Paperless Online Banking (e-Cheque Imaging)

Thesis submitted in partial fulfillment of the requirements for the degree of Master of Science (Information Technology)
Universiti Utara Malaysia

By

Mahdi (N.F) B. Mustafa
Saya, yang bertandatangan, memperakukan bahawa (I, the undersigned, certify that)

MAHDI (N.F) B. MUSTAFA

calon untuk Ijazah (candidate for the degree of) MSc. (IT)

telah mengemukakan kertas projek yang bertajuk (has presented his/her project paper of the following title)

PAPERLESS ONLINE BANKING (e-CHEQUE IMAGING)

seperti yang tercatat di muka surat tajuk dan kulit kertas projek (as it appears on the title page and front cover of project paper)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan. (that the project paper acceptable in form and content, and that a satisfactory knowledge of the field is covered by the project paper).

Nama Penyelia Utama (Name of Main Supervisor): MR. MOHD SHAMRIE SAININ

Tandatangan (Signature) : 

Tarih (Date) : 28/05/2008
PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a post-graduate 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 thesis in any manner, in the whole or in part, for scholarly purposes may be granted by my supervisor or in his absence, by the Dean of Graduate School. It is understood that any copying or publication or use of this thesis 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 materials for my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part should be address to:

Dean of Faculty of Information Technology
Universiti Utara Malaysia
06010 DUM Sintok
Kedah Darul Aman
Abstract

This study aims to highlight the importance of using e-cheque imaging in e-business and e-banking. E-cheque imaging enables both the customer and the bank to have more flexible accessible valid transactions by electronically checking all transactions through an online bank web system. The researcher developed a prototype for e-cheque imaging system and adopted the research in general design methodology in order to make the transaction cheque clearing process more efficient and accurate. After testing the system, the findings revealed that the proposed system is capable to record a successful complete electronic transaction. By developing such a system, the study attempts to confirm that there are many potential benefits that can be obtained from applying E-cheque imaging.
ACKNOWLEDGMENT

I could not have completed this work without the help and the support of my supervisor, Mr. Mohd Shamrie Sainin, who offered me encouragement and support, read my drafts, and added his insights and ideas to me. I was privileged to be one of his students. He remained encouraging, supportive of my work, and unfailingly helpful to the last finishing touches of my study. I am also indebted to all my lecturers in Universiti Utara Malaysia who have directly or indirectly helped me have more insight into my work. Finally, my thanks to friends and loved ones, above all my parents and my wife, whose prayers made the more trying moments easier to bear.
Contents

PERMISSION TO USE ........................................... I
ABSTRACT ......................................................... II
AKNOLOGMENT .................................................. III
CONTENTS ........................................................ IV
LIST OF FIGURES .............................................. VIII
LIST OF TABLES .................................................. VIII

CHAPTER ONE

1. Introduction .................................................... 1

1.2 Problem Statement .......................................... 2
1.3 Objectives of the study .................................... 3
1.4 Scope of the study ......................................... 3
1.5 Significant of the study .................................. 4
1.6 Rational of the study ...................................... 4
1.7 Platform ...................................................... 5
1.8 Organization Of This Thesis ............................. 5

CHAPTER TWO : Literature Review

2.1 Introduction .................................................. 6
2.2 The current cheques processing .......................... 7
2.3 Cheque Imaging ............................................. 9
2.4 The advantages of using digital cheque imaging .... 10
2.5 Processing cheques images .............................. 13
2.6 Using cheque images as a proof of payment ........................................14
2.7 Using cheque images as an evidence in court ...................................14
2.8 Program language ...........................................................................15
   2.8.1 ASP.NET Overview .................................................................15
   2.8.2 Page and Controls Framework .................................................16
   2.8.3 ASP.NET Compiler ..................................................................16
   2.8.4 Security Infrastructure ............................................................17
   2.8.5 ASP.NET Configuration ...........................................................17
   2.8.6 ASP.NET Architecture ............................................................17
2.9 Summary .........................................................................................18

CHAPTER THREE : Research Methodology

3.1 Introduction (Research Methodology) .............................................19
   3.1.1 Phase 1: Answer of the Problem ...........................................19
   3.1.2 Phase 2: Suggestion ..................................................................20
   3.1.3 Phase 3: Development ..............................................................20
   3.1.4 Phase 4: Evaluation and Conclusion .......................................21
3.2 Summary .........................................................................................21

