

E-PAYMENT MODEL FOR ISLAMIC E-COMMERCE

A thesis submitted to the College of Art and Science
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By

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ABSTRACT

The twenty-first century have witnessed several major technological renaissances and many technological achievements as well, which led to a competition among many countries to adapt this trend. Rapid development of E-payment model in the Internet is an innovative E-payment system developed and tested commercially. Actually E-payments are made in variety of ways and method of value exchange in E-commerce. However, there are some issues present in Shariah compliance E-payment model as illustrated in problem statement. Therefore, this study review current E-payment models, identify the requirements for E-payment model Shariah compliance, proposes Payment Model Shariah compliance adheres to Islamic principles. The system called O-IS-BS is an Islamic E-payment model using Internet technology. Finally a comparison between Islamic Shariah compliance E-payment model with other traditional E-payment models were presented.

ABSTRAK

Abad dua puluh yang pertama telah menyaksikan beberapa teknologi renaissances yang besar dan banyak pencapaian teknologi, yang menyebabkan persaingan diantara banyak negara untuk mengadaptasi tren ini. Perkembangan yang pesat bagi model E-pembayaran di Internet adalah satu inovatif yang dibangun dan diuji secara komersial. Sebenarnya E-pembayaran boleh dibuat dalam berbagai cara dan kaedah pertukaran nilai di E-dagang. Terdapat beberapa isu dalam model E-pembayaran berpandukan syariat Islam seperti digambarkan dalam pernyataan masalah. Oleh karena itu, kajian ini meninjau model E-pembayaran berpandukan shariah, mendapatkan analisisi keperluan untuk model E-pembayaran, mengusulkan Model Pembayaran berlandaskan Islam. Satu prototaip sistem yang dipanggil O-IS-BS telah dibangunkan berdasarkan model E-pembayaran menggunakan teknologi Internet. Akhirnya perbandingan antara E-pembayaran mengikut Islam dengan model tradisional model E-pembayaran yang turut dibincangkan.

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عائلتي الكبيرة
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أهدي هذا الجهد المتواضع تقديرا، ومحبة، وعرفانا.

مصعب

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LIST OF ABBREVIATIONS

ACH	Automated Clearing House
Aqad	Contract or agreement
Arbun	Down payment
ASP.NET	Active Server Pages .Net
Ayah	prodigy, verse in the Holy Quran
B2B	Business to Business
B2C	Business to Consumer
C2B	Consumer to Business
C2C	Consumer to Consumer
DB	Database
Dirhams	Basic unit of money in many Arab countries
E-banking	Electronic banking
E-business	Electronic business
E-cash	Electronic cash
E-cheque	Electronic cheque
E-check	Electronic check
E-commerce	Electronic commerce
E-economic	Electronic economic
E-finance	Electronic finance
E-payment	Electronic payment
E-mail	Electronic mail
E-money	Electronic money

E-pay	Electronic pay
E-purse	Electronic purse
E-wallet	Electronic wallet
Fatwa	religious advices
Fiqhi	Doctrine
Gharar	Specious
Hikmat	Wisdom
Maisir	Games of chance
Muallaq	Suspended
Muslim	adherent of Islam
O-IS-BS	Online Islamic Bookshop
p.b.u.h	peace be upon him
PC	personal computer
PSP	Payment Service Provider
P2P	Person to Person
REQ	Requirements
Riba	Usury
Shariah	Islamic law or Islamic principles
Shirkat	Partnership
SQL	Structured Query Language
UUM	Universiti Utara Malaysia
VB.NET	Visual Basic .NET
WWW	World Wide Web

CHAPTER ONE

INTRODUCTION

1.1 Overview

Besides free Internet services, E-commerce sites which require some form of payment for (part of) their services are the main segment of growth in the Internet landscape. Muslims were trying to find means of applying E-payment (electronic payment) operations within the boundaries of Islamic Shariah in everywhere and at all times, Assuming that electronic payment will be employed on a large scale in the coming future and based on state of the art payment systems, the discussion in this chapter include seven parts starting with a background in this project, followed by a problem statement over this study, project objectives, scope of study, outline of this dissertation and finally the summary for this chapter.

