REQUIREMENTS ANALYSIS FOR SBS SYSTEM AND STUDY REVIEW PROCESS ITERATION DURING REQUIREMENTS PHASE

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ABSTRACT

This paper represented the experience gained and discussed the works done under the title "*Requirements Analysis For SBS System And Study Review Process Iteration During Requirements Phase*" by the author during her Industrial Attachment 2 Period, from 13th October 2008 to 13th March 2009, at HeiTech Padu, Malaysia. The purpose of this paper is to analyze requirements for Shared Banking Services system and study reviews process that can be applied in requirement phase in order to get quality requirements document with reduced errors. The SBS system is aimed to provide the banking services, of one selected bank, through post office in order to give the customer other alternative way to perform his or her banking services. There were some studies is carried out to understand how the reviews process is important in requirement phase and to show how to make the reviews process more effective by iterate it during the development of SRS document. The required methodology to achieved objectives of this paper began from initiation and planning, an analysis of Shared Banking Services system, study about best practices in requirements engineering process and study requirements review process. Finally, documentation of the output was performed. The development team of SBS system used ADVISE methodology which is based in HeiTech Padu process development. The deliverables of analyzing SBS system are Software Requirement Specification (SRS), Requirement Traceability Matrix and User Manual documents. A workflow is introduced to show how the reviews process can be iterated during development of SRS document.

ABSTRAK

Kajian ini membincangkan pengalaman dan hasil kerja yang telah dijalankan oleh penulis di bawah tajuk "*Analisis Keperluan Untuk Sistem SBS Dan Kajian Pengulasan Proses Pengulangan Semula Semasa Fasa Keperluan"* semasa Latihan Industri 2 beliau yang bermula pada 13 Oktober 2008 hingga 13 Mac 2009 di HeiTech Padu, Malaysia. Kajian ini bertujuan untuk menganalisis keperluan-keperluan untuk sistem Perkhidmatan Perkongsian Perbankan dan untuk mengkaji proses pengulasan yang boleh diaplikasikan ke dalam fasa keperluan untuk memperoleh dokumen keperluan yang berkualiti beserta jumlah kesalahan minima. Sistem SBS mensasarkan untuk membekalkan perkhidmatan perbankan, daripada satu bank terpilih, melalui pejabat pos dalam memberikan pelanggan alternatif lain untuk menyempurnakan perkhidmatan perbankannya. Beberapa kajian telah dijalankan untuk memahami kepentingan proses pengulasan dalam fasa keperluan dan untuk mempamerkan bagaimana untuk menjadikan proses ini lebih efektif dengan mengulangkan ia semula semasa pembangunan dokumen SRS. Metodologi yang diperlukan untuk mencapai objektif-objektif kajian ini bergerak dari permulaan dan perancangan, analisis sistem Perkhidmatan Perkongsian Perbankan, kajian tentang praktis-praktis terbaik dalam proses kejuruteraan keperluan dan juga kajian keperluan proses pengulasan. Akhirnya, proses dokumentasi hasil telah dijalankan. Kumpulan pembangunan sistem SBS telah menggunakan metodologi ADVISE yang berdasarkan proses pembangunan HeiTech Padu. Hasul daripada analisis sistem SBS adalah Perisian Spesifikasi Keperluan (SRS), Matriks Keperluan Kebolehan Menjejaki dan dokumen Manual Penggunaan.

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CHAPTER 1

INTRODUCTION

This chapter explains about the company background, department structure and the project background.

1.1 Company Background

HeiTech Padu is one of the largest information technology companies in Malaysia. It provides comprehensive mission-critical solutions for public and private sectors. HeiTech Padu was established on 1981 and it has more than 750 ICT professionals. HeiTech Padu is an expert in transforming businesses' manual processes to automated systems by providing complete integrated ICT (Information and Communications Technology) services and finally produces the effective information systems.

The main sectors that HeiTech adopts to provide ICT products and services are: ICT infrastructure services, public sector, education, health, financial and defense and public security.

The core businesses of HeiTech Padu are: manage data centre services, manage network & communications services, systems integration services, solution & consultancy offerings, and system integration and application development. In addition, its vision is to be the technology-based transformational company in Malaysia and beyond. In order to achieve this vision, HeiTech Padu has a mission which is providing total solution, creating innovative product as well as consulting for a better world.

The industrial training was done at the Applied Research and Development (AR&D). This department was established in October 2001. The AR&D Department's responsibilities and objectives consist of researching, developing, and improving HeiTech Padu proprietary software products. Furthermore, AR&D Department aims to develop application component which is application independent in itself. Moreover, this department does researching the new, advanced, and emerging technology that can be useful to HeiTech Padu software development. AR&D department undertakes a variety of research and development activities which are: E-connect, RFID Middleware, Device Service Server and Hybrid Client. The AR&D Structure which includes the author is shown in figure 1.1 as below.

