption intention. *Journal of Enterprise Information Management*, 23(1), 27-55.
- Teo, T. S. H. (2005). Usage and effectiveness of online marketing tools among Business-to-Consumer (B2C) firms in Singapore. *International journal of information management*, 25(3), 203-213.
- Tiako, P. F. (2003). *Web-Services modeling for E-marketplace*. Paper presented at the Symposium on Applications and the Internet Workshops.
- UUM. (2012). Varsity Mall Retrieved May 17, 2012, from <http://www.uum.org.my/index.php/en/facilities-and-services/varsity-mall>
- Vrana, V., & Zafiropoulos, C. (2006). Tourism agents' attitudes on internet adoption: an analysis from Greece. *International Journal of Contemporary Hospitality Management*, 18(7), 601-608.
- White, A., Daniel, E., Ward, J., & Wilson, H. (2007). The adoption of consortium B2B e-marketplaces: An exploratory study. *The Journal of Strategic Information Systems*, 16(1), 71-103.
- Zhang, H. Q., & Morrison, A. (2007). How can the small to medium sized travel agents stay competitive in China's travel service sector? *International Journal of Contemporary Hospitality Management*, 19(4), 275-285.
- Zhang, Y., & Bhattacharyya, S. (2010). Analysis of B2B e-marketplaces: an operations perspective. *Information Systems and E-Business Management*, 8(3), 235-256.

- Zhao, K., Xia, M., Shaw, M. J., & Subramaniam, C. (2009). The sustainability of B2B e-marketplaces: Ownership structure, market competition, and prior buyer-seller connections. *Decision Support Systems*, 47(2), 105-114.
- Zott, C., Amit, R., & Donlevy, J. (2000). Strategies for value creation in e-commerce::: best practice in Europe. *European Management Journal*, 18(5), 463-475.
- Zulkifli, M. A. A. M. (2001). Small Medium Enterprise: Taking The First Steps Into E-Commerce: Citeseer.