ONLINE HELPDESK FOR MAYBANK ACCOUNT PAYABLE SYSTEM (MAPS)

SHOBINI D/ RAMAN NAIR

UNIVERSITI TEKNOLOGI MALAYSIA

ONLINE HELPDESK FOR MAYBANK ACCOUNT PAYABLE SYSTEM (MAPS)

SHOBINI D/O RAMAN NAIR

A thesis submitted in fulfillment of the requirements for the award of the degree of Masters of Science (Information Technology – Management)

> Faculty of Computer Science & Information Systems Universiti Teknologi Malaysia

> > NOVEMBER 2005

ACKNOWLEDGEMENT

I would like to thank Prof.Wardah, my project supervisor from bottom of my heart for being the first person to recognize my interest in taking up this project. She is knowledgeable and is always willing to give a helping hand for me. She allocates time for me to meet her for my project updates and also shares idea and view in spite of her hectic schedule. I would also like to thank Dr.Rosalinda for her kind advice and support in this project.

It is also my pleasure to dedicate thanks to my encouraging parents, fiancée, friends and AITI staffs. My sincere appreciation also extends to all my colleagues and others who have provided assistance at various occasions.

ABSTRACT

The aim of this project is to develop a web-based Online Helpdesk for Maybank Account Payable System. Maybank Account Payable System (MAPS) is a system currently used in Maybank to make payments to third party vendors on product and services obtained by Maybank. The users of the system will be users from Property and ISD Department in Maybank. Currently when the system users face a problem with MAPS system, there is no tool or system used to log the problem to the IT Technical Supports. The users will log the problem in a manual method by making a phone call to the IT Technical Support. Besides that, the management is also facing difficulties because there is no proper tracking to problems raised by users. The management is also facing difficulties to gauge the performance of the IT Technical Support, because the support provided is not documented within the organization. Thus, Online Helpdesk for Maybank Account Payable System is designed specifically to address the problems mentioned above. The system will automate the manual process of logging a problem to the IT Technical Support via the web-based system. With the system, there will be a proper control over the problem logged because there is an escalation process. The system will be able to determine whether a problem is resolved within the time frame allocated or better known as SLA (Service Level Agreement) timing. When the IT Technical Support closes a case, a PDF format report will be generated for the view of the IT Manager. The report will log the time the case is opened and closed. The report will also indicate whether the case has been closed within the agreed time. With this report, the IT Manager will be able to gauge the performance of the IT Technical Support and will be able to make fair decision during the KPI review.

ABSTRAK

Tujuan projek ini adalah untuk membangunkan "Online Helpdesk for Maybank Account Payable System (MAPS)". "Maybank Account Payable System" kini digunakan di Maybank untuk membuat bayaran kepada vendor di atas perkhidmatan dan servis yang diberikan kepada Maybank. Pengguna sistem terdiri daripada dua unit iaitu Unit Informasi & Sistem Maklumat dan Unit Hartabenda. Apabila penguna sistem menghadapi masalah dengan MAPS, mereka tidak mempunyai sistem yang boleh digunakan untuk membuat aduan mengenai masalah yang dihadapi kepada pegawai teknikal. Pengguna sistem hanya boleh membuat aduan dengan menghantar email atau membuat panggilan telefon kepada pegawai teknikal. Selain itu, pihak pengurusan juga menghadapi masalah kerana aduan yang dibuat oleh pengguna sistem tidak dapat direkod. Oleh yang demikian, "Online Helpdesk for Maybank Account Payable System (MAPS)" dibangunkan dengan tujuan untuk mengatasi masalah yang dihadapi oleh pengguna sistem and juga pihak pengurusan. Sistem ini dibangunkan dalam persekitaran yang fleksibel dan interaktif berasaskan permukaan "web". Sistem ini juga akan menghasilkan laporan untuk pihak pengurusan apabila setiap aduan yang dibuat oleh pengguna telah disiapkan oleh pegawai IT. Setelah lengkap implementasi sistem ini, tahap efisyen keseluruhan proses membuat aduan akan dapat dipertingkatkan.