CHAPTER FOUR : Analysis & Design

4.1 Introduction ..................................................................................22
4.2 Analysis .........................................................................................22
   4.2.1 Requirements Determination .................................................23
   4.2.2 System's Requirements ............................................................24
4.2 Design ............................................................................................25
   4.2.1 Logical Design .......................................................................25
   4.2.2 Physical Design ......................................................................33
4.3 Summary .........................................................................................34

CHAPTER FIVE: Implementation .......................................................46
5.1 System Development ......................................................................36
5.2 Summary .........................................................................................45

CHAPTER SIX: Evaluation ..............................................................46
6.1 User testing (Questionnaire) .........................................................46
   6.1.1 Respondents ...........................................................................46
   6.1.2 Structure of questionnaire ......................................................47
6.1.3 Conducting the test ........................................ 47
6.1.4 Analysis of the demographic questions ............. 47
6.1.5 Analysis of the user testing .............................. 48

CHAPTER SEVEN : Conclusion ............................... 53
7.1 Finding ..................................................... 53
7.2 Problems and limitation .................................. 54
7.3 Contribution of study ..................................... 54
7.4 Future Work .............................................. 55
7.5 Summary .................................................. 55

References ................................................................ 56

Appendices .............................................................
Appendix A: Data Relationship Diagram & Data Dictionary
Appendix B: Questionnaire for e-cheque imaging system
Appendix C: Frequency Table And Histogram

List of Figures

2.1 ASP.NET Architecture ........................................ 18
3.1 The General methodology of Design Research .......... 19
4.1 Figure 4.1: Use Case Diagram for e-cheque imaging web system .... 26
4.2 Sequence Diagram for Login Customer ................... 27
4.3 Sequence Diagram for Customer Registration .......... 28
4.4 Sequence Diagram for Customer Update Profile and Password .. 30
4.5 Sequence Diagram for View and print cheque image transaction .. 32
5.1 Login Customer Interface .................................. 37
5.2 Services Interface ......................................... 38
5.3 e-statement Interface ..................................... 39
5.4 e-cheque Interface ........................................ 40
5.5 Image Details Interface .................................... 41
5.6 Front and Back Image of the Cheque Interface ........................................ 42
5.7 Registration Interface ........................................................................ 43
5.8 Error Registration Interface ................................................................ 44

List of Tables

4.1 Functional Requirement ...................................................................... 24
4.2 H/W,S/W Specifications ..................................................................... 34
6.1 Gender .............................................................................................. 47
6.2 Faculty .............................................................................................. 48
6.3 Descriptive Statistics for E-cheque imaging Screen ......................... 49
6.4 Descriptive Statistics: for Terminology Used in E-cheque imaging .... 49
6.5 Descriptive Statistics for E-cheque imaging System Capabilities ....... 50
6.6 Descriptive Statistics for Perceived Usefulness .................................. 50
6.7 Descriptive Statistics for Perceived Ease Use .................................... 51
6.8 Descriptive Statistics for all Dimensions .......................................... 51
CHAPTER ONE

1.1 Introduction

Owing to the tremendous advancement in computing and communications technology, there is an increased reliance on computer systems and internet online management of e-business and e-commerce activities. This resulted in introducing innovative financial services automation in various managerial areas. On the other side, customers require more and more service automation and they are looking for providers that enable them to perform some of the traditional personal services such as handling financial transaction papers online, retrieving and viewing images stored in the companies archives such as cheque image, money order images and complete customer monthly statement images.

Customers need to investigate the check transaction to confirm the exact date of issuing the check, who cached the cheque, how many times the check was transferred from person to person, and sometimes they need to prove a fraud related to one or more in the cheque transaction. Customer will find it much easier to check or search for Cheques through an interface to a DB rather than going through manual filing, to resolve potential disputes that may take place between them and companies or certain individuals.

Additionally, at the end of every month, the bank of the financial institution sends an account statement, that account statement in most countries is mandated for most deposit account, most banks can give online view of an account for maximum six months. At the same time online view of an account transaction for a month does not constitute a legal monthly account statement, this is why online view of the account cannot replace monthly account statement.
The contents of the thesis is for internal user only
References