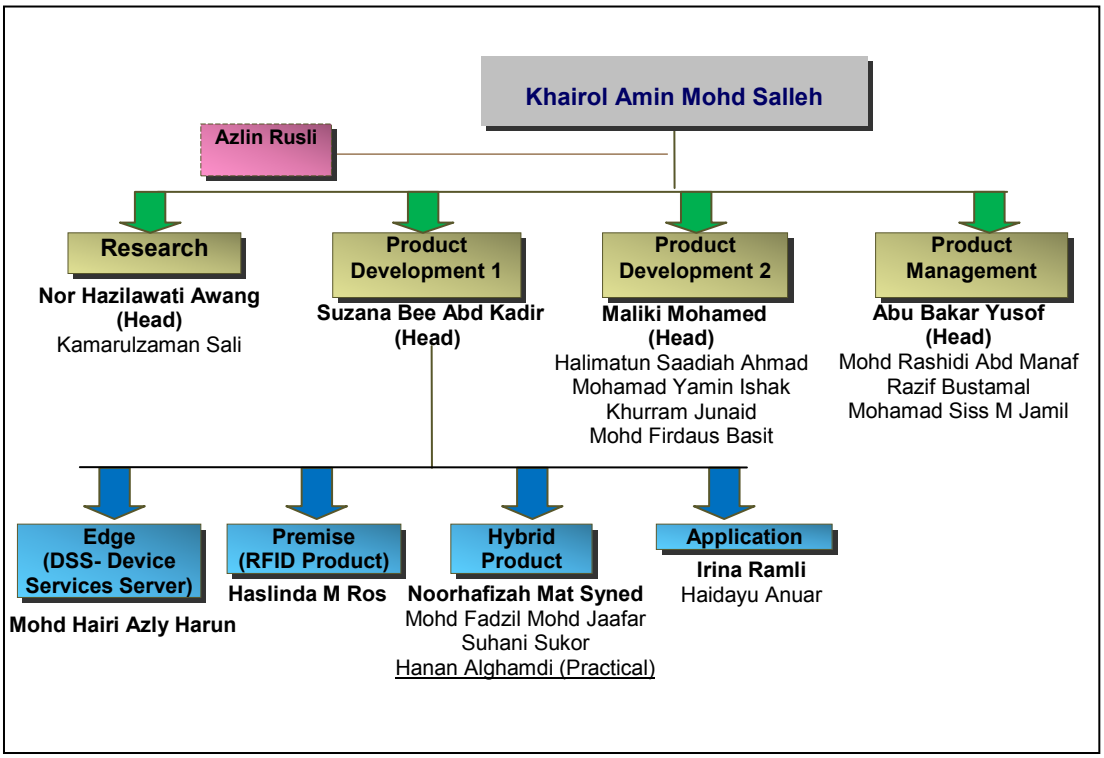

Figure 1.1 Applied Research and Development Department Structure

1.2 Project Background

Organizations face many problems that slow down development of software systems decisive to their operations and growth. Requirements process has always been critical in the implementation of software systems. Many researchers have shown that errors occur during requirements process are the most significant cause of software defects, and over 40% of problems in the software development life cycle come from the poor quality requirements [1].

Early detection and correction of requirements errors provide a high chance in improving requirements quality and overcoming cost expending during the development life cycle of software systems.

One of the purposes of this paper is to show that the requirements review is one significant way to control requirements errors. This achieved by enterprise reviews or walkthrough during developing SRS (Software Requirements Specification) in requirements phase. In addition, this project has identified types of requirements errors based on studying and research. After that, this project endeavored to introduce HeiTech Padu with workflow on how to integrate review process in requirements phase. This workflow can be applied during the development of SRS (Software Requirements Specification) in order to produce quality requirements.

Another main purpose of this paper is to analyze requirements for Shared Banking Service system. Shared Banking Services (SBS) is a counter-based transaction system developed on top of a software framework name Hybrid Client for developing a front-end, transaction based system. SBS system offers services for selected banking used to carry out at Post office branches. SBS system consists of two main systems which are transaction systems and support/utility functions.

Technically, SBS system works based on the components provided by Hybrid Client and Device Service Server (DSS) in its execution. The Hybrid Client components are used to provide common services of a transaction system, while DSS used to offer services for device sharing and device integration. The SBS system components diagram is depicted in figure 1.2.