TABLE OF CONTENTS

Chapter	Title	Page
	Project Title	i
	Declaration	ii
	Acknowledgements	iii
	Abstract	iv
	Abstrak	v
	Table of Contents	vi
	List of Tables	xii
	List of Figures	xiv
	List of Acronyms	xvi
	List of Appendices	xvii
Chapter	Title	Page
1	Project Background	
	1.1 Introduction	1
	1.2 Background of Problem	2
	1.3 Problem Statement	5
	1.4 Project Objective	6
	1.5 Project Scope	6
	1.6 Project Importance	7
	1.7 IS / IT Solution	7
	1.8 Chapter Summary	8

Chapter	Title	Page
2	Literature Review	
	2.1 Introduction	9
	2.2 Definition of Online Helpdesk	9
	2.3 Background of Online Helpdesk	10
	2.4 Incidents & Problems	11
	2.4.1 Incidents	11
	2.4.2 Problems	11
	2.5 Benefit of Online Helpdesk	12
	2.5.1 For Business in Particular	12
	2.5.2 For Organization in Particular	12
	2.6 Characteristic of Online Helpdesk	13
	2.7 Importance of Online Helpdesk in Banking Industry	14
	2.8 Importance of Online Helpdesk for Maybank	16
	2.8.1 KPI (Key Performance Indicator)	16
	2.8.1.1 Current KPI Structure in Maybank	17
	2.8.2 Helpdesk Statistic	18
	2.9 Chapter Summary	18
3	Research Methodology	
	3.1 Introduction	19
	3.2 Waterfall Model	19
	3.3 Phase in Waterfall Model	21
	3.3.1 Requirement Analysis and Definition	21
	3.3.1.1 Requirement Engineering	21

	3.3.1.2 Requirement Collection & Analysis	21
	3.3.2 System and Software Design	22
	3.3.3 Implementation and Unit Testing	22
	3.3.4 Integration and System Testing	22
	3.3.5 Operations and Maintenance	23
	3.4 Chapter Summary	23
4	System Design	
	4.1 Introduction	25
	4.2 Organizational Analysis	26
	4.2.1 Organizational Background	26
	4.2.2 IT Organization Structure	27
	4.3 Current IS / IT Application	28
	4.3.1 Problem Statement in the Organizational	28
	Context	
	4.4 As – Is Process	29
	4.4.1 Phone Call	29
	4.4.2 Email	29
	4.5 Use Case Description	31
	4.6 Online Helpdesk Modules	35
	4.6.1 Frequently Asked Questions (FAQ's)	35
	4.6.2 Glossary	35
	4.6.3 Tutorial	36
	4.6.3.1 Getting Started with MAPS	36
	4.6.3.2 Process for Payment	36
	4.6.4 Email	36
	4.6.5 Statistic	37
	4.6.5.1 Statistic of Problems	37
	4.6.6 Incidents / Cases	39
	4.6.7 Management Report	39

4.6.7.1 Problem Status Report	39
4.6.7.2 IT Support Status Report	41
4.6.7.3 AMD & ISD Statistic Report	42
4.7 System Design	44
4.8 System Interface Chart	46
4.8.1 User Interface Chart	46
4.8.2 Admin Interface Chart	46
4.8.3 IT Manager Interface Chart	47
4.8.4 IT Technical Support Interface Chart	47
4.9 Design Techniques – UML Diagram	51
4.9.1 To – Be Process	52
4.9.1.1 IT Technical Support	55
4.9.1.2 Manager	56
4.9.1.3 User	57
4.9.1.4 Administrator	58
4.10 Use Case Description	59
4.11 Sequence Diagram	72
4.11.1 IT Technical Support	72
4.11.2 Manager	73
4.11.3 User	74
4.11.4 Administrator	75
4.12 Activity Diagram	76
4.12.1 User Activity Diagram	76
4.12.2 Manager Activity Diagram	77
4.12.3 IT Technical Support Activity Diagram	78
4.12.4 Administrator Activity Diagram	79
4.13 Activity Diagram – Sub Module	80
4.13.1 Lookup FAQ, Glossary, Tutorial	80
4.13.2 Open Case	81
4.13.3 View Case	82
4.13.4 View Statistic	83

