CHAPTER 1

INTRODUCTION

1.1. Background

The advent of computers has given rise to information systems being used as a business tool on large scale. Computers and more specifically information systems are being on a large scale by almost all businesses. The application of the capabilities of Information systems and technologies brings out improvement in business processes (Davenport and Short, 1990).One of the major sectors to reap the benefits of computers and information systems is the banks. The nature of the banking industry along with other financial industries involves information and trust. Many banks currently in this 21 century are using Computer technology and more specifically information systems into the implementation of Online Banking.

The percursor for the morden home online banking services were the distance banking services over electronic media from the early 1980s. Through the developement of the internet has driven global system of interconnecting computer networks that use the internet protocol suite (TCP/IP) to link devices worldwide. Online banking has being accepted through traditional banking by the use of advanced Computer technology. Online banking is also known as internet, e-banking or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website. The online banking system will typically connect to or be part of the core banking system operated by a bank and is in constrast to branch banking which was the traditional way customers accessed banking services. Therefore, security is involve within the Online banking system for the protection of customers data in the banking processes when accessing through the financial institution's website. Similarly, the reputational risks to the bank is important and also the security of a customer's financial information is very

important. Some of the common security features include the secure server technology (SSL technology), Enforcement of laws like the Data protection acts enables for more careful banking by the banks. In today's digital world, online banking makes alot of sense. It's convenient, secure, and can actually save money in the long-run. With online banking, anyone can fill applications, register and can transfer funds between accounts instantly anywhere at anytime. To make a purchase and if there isn't enough money in the cheque account. With online is simply can be access from home PC or at anywhere can easily use smartphone and quickly transfer money to cover the cost. Whether it's 3:00 a.m. or 3:00 p.m. online banking manage the accounts to customer convenience. Transfer money whether at local bank or miles away from home. Before the online revolution, people had no choice but stand in long line and wait their turn to pay bill, deposit cheques or transfer funds from one account to another using manual teller customer service. With today's technology, it takes only seconds to complete the banking processes and monitoring the bank customers is very effective and efficient through the implementation of Computer technology and information systems. Therefore, in most developing countries are still developing in Computer technology and information systems. Papua New Guinea is one of the developing country which still growing in it's economy and infrastructures. To mostly financial institutions and businesses in Papua New Guinea still need developing especially in the banking sectors that have to engage the unautomated banking system to be automated by the use of web-base technology for online banking system.

The one of the major government own financial institution in Papua New Guinea known recorgnized is the Nationwide Microbank Limited (NMB). In the gold rich township of Wau in Morobe Province Papua New Guinea, Nationwide Microbank, then known as Wau Microbank, began it's life in April 2004. On the 29th of April 2008, the name Wau Microbank was changed to Nationwide Microbank Limited (NMB) and the Bank issue a full license to operate as Microbank under the Bank and Finance Companies Act 2000. The Microbank has

now 12 branches across the country, providing innovative products and services to suit the rural and grassroots population in the country. For every new stalkholders goes to the Microbank office to apply and register in the Microbanking system. The current ongoing system of Microbank is by the use of Passbook banking system serving to it's reliable stalkholders. However, there are several problems identified in Microbank financial institution system faced by the existing stalkholders of Microbank. Passbook banking activity for the customers doing transactions and including other bank products as account balance, bank statement, request atm cards or cheque books consume lot of time and costs effect. Most stalkholders whom live far places turn to struggle their way to reach the bank for doing banking activities. Which those stalkholders experience lot of costs and time to reach the Microbank. Although similar concept for the fund transfer from a customer to another customer account internally which brings the two parties in the bank to review their Passbook before approving and successfully transfering the funds into the accounts consist of time consuming and cost for them. Other disadvantages of Passbook banking also found insufficient information and less effective banking from the stalkholders experience such as client statements incorrect infornations, less monitoring and less consistent on updating the customers about first hand informations from the Microbank banking system.