1.2 Background

The continuous use of the Internet augments annually and speedily, the rapid growth of Islamic E-commerce (electronic commerce) and payment methods connected with E-commerce such as E-payment (Sawama, 2003). The E-commerce

The contents of
the thesis is for
internal user
only

REFERENCE

- Abad Peiro, J. L., Asokan, N., Steiner, M., & Waidner, M. (1998). Designing a generic payment service, *IBM Systems Journal*, 37(1), pp.72-88.
- Abdulhamid, F., & Hattab, E. (2005). a model for person-to-person electronic payment system, available on: - <http://users.softlab.ece.ntua.gr/~ezz/index.html>.
- Abrazhevich, D. (2001). Classification and Characteristics of Electronic Payment systems, *Lecture Notes in Computer Science* 2115, pp. 81-90.
- Alhabshi, S. O. (1994). Development of Capital Market under Islamic Principles, Conference on Managing & Implementing Interest-Free Banking/Islamic Financial System, organised by Centre for Management Technology, supported by Bank Islam Malaysia Berhad, Concorde Hotel, Kuala Lumpur, and Retrieved September 15, 2008 from: <http://vlib.unitarklj1.edu.my/staff-publications/datuk/CAPMART.pdf>.
- Alhabshi, S. O. (2004). Development Of Capital Market Under Islamic Principles, Conference on Managing & Implementing Interest-Free, Bank Islam Malaysia Berhad, Concorde Hotel, Kuala Lumpur, pp. 1-8.
- Alhilali, M. T., & Khan, M. M. (1998). Translation of the meaning THE NOBLE QURAN in English language, King Fahed Complex for the printing of the holy Quran, Madinah, K.S.A.

Arrington, C., & Rayhan, S. (2003). Enterprise Java and UML. 2nd Edition. Wiley & Sons, ISBN 0-47-126778-3.

Ashrafi, N., & Ashrafi, H. (2008). Object Oriented Systems Analysis and Design, Prentice Hall, ISBN-10: 0131824082, ISBN-13: 9780131824089, pp. 648.

Ayub, M. (2007). Understanding Islamic Finance, the Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England: John Wiley & Sons Ltd.

Al-Khazin, Ali bin Muhammad bin Ibrahim. (1955) Tafsir al Khazin, Egypt: Mustafa al babi, volume 1. pp. 301.

Al-Meaither, M. A., & Mitchell, C. J. (2003). A Secure Electronic Murabaha Transaction, 16th Bled E-Commerce Conference e-Transformation, Bled, Slovenia.

Al-Meaither, M. (2004). Secure electronic payments for Islamic finance, Royal Holloway, Egham, Surrey TW20 0EX, England, pp. 1-200.

Bakar, M. D. (n.d.). Riba and Islamic Banking and Finance, International Islamic University Malaysia, pp. 1-23, Sep 30, 2008; Available: http://www.cert.com.my/cert/pdf/riba_drdaud.pdf.

Baihaqi. (1344 H). Kitab al-Buyu: Bab kulli qardin jarra manfaatan fahuwa riban.

Sunan al Kubra, Idaratul Maaraf, Hyderabad Deccan. pp. 28-40.

Boger, M., Sturm, T., Schildhauer, E., & Graham, E. (2004). Poseidon for UML Users Guide, Retrieved September 27, 2008 from: http://www-gris.det.uvigo.es/~avilas/poseidon_users_guide.pdf.

Brown, D. W. (2002). An Introduction to Object-Oriented Analysis, John Wiley & Sons, ISBN 0471371378, Retrieved 10, 2008 from: <http://www.wiley.com/college/brown/0471371378/ppt/ch06.ppt>.

Dennis, A., Wixom, B. H., & Tegarden, D. (2002). System Analysis & Design, An Object-Oriented Approach with UML. John Wiley & Sons, pp. 257-296.

EL-Islamy, H. (2002). E-business an Islamic perspective, Kuala Lumpur, A.S. Noordeen, ISBN: 9830651444.

Freitas, L., & Woodcock, J. (2006). Z/aves and the mondex electronic purse. In Cerone, A., Barkaoui, K., Cavalcanti, A., editor, Theoretical Aspects of Computing - ICTAC 2006, Third International Colloquium, LNCS 4281: Springer, pp. 14 – 34.