4.13.5 View Management Report	84
4.13.6 Update Case	85
4.13.7 Close Case	86
4.13.8 Delete Case	87
4.13.9 Add User	88
4.13.10 Maintain User	89
4.13.11 Delete User	91
4.14 Problem Categorization	91
4.15 Physical Design	92
4.15.1 Database Design	92
4.16 Software Requirement	94
4.17 Hardware Requirement	95
4.18 Test Plan	95
4.19 Testing Method	96
4.19.1 Unit Testing	96
4.19.2 Integration Testing	97
4.19.3 System Testing	97
4.19.4 User and Acceptance Testing	97
4.20 Chapter Summary	97

5

Design Implementation & Testing

5.1	Introduction	98
5.2	Coding Structure	99
5.3	Test Cases & Test Result	100
	5.3.1 Login	100
	5.3.2 Open Case	100
	5.3.3 View Case	101
	5.3.4.Update Case	101
	5.3.5 Delete Case	101
	5.3.6 Add User	101
	5.3.7 Maintain User	101

5.3.8 Delete User	102
5.3.9 Display Statistic	102
5.3.10 Display Management Report	102
5.3.11 View FAQ, Glossary, Tutorial	102
5.4 User Manual for Administrator	103
5.4.1 Hardware Configuration & Setup	103
5.4.2 Installation Procedure	103
5.4.2.1 Install Apache	103
5.4.2.2 Install PHP	104
5.4.2.3 Install Apache to Run PHP	104
5.4.2.4 Install MySQL	104
5.5 Chapter Summary	105

Organizational Strategy	
6.1 Introduction	106
6.2 Roll-out Strategy	106
6.2.1 Pilot Strategy	106
6.3 Change Management	107
6.4 Business Continuity Plan (BCP)	108
6.5 Expected Organizational Benefit	108
6.6 Chapter Summary	109

6

xi

7	Discussion & Conclusion	
	7.1 Achievements	110
	7.2 Constraint and Challenges	111
	7.3 Aspiration	111
	7.4 Chapter Summary	112

References	113
------------	-----

LIST OF TABLES

TABLE NO	TITLE	PAGE
4.14	Problem Categorization	91
4.15.1	Caselog Table Details	92
4.15.2	UserDetail Table Details	93

LIST OF FIGURES

FIGURE NO	TITLE	PAGE
3.3	Waterfall Model	24
4.2.2	IT Organization Structure	27
4.4	Current Process to Log a Problem	30
4.6.5.1	Statistic of Problem	38
4.6.7.1	Problem Status Report	40
4.6.7.2	IT Status Support Report	41
4.6.7.3	AMD & ISD Status Report	43
4.7	Main Page for MAPS Online Helpdesk	44
4.9.1	System Use Case Diagram	53
4.9.1.1	IT Technical Support Use Case Diagram	55
4.9.1.2	Manager Use Case Diagram	56
4.9.1.3	User Use Case Diagram	57
4.9.1.4	Administrator Use Case Diagram	58
4.11.1	Sequence Diagram - IT Technical Support	72
4.11.2	Sequence Diagram – Manager	73
4.11.3	Sequence Diagram – User	74
4.11.4	Sequence Diagram – Administrator	75
4.12.1	Activity Diagram – User	76
4.12.2	Activity Diagram – Manager	77
4.12.3	Activity Diagram – IT Technical Support	78
4.12.4	Activity Diagram – Administrator	79
4.13.1	Lookup FAQ, Glossary, Tutorial	80
4.13.2	Open Case	81
4.13.3	View Case	82

4.13.4	View Statistic	83
4.13.5	View Management Report	84
4.13.6	Update Case	85
4.13.7	Close Case	86
4.13.8	Delete Case	87
4.13.9	Add User	88
4.13.10	Maintain User	89
4.13.11	Delete User	90

LIST OF ACRONYMS

MAPS	- Maybank Account Payable System
FAQ	- Frequently Asked Question
UML	- Unified Modeling Language
MDTB	- Maybank Desktop Banking
SLA	- Service Level Agreement
KPI	- Key Performance Indicator
PO	- Purchase Order
DO	- Delivery Order
ISD	- Information System Department
AMD	- Property Department

LIST OF APPENDICES

APPENDIXTITLEAExample of System SnapshotsBProject Timeline – Gantt Chart

CHAPTER 1

1.0 PROJECT BACKGROUND

1.1 Introduction

The aim of this document is to develop an Online Helpdesk System for Maybank Account Payable System (MAPS) for Information Technology Department of Maybank.

