AUTOMATION INVENTORY AND TRANSFERING SYSTEM ELECTRONIC VOUCHER MKIOIS

Andriyano Raferino Barry

Universitas Komputer Indonesia
Jl. Dipati Ukur No. 112-116, Bandung
Email : bey_0209@yahoo.com

ABSTRAK

In the process of its development pattern inventory system and electronic vouchers MKIOS transfering carried out by many companies felt Sub Dealer Telkomsel is still not optimal due to use manual methods which complicate the existing human resources in running the system so that some common mistakes in it. Therefore we need a desktop-based computer application in solving problems that exist with the development of applications based on the operational standards of Sub-Dealer existing companies, ranging from reseller registration process, transaction, transfering and sales reporting processes will be merged into an integrated application and further testing. So from the results of tests performed application built able to overcome the existing problems in most of Sub Dealer Telkomsel and able to provide facilities for human resources in related fields.

Kata Kunci : *Inventory, Transfering, Elektronik Voucher MKIOS*

1. INTRODUCTION

Communications technology provider today is a technology experiencing rapid growth. PT. TELKOMSEL as one of the largest cellular provider has developed an electronic voucher system known as MKIOS (Mobile Kiosk) which is the electronic voucher recharge facility for pre-paid card. Due to the transition from physical to refill electronic voucher raises a few problems that occurred at the company that distributes products such MKIOS, among others :

1. Difficulty in controlling the stock of intangible MKIOS physical and causing the stock data is invalid.
2. MKIOS transfering system that takes a relatively long time because it is done manually by typing the code transferings electronic voucher MKIOS so often goes wrong in the transfering.

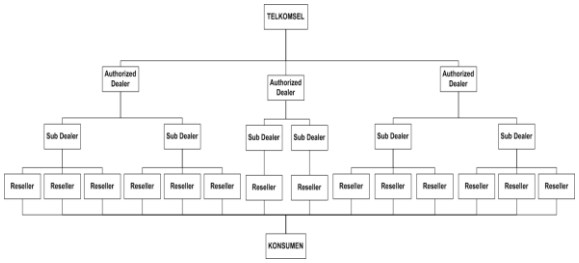
Based on the background mentioned, we need a desktop-based applications to perform automated inventory system and electronic vouchers MKIOS transfering. The purpose of the research is to produce a software that can overcome problems in inventory and electronic vouchers MKIOS transferings within the scope of the Sub Dealers (SD) with the following objectives:

1. To facilitate checking and stock control MKIOS.
2. To simplify and speed up transfering MKIOS stock.
3. To reduce errors in the process of shooting MKIOS stock.
4. To generate efficiency and effectiveness in the work process.
5. To reduce the workload of MKIOS admin staff who often have multiple job descriptions.

In general, the scope of work of this system are as follows :

1. The software that is made is about the inventory module, transaction module / bookings MKIOS, the transfering module and reporting module in this report produced only sales report.
2. The software that is made only includes the level of Sub Delaer (SD) and level Reseller (RS).
3. Program applications that are built to build this device is the Microsoft Visual Basic.NET 2005 and Microsoft SQL Server 2005.
4. The method used in the design is a method of object-oriented system design.
5. This software can only be used in general at the level of Sub-Dealer (SD).

Here are MKIOS product distribution structure shown in Picture 1.



Picture 1. Product distribution structure MKIOS

From Picture 1. can be explained that the process starts from the product distribution MKIOS TELKOMSEL as MKIOS provider that distributes products to levels below Authorized Dealer. Furthermore MKIOS product is distributed by Authorized Dealers to several levels of sub-dealers in which division is regulated in accordance with company policies related Authorized Dealer. After several sub-dealers receiving allocations MKIOS products from Authorized Dealer MKIOS existing product and then distributed to several Reseller who registered for sale to consumers.

2. MODELS,ANALYSIS,DESIGN AND IMPLEMENTATION

The research was conducted by using several stages, namely :

1. Data Collection Phase, with the method of study and review of literature directly to the problems taken.
2. Software Development Phase, the method of Waterfall / Linear Sequential Model with the following stages:
   a. Analysis
   b. Design
   c. Code
   d. Test
   e. Maintenance

2.1. System Analysis

Perform analysis on running system intended as the basis for design or repair the old system. From the analysis results can be known weaknesses or deficiencies of the old system and can be designed or improved to be a better system.