George, J. F., Batra, D., Valacich, J. S., & Hoffer, J. A. (2004). Object-oriented systems analysis and design, Pearson Prentice Hall, ISBN-10: 0131133268, ISBN-13: 9780131133266, pp. 528.

Hevner, A., March, S., Park, J., & Ram, S. (2004). Design Science in Information Systems Research, MIS Quarterly, pp.75-105.

Koponen, A. (2006). E-Commerce, Electronic Payments, Reviewed July 18, 2008 available at: <http://www.tml.tkk.fi/Opinnot/T-109.7510/2006/reports/E-commerce.pdf>.

Kotby, H. (1996). Financial Engineering for Islamic Banks: The Option Approach, J.KAU: Islamic Econ., Vol. 8, pp. 63-71. Reviewed by: SAMI AL-SUWAILEM, Institute of Middle Eastern Studies, Niigata-Ken, Japan, 1990, 217 p.

Lee, Z., Yu, H., & Kuo, P. (2001). An Analysis and Comparison of Different vpes of Electronic Payment Systems, Management of Engineering and Technology, PICMET apos;01. Portland International Conference on Volume Supplement, IEEE, pp.38-45.

Majeri, I. (2006). Overview and Security Analysis of Electronic Payment Systems, Technische Universiteit Eindhoven, pp. 1-55.

Malan, R., & Bredemeyer, D. (2001). Functional Requirements and Use Cases Retrieved September 14, 2008 from: http://www.bredemeyer.com/pdf_files/functreq.pdf.

- Malik, Ibn-e-Anas (Imam). (1985). chapter on Riba fiddayn (No. 418). Muwatta.
translated into English by M. Rahimuddin. Sh. Muhammad Ashraf Publishers,
Lahore. Malik, Tradition No. 1362, pp. 422-427.
- Meng, B. & Xiong, Q. (2003). Research on Electronic Payment Model, The 8th
International Conference on Computer Supported Cooperative Work in Design
Proceedings, pp. 596-602.
- Mihimester, P. E., & McKelvey, M. (2000). The E-Business Revolution in Energy
Services, Deregulation of the Utility Industry and Role of Energy Services
Companies (ESCOs), ACEEE, pp. 209-218.
- Mondex International Ltd, (2008). Mondex, Retrieved September 27, 2008 from:
<http://www.mondex.com/>.
- Murthy, N. N., Mehtre, B. M., Rao, K. P. R., Ramam, G. S. R., Harigopal, P. K. B., &
Babu, K.S. (2001). Technologies for E-Commerce: An Overview, National
Seminar on Ecommerce, Hyderabad, India, and retrieved September 30, 2008
from: [http://www.cmcltd.com/brochures/products_solutions/techecom-
paper.pdf](http://www.cmcltd.com/brochures/products_solutions/techecom-paper.pdf).
- Muslim, Ibn al Hajjaj al-Nisaburi. (1981). Kitab al-Musaqat: Bab lani akili al-riba wa
mukilihi: Chapter Al-Riba; (d. 261/875) Sahih Muslim, with annotation by
Yahya bin Sharaf al-Nawavi (d. 676/1277) Darul Fikr, Maktabe-al-Riyadh al
Hadithah.

Obaidullah, M. (1999). Financial Options in Islamic Contracts: Potential Tools for Risk Management, India J. KAU Islamic Econ., Vol. 11, pp. 3-26.

OICU-IOSCO. (2004). Islamic Capital Market Fact Finding Report, Report of the Islamic Capital Market Task Force of the International Organization of Securities Commissions, available on:
<http://www.sc.com.my/ENG/html/icm/ICM-IOSCOFact%20finding%20Report.pdf>.

PayPal. (2006). Technical Overview of PayPal as an Additional Payment Option, Retrieved September 20, 2008 from:
https://www.paypal.com/en_US/pdf/PP_Option_TechOverview.pdf.

PayPal Corp., Reviewed 7/14/2008 available at: <http://www.paypal.com/>.

Prinn, D. (n.d.). M-Commerce = E-Commerce, Reviewed 7/21/2008 available at:
<http://www.dpwdc.co.uk/mcreport.pdf>.