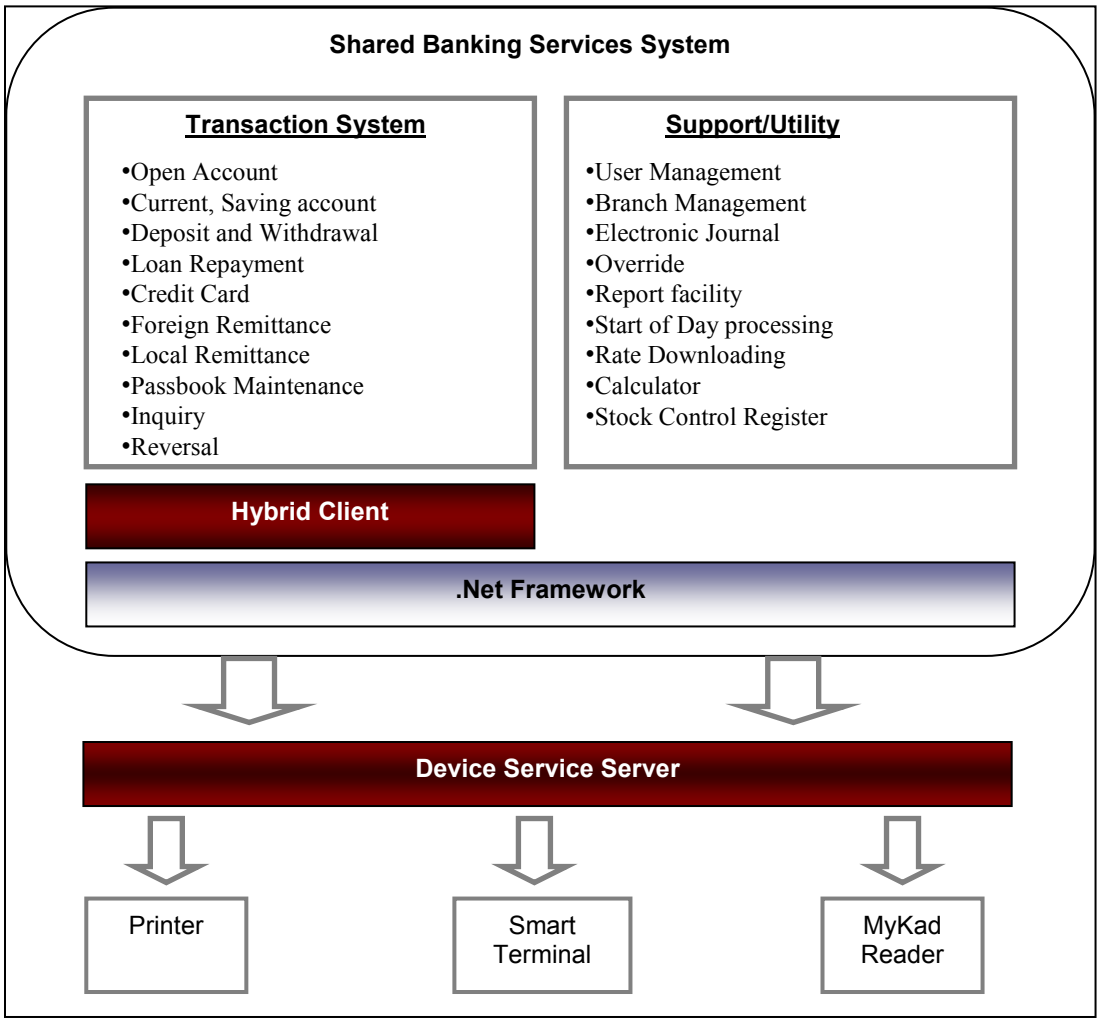

Figure 1.2 SBS System Components

CHAPTER 2

PROJECT OBJECTIVES / SCOPES

2.1 Introduction

This chapter explains about objectives and scopes of the project. It includes project plan that has been followed during Industrial Attachment with the project.

2.2 Project Objectives

The following section shows the objectives which need to be accomplished in order to complete the industrial attachment.

(i) To understand the current process that HeiTech Padu practice in requirements phase.

(ii) To analyze requirements for Shared Banking Services system (SBS).

(iii) To manage and produce standard documentations which are Software Requirement Specification (SRS), Requirement Traceability Matrix and User Manual documents which based on requirements of Shared Banking Services system.

(iv) To study the requirements review processes during the development of SRS.

(v) To introduce the workflow in applying review process during the development of SRS.

2.3 Project Scopes

Scope of this project is to study requirements process based on HeiTech Padu Berhad. This study acts toward understanding of the steps for developing System Requirements Specifications and applying requirements review in the requirements phase. Furthermore, this project involves research at the key elements of requirements review process that can be integrated while analyzing requirements. During research, this project attempted to define the enterprise review process during the development of SRS.

Depending on the research and analysis, this project introduced approach to improve practice of requirements review that can help HeiTech Padu to reduce requirements errors. The introduced model has divided the process of the development of SRS into phases prior to enterprise reviews or walkthrough process.

The other main aim of this project is to analyze the requirements in Shared Banking Services system (SBS) for AR&D Department. In addition, SBS deliverables are SRS and Requirement Traceability Matrix documents for SBS which followed HeiTech Padu Berhad standard and guideline.

The project also focused on using the best practices of the software development techniques and notations. The project includes the following notation and methodology:

(i) Use Unified Modeling Language (UML) notation.

(ii) Using Object-Oriented Analysis Methodology (OOA).

2.4 Project Plan

Kindly refer to **Appendix A** to view the project plan.

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