Facing Problems

After conducting an analysis of the system is running, it turns out there are the constraints faced by, among others :

1. Difficulty in controlling the inventory of stock that is not a physical shape MKIOS so frequent mistake made by staff at the time of reporting inventory MKIOS after doing the shooting
2. The length of time that must be passed in the process of inventory and shooting MKIOS so as to achieve a successful stage.
3. Number of data duplication process manually which is a causative factor the length of the process of managing inventory and the shooting is going.
4. Lack of facilities for handling errors in the shooting stage inventory systems and electronic vouchers MKIOS.

Analysis of Non-Functional Requirements
Hardware Analysis

The hardware required to run applications that will be built are:

a. Processor with a speed of at least 1.8 Ghz
b. RAM 512 MB
c. Harddisk 80 GB
d. VGA 128 MB
e. Monitor with resolution 1024 x 768 15”
f. Keyboard
g. Mouse
h. Printer

In addition, a system built still needs some equipment, such as :

a. GSM modem, in this case mobile phone SIEMENS C55.
b. Data cable for connection between PC and a GSM modem.
c. Sim Card which is still active.

Software Analysis

The software needed to make this system are as follows :

1. Windows XP as the operating system.
2. Developer Tool using Microsoft Visual Basic.NET 2005 and Microsoft SQL Server 2005.

Analysis of Functional Requirements

Analysis of functional requirements is an analysis of the functional needs of both the flow of data or information.

Use Case Diagram

In picture 2 are shown in the system with actor admin, staff and the owner described in the following use case diagram



Picture 2. Use Case Diagram

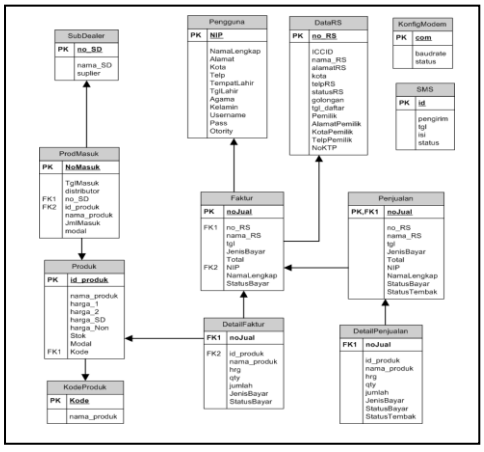
Here are the actors involved in the system :

1. ***Owner*** : The actor who acts as owner of the company concerned and have access to find out some information, such as product data information, user data and sales data.
2. ***Admin*** : Actor who served to make the processing of user data, data products and resellers.
3. ***Staff*** : The actor who served as an operator/special officer was appointed to run the operations of Telkomsel's sub dealers start of the process of registration of new hospitals, both transactions and sales transactions MKIOS transfer up to the reporting process MKIOS sales data.

2.2. System Design

Structure Database Files

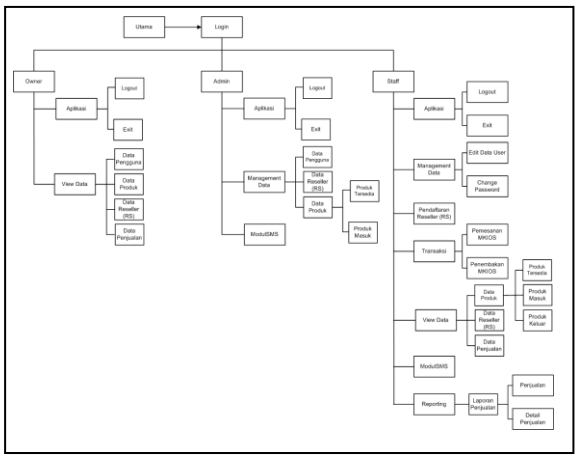
Here is a database structure used in the system can be seen in picture 3 below.



Picture 3. Conceptual Database

Menu Structure

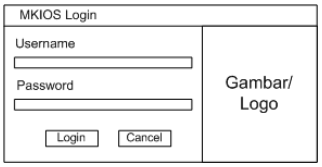
Designing the menu is used to facilitate search when running programs created, the following menu structure that exists in Inventory Systems Automation and transfering Voucher MKIOS seperti shown in Picture 4 below.