Purao, S. (2002). Design Research in the Technology of Information Systems: Truth or Dare, GSU Department of CIS Working Paper. Atlanta.

Rader, M., & Maghiros, I. (2001). Electronic Payment Systems Observatoryepso - Newsletter Issues 1-8, European Communities, pp. 1-152.

Ramayah, T. & Jantan, M. (2003). Intention to Purchase through the World Wide Web (WWW): The Malaysian Experience. The Third International Conference on Electronic Commerce Engineering (ICeCE2003), pp 898-902.

Rational Software Corporation. (2003). Rational unified process. On-line version.

Sawma, V. D. (2003). a dissertation of E-commerce Security, A New Methodology for Deriving Effective Countermeasures Design Models. Ottawa, Canada.

Schlager, C., Nowey, T., & Montenegro, J. A. (2006). A Reference Model for Authentication and Authorisation Infrastructures Respecting Privacy and Flexibility in b2c eCommerce, Proceedings of the First International Conference on Availability, Reliability and Security (ARES'06), pp.--.

Schuldt, H., Popovici, A., & Schek, H. (2000). Automatic Generation of Reliable E-Commerce Payment Processes, IEEE, Digital Object Identifier: 0-7695-0577-5, pp. 434 - 442.

Second Sub-group meeting of the PSTDG and PSULG. (2000). Payment by e-purse over the Internet, THE EUROPEAN COMMISSION: DG Internal market Financial services, Retail issues and payment systems.

Selvan, M. P., & Swarup, K. S. (2004). Object-oriented power system analysis, Retrieved August 28, 2008 from:
<http://journal.library.iisc.ernet.in/vol200405/paper2/abst-selvan.pdf>.

Shaobin, W., Na, S., & Lei, H. (2006). Fair E-cash Payment Model on Credit Overdraft, Proceedings of the 2006 IEEE Asia-Pacific Conference on Services Computing (APSCC'06).

Sommerville, I. (2001). Hands-On Prototyping in System Analysis and Design Software Engineering, Addison Wesley, Retrieved August 25, 2008 from: http://www.iacis.org/iis/2005_iis/PDFs/Zant.pdf.

Tamer, S. (2007). The Islamic Financial System, Journal of Islamic Studies, pp. 152-156.

The World's Global Islamic Finance News Provider. (2007). Islamic finance news, available on: <http://www.stikeman.com/en/pdf/IslamicFinanceArticle.pdf>.

Tirmidhi, Abu 'Isa Muhammad. (1988). Sahih al Sunan, with Takhreej by Nasiruddin Albani, KSA: Riyadh, volume 2.

UNCTAD Secretariat. (2001). Managing Payment and Credit Risks Online: New Challenges for Financial Service Providers, Electronic Commerce Environment and Practices, New York and Geneva: UNITED NATIONS pp. 143-186.

Vadillo, U. I. (2006). Fatwa on Banking and the Use of Interest Received on Bank Deposits, September 20, 2008; Available: <http://zakat.files.wordpress.com/2006/11/fatwaonbanking.pdf>.

Vaishnavi, & Kuechler. (2007). Design Research in information system, Retrieved August 2, 2008 from: <http://www.isworld.org/Researchdesign/drislSworld.htm>.

Vassiliou, C. (2004). E-payment system and marketing: A literature review, National and Kapodistrian University of Athens, Greece, pp. 1- 62.

Weber, R. (1999). Chablis - market analysis of digital payment systems, Retrieved September 27, 2008 from: <http://purl.pt/282/1/v3d2/projects/chablis/pdf-documents/a-marketpay.pdf>.

Wilson, R. (n.d.). The evolution of the Islamic financial system, University of Durham, Institute for Middle Eastern and Islamic Studies, Reviewed July 14, 2008 available at: <http://www.sc.com.my/ENG/html/iaffairs/ioscoislamicpdf/AAEuromoneych2.pdf>.

Xu, Q., & Zhao, H. (2000). Distributed Electronic Payment System Based on Bank Union, IEEE, digital object identifier 0-7695-0589-2, pp. 548-551.

Zainul, N., Osman, F., & Mazlan, S. H. (2004). E-Commerce from an Islamic perspective, Electronic Commerce Research and Applications 3, pp 280-293.