This chapter will give a basic overview and glimpse of the system. The background of this system will be described in this chapter. By reviewing this chapter, one will understand the functionality of the system. Chapter one will be divided into few categories as follows:

- ✓ Background of problem
- ✓ Problem Statement
- ✓ Project Objectives
- ✓ Project Scope
- ✓ Project Limitation
- ✓ Project Importance/ Significance
- ✓ Description of Solutions
 - IS / IT Solution
 - i. Hardware Solution
 - ii. Software Solution

1.2 Background of Problem

The system is mainly developed for Maybank Account Payable System or better known as MAPS System. MAPS System is a payable system used by Maybank to pay vendors for their goods purchased and services used. MAPS system is a vendor-based system introduced in Maybank for the past two years.

The main users of this system is divided into two categories from two different departments, which is the Property Department and ISD (Information System Department) or better known as IT Management Department. The Property Department user does all the processing for goods or services incurred by the bank while ISD Department does all the processing incurred by Information Services Division. Once all the processing has been done via the system, the property manager within the specified time frame will make the payment to the vendors or the banks.

The processing that takes place includes processing of invoices, purchase orders and delivery order in the system. All of the information will be fed into the system to enable the processing. Besides that, invoices, purchase order and delivery order will also be uploaded to the MAPS server by third party vendors. The invoices, purchase order and delivery order will be automatically picked up by the system by time-triggered jobs to continue the processing within the system. Once all of the processing is complete, the Property Department manager will perform the MDTB process. The MDTB process is a process performed to pay the entire amount due to the vendors within a specific time frame allocated via the system.

The main problematic situation identified in this context is, the unclear processes of task involved. Many of the clerks are not clear of each processing which takes place within the system. There isn't any existing documentation, which documents the usability and the processes

of the system. Often the system users require assistance from the IT technical support to complete the daily task and chores.

Besides that, the automated uploading of invoices, purchase order and delivery order by the vendor very often fails due to network failure. When the automated job is not successful, the processing for the day cannot be continued and this will impact the MDTB process.

In a daily situation when the documents are not uploaded automatically, users will have to inform IT technical support about the problem faced. Then the IT technical support will have to request for the data (invoice, purchase order, delivery order) from the third party vendor. Once the vendor has emailed the required files, then the IT technical support will have to upload the files manually to the server and complete certain encryption processes before the users can use those files.

Users always face problems when they require assistance from IT technical support. Most of the time the technical support cannot be contacted and there is no tool to log the problem automatically for the technical support to attend to the problem later. The users have to keep on trying to contact the technical support until they manage to log the problem.

Upon receiving the complaint, the IT technical support will have to raise this matter to the third party vendor for data. All of these processes take a few hours or sometimes even a day to complete. This will affect the performance of the users because until the data is available no processing can be done.

Besides that, when this processes is not completed as scheduled, the MDTB (Maybank Desktop Banking) process which involves payment made to vendors will also be delayed. This delay is a significant delay to the management because when the payment is delayed, vendors will not proceed with the services or goods to be delivered until the payment has been made.

The MDTB process itself often incurs a lot of problem whereby those processes cannot be continued without IT technical supports guide and assistance. This process is a crucial process in Maybank and can only be done by the Property Manager. This process is really crucial as it involves millions of ringgits to be paid to the vendors on a weekly basic. When the manager hits problem with the MDTB process, technical support has to reinterface the files manually to continue with the processing. Besides that the manager also often faces problem such as network failure during the MDTB process as the process takes a long duration to interface the files to make the payment. This is the biggest challenge for the management because the delay to get in touch with the technical support and there is no system or tool to log the problem even though the technical support cannot be reachable. With a tool to log the problem, the technical support cannot be reachable. With a tool to log the problem, the technical support cannot be reachable.

Inline with the problems faced by the users as mentioned, the technical support themselves are facing problem. One of the most significant problem faced is that there is no proper tracking of problems attended to by the technical staff. Most of the technical staff finds it difficult to justify the support provided during review of KPI (Key Performance Indicator). The reason is because there is no system to track the problems logged by the users and to track the support provided by the technical support. During the review of KPI, it is difficult to gauge the performance of the technical support since there is lack of tracking done.