Picture 4. Menu Structure

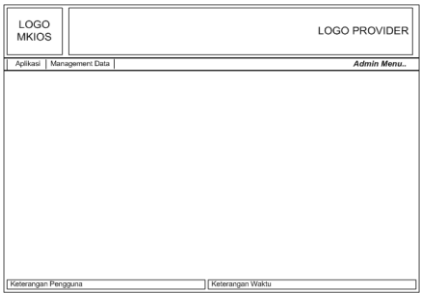
Display Interface

a. Page Menu System Login



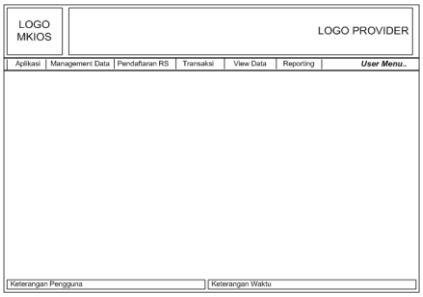
Picture 5. Display Page Menu System Login

b. Admin Main Page



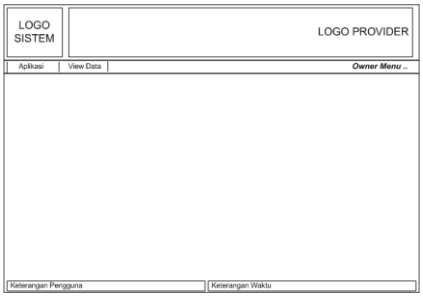
Picture 6. Display Admin Main Page

c. Staff Main Page



Picture 7. Display Staff Main Page

d. Owner Main Page



Picture 8. Display Owner Main Page

2.3. System Implementation

Implementation is the stage of translating the design based on the results of the analysis. The aim is to confirm the implementation of the program module design on the perpetrators of the system so that the user can provide input to the system developers.

Hardware

The hardware required for optimum operation of the application are as follows :

1. Processor 1,8 GHz or more
2. Harddisk 80 Gb
3. Memory 512 MB
4. VGA 128 MB
5. Monitor with resolution 1024 x 768 15”
6. Keyboard and Mouse
7. Printer

The tools used are as follows :

a. GSM Modem, in this case mobile phone SIEMENS C55.
b. Data cable for PC connection and a GSM Modem.
c. Sim Card which is still active.

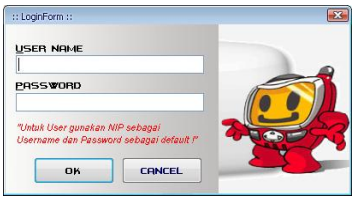
Software

The software used in the manufacture of the system is as follows :

1. Microsoft Windows XP Operating System
2. Developer Tool using Microsoft Visual Basic.NET 2005
3. Microsoft SQL Server 2005
4. SQL Server Management Studio as database interfaces.

Interface Implementation

a. Interface Implementation Form Login



Picture 9. Display Page Menu System Login

b. Interface Implementation Admin Main Page



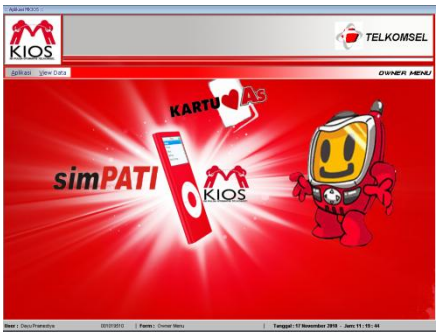
Picture 10. Display Admin Main Page

c. Interface Implementation Staff Main Page



Picture 11. Display Staff Main Page

d. Interface Implementation Owner Main Page



Picture 12. Display Owner Main Page

2.4. Testing System

Testing is conducted to explain the method of operation that consists of software testing tools, testing methods and test execution.

Alpha Testing

Alpha testing is testing that focuses on the output of the control input is entered in view form view control input, where the test is successful if the output in accordance with control inputs are included in each display. Here is the scenario testing done at the admin level users, staff and owner.

Table 1. Testing Scenarios User: Admin

Class Test	Item Test	Type Testing
Login Admin	Verification Username	*Black Box*
	Verification Password	*Black Box*
Data Pengguna	Add User	*Black Box*
	Edit User	*Black Box*
	Delete User	*Black Box*
	Print User	*Black Box*
Data Reseller	Add Reseller	*Black Box*
	Edit Reseller	*Black Box*
	Delete Reseller	*Black Box*
	Prnt Reseller	*Black Box*
Data Produk	Add Produk	*Black Box*
	Edit Produk	*Black Box*
	Delete Produk	*Black Box*
	Print Produk	*Black Box*
Produk Masuk	Input Produk Masuk	*Black Box*
	View Tabel Produk Masuk	*Black Box*
ModulSMS	Connect Modem	*Black Box*
	Send SMS	*Black Box*

Tabel 2. Testing Scenarios User : Staff

Class Test	Item Test	Type Testing
Login Staff	Verifikasi Username	*Black Box*
	Verifikasi Password	*Black Box*
Management Data	Edit Data User	*Black Box*
	Change Password	*Black Box*
Pendaftaran Reseller(RS)	Input Reseller(RS)	*Black Box*
	Print Reseller Terdaftar	*Black Box*
Transaksi	Pemesanan MKIOIS	*Black Box*
	Penembakan MKIOIS	*Black Box*
View Data	View Data Produk	*Black Box*
	Search Data Produk	*Black Box*
	View Data Reseller	*Black Box*
	Search Data Reseller	*Black Box*
	View Data Penjualan	*Black Box*
	Search Data Penjualan	*Black Box*
ModulSMS	Connect Modem	*Black Box*
	Send SMS	*Black Box*
Reporting	Verifikasi Laporan Rekap Penjualan	*Black Box*
	Verifikasi Laporan Detail Penjualan	*Black Box*

Tabel 3. Testing Scenarios User : Owner

Class Test	Item Test	Type Testing
Login Owner	Verification Username	*Black Box*
	Verification Password	*Black Box*
View Data	View Data Pengguna	*Black Box*
	View Data Produk	*Black Box*
	Search Data Produk	*Black Box*
	View Data Reseller	*Black Box*
	Search Data Reseller	*Black Box*
	View Data Penjualan	*Black Box*
	Search Data Penjualan	*Black Box*

Beta Testing

Beta testing is testing conducted objectively when tested directly in the company concerned. Creating a questionnaire about user satisfaction with the program application.

3. RESULT AND DISCUSSION

Based on the results of alpha testing (functional) with the existing test cases can be deduced that the software inventory automation systems and electronic vouchers MKIOS transfering will be free of writing errors and functionally release the results as expected.

Here is a beta test results shown in table 4 below :

Table 4. Beta Testing Result

No	Pertanyaan	Jawaban		
		Ya	Cukup	Kurang
1	Apakah perangkat lunak ini dapat mempercepat proses pengolahan data MKIOIS	9	1	0
2	Apakah perangkat lunak ini dapat memberikan kemudahan dibandingkan dengan proses yang sebelumnya berjalan	10	0	0
3	Apakah perangkat lunak ini dapat mengurangi proses duplikasi data	10	0	0
4	Apakah perangkat lunak ini dapat memberikan sajian laporan yang diinginkan perusahaan	8	2	0
5	Apakah perangkat lunak ini dapat mengurangi beban kerja staf admin MKIOIS	9	1	0

Based on beta test results can be concluded that this software can provide convenience in

the work process, speed up data processing, to reduce duplication of data and is able to provide the desired report and can reduce the workload for the staff concerned.

4. CONCLUSIONS AND SUGGESTIONS

Based on the results of development testing has been done and the overall analysis concludes as follows :

1. Development of this software can provide convenience in controlling inventory stock MKIOS.
2. The software is able to accelerate the process of shooting Mkios stock and can reduce the likelihood of errors in the process of shooting MKIOS stock.
3. The existence of this software can reduce the workload of admin staff who often have multiple job descriptions.
4. The software also can generate the desired report data, in this case report data MKIOS product sales.

Here are some suggestions that can be given by author :

1. In software development is still limited to systems that have been run on several enterprise Sub Dealer Telkomsel in general that has not been able to provide new innovations that can increase the usability of this software
2. Sms gateway system can be applied in order MKIOS with transfer payments, so if it has paid a transfer, resellers can use this system by sending SMS with a special format that transfer payments have been made, the system will immediately check if the transfer is entered in the accounts of the company and direct firing MKIOS stock on the respective resellers.

5. REFERENCES

[1] Chayo, Yosafat. S.Kom., (2005). *Belajar Sendiri Membuat Aplikasi Point Of Sales dengan Micrasoft Visual Studio.NET 2005*, Jakarta : Penerbit PT. Elex Media Komputindo.

[2] Irwanto, Djon. S. Kom., (2005) *Perancangan Object Oriented Software dengan UML*, Yogyakarta : Penerbit Andi.

[3] Kristianto, Harianto. Ir., (1996). *Konsep dan Perancangan Database*, Yogyakarta : Penerbit Andi.

[4] Kusumo, Aryo Suryo. Drs., (2004). *Buku Latihan Visual Basic.NET versi 2002 dan 2003,* Jakarta : Penerbit PT. Elex Media Komputindo.

[5] S, Roger Pressman. Phd., (2000). *Rekayasa Perangkat Lunak*, Yogyakarta : Penerbit Andi.

[6] http://www.codeproject.com