1.3 Problem Statement

The delays in solving the technical problems are due to improper reporting of the problems. The time taken by the IT technical support is significantly long because of few reasons as follows:

- Currently there no such system, which can be used by the users to log a problem.
- In most cases, when users face a problem and wishes to log a problem, the IT Technical support is not available and reachable. So the problem will be unknown and unsolved until the user calls the technical support again to log the problem.
- This gap of time taken for the technical support to receive the problem log and to solve the problem is significantly long.
- Due to this delay, the time taken by the users to complete their daily task is longer than allocated hence reducing the productivity of the users.

Besides all of the problems mentioned above, users are also facing problem currently to obtain information about the MAPS system. Any information in relations to the system has to be obtained from the technical support itself. There is no any procedures or guidelines provided to use the system and many of the functionalities of the system are unused.

With the statistics generated by the system, the IT Technical staff and the manager will be able to further analyze the problem faced by the system users. The statistics generated will be able to highlight the area within the system, which needs fine tuning to further improve the system.

1.4 Project Objective

The objectives of this project are as follows:

- To develop a web based Online Helpdesk for MAPS (Maybank Account Payable System). This system will be able to help users to automate the process of problem logging to IT technical support via the web-based system.
- To enable users to obtain information regarding the MAPS system via the Online Helpdesk
- To enable management to measure problems resolved by IT technical support to give them a fair rating during KPI review.
- To reduce turnaround time to complete problems logged by users.

1.5 Project Scope

The scopes of the online helpdesk are such as:

- The online helpdesk is developed mainly to support MAPS (Maybank Account Payable System) will be used by two departments namely Property Department and the ISD Department users.
- The system will be able to provide information about the processes within the MAPS system
- To log technical problem such as request for installation, and unlock of password.
- To monitor and track all problems reported to the IT Technical Support.
- To produce statistical and summarize information for the management. The data provided will be used during KPI review.

1.6 Project Importance

The system will provide some significant importance to the management as well as the users of the system. With the online helpdesk:

- Time taken to complete users daily task will be shorten since the system will be able to alert the technical staff in case of problem. Thus, it will be able to reduce delays.
- Information and knowledge sharing among users will become more effective since users will be able to gather information from the online helpdesk.
- Management will be able to keep track of support provided by the IT Technical support.
- Avoid unnecessary escalation and inappropriate resource allocation.

Online Helpdesk is expected to automate the process of problem logging and also to provide statistical information for problem analysis. Hopefully with the Online Helpdesk System, all technical problems are monitored, and escalated to the proper channel. In addition, with the system the flow or process of handling problems will become more systematic and documented.

1.7 IS/IT Solution

All the problems mentioned in the problem statement and backgrounds of statement section are the problems faced by the management and users currently in Maybank. In order to overcome this problem in the future and have less impact on the productivity, an IS/IT solution has to be introduced. The IS/IT solution identified is to develop the Online Helpdesk for MAPS System. Without the IS/IT solution, the problems faced cannot be solved because it is interconnected with IT and the resolvers of the problem are the technical support itself. The IS/IT solution will be categorized under the software and hardware requirements section.

1.8 Chapter Summary

As a conclusion, this chapter describes the background of the project and the background of problems faced by system users and IT Technical Support in Maybank. This chapter also illustrates the importance of having an online helpdesk system to address the problems and constraint faced as mentioned above. By developing the online helpdesk system, it is hoped that to a certain extend the problems will be eliminated and the daily task can be carried out smoothly.

• In future, top 10 problems encountered within the system should be listed with the possible solutions to enable users solve the problem if it does not require the assistance of the IT Technical Support.

7.4 Chapter Summary

This chapter discusses the achievement in the system implementation process, constraint and challenges faced. It also gives a brief overview of the future development, which should done to further refine the system.

REFERENCES

- Alan Dennis, Barbara Haley Wixom.2000. System Analysis and Design: Hermitage Publishing Service.
- Donna Knapp.1999. A Guide to Customer Service Skills for Helpdesk Professional: Course Technology Publishing.
- 3. Ian Sommerville.1995. Software Engineering. Addison Wesley Publishing
- 4. Leland.1995.Customer Service for Dummies: IDG Books Worldwide
- http://www.auditnet.org/docs/Help%20Desk%20and%20Problem%20 Management.pdf