In this manner, the researcher proposed an implementation that will solve the current problems identified in Microbanking system. The development of the system will be based on transfering funds from two customers internally, check account balance, account statements, add beneficiaries and can enable them to request atm cards or cheque books by using web browser to access the web-based Microbank Online Banking System. Mainly this web-based system prioritize the existing customers whom are already being registered in the Microbank ongoing system. This banking system is for internal banking especially for the stalkholders in the Microbank system. Has for the new client into the bank will have to follow

the traditional process internally with the bank to registered before engaging them into the web-based banking system. Their will be several panels to facilitate the developing of the banking system for this expected entities such as Admin panel, Staff panel and Customer panel in the web-based system for Microbank Online Banking System PNG. The administration gives the credentials for web-based banking system to the customer and staff that are already being registered in the Microbank. For such credentials has username and password other additional information to access their respective panels in the Microbank web-based banking system. In the Admin panel will register the bank staffs and customers into the web-based banking system. The Admin panel will be making update, delete and print out bank report stored in the system to be submitted for the bank Management decision making. For the Staff panel will be serving the customer banking information internally in the admission for accurate data before approving the request from the customers using the bank facilities and the products. The Staff panel will be for making approval for customer request such as add beneficiaries, request atm cards or cheque books to the bank and make print out report to be submitted to the bank admission for bank management assessment and decision making in the bank system. Customer panel will only enable the customer to perform banking activities such as Add beneficiary for another customer to tranfer funds internally in to the account in the bank system, check account balance, account statement, request atm cards and cheque books to the bank. Therefore, these panels will manage the bank system to be access online from web browser to continue the ongoing banking system in the Microbank institution using from this proposed web-based banking system as Microbank Online Banking System.

1.2. Problem Identification and Formulation

The identification and formulation for Microbank is shown below on how the identified problems will be formulated into computerize system;

1.2.1. Identifying the Problem

The problems can be clearly identified as follows below:

1. Passbook banking activity for the customers doing transactions and including other bank products as account balance, bank statement, request atm cards or cheque books consume lot of time and costs effect.
2. Transfering funds on customer to customer account is also consume time and costs effect.
3. Information process of client Passbook in the banking activities is sometimes found insufficient from the client and bank staffs regarding client bank statements, less monitoring and less consistent on updating clients..

1.2.2 Problem Formulation.

According to the above stated problems, formulation of problems can be listed as:

1. How to analyze the current exsisting information system for Microbank of Papua New Guinea in each division such as from management, administration, supervision, customer services and tellers to determine the current issues being identified that will achieve them in an efficient way.
2. How to Design a web-base banking system for the solution to the problems occurs in the current banking system.
3. How to Test the web-base banking system for Microbank to ensure that it meets the requirement for banking management system with is operation work flows.

4. How to implement the web-base banking system so that it will become a ready-made system for the Microbank.
5. How to maintain the web-base banking system for the banking system that can manage to maintain with operation work flows.

1.3. Research Objectives

The research Objectives are described as follows:

1.3.1. Purpose

1. The main aim for this study is to design and develop a web-based Microbank Online Banking System for Microbank PNG. In which the researcher based this research on Microbank transfering funds and other banking activities for the valuable existing customers in Microbank banking sector. The web-base will manage the procedures under the banking system scheme for the customer banking informations in the banking operations of Microbank institution.

1.3.2. Objectives

The purpose of this study is as follows:

1. To analyze the current exsisting information system for Microbank of Papua New Guinea in each division such as the management, administrations, supervision, customer services and tellers to determine the current issues being identified that will achieve them in an efficient way.
2. To Design a web-base banking system for the solution to the problems occurs on the current banking system.
3. To Test the web-base banking system for Microbank to making sure that it meets the requirement from the management, administration, supervisor, customer services and tellers.

4. To implement the web-base banking system so that it will become a ready-made system for the Microbank.
5. To maintaine the web-base banking system so that it can sustatin as a part of the banking procedure and process for Microbank.

1.4. Research Implications

This study is expected to the following parties:

1.4.1. Practical Uses

This development of the web-based banking system will be operated by the Microbank institution to improve the Passbook banking system in a more effective and efficient way to make it easier for Microbank can manage to reach their reliable customers and better management information system for the bank management in decision making. To the extends of this online banking system can also be proposed to other financial institutions which has the similar issues as Microbank.

1.4.2 Academic Uses

1. Institutions

This research paper is openly usable and referenced journal for future students which will work on this similar projects.

2. **For Other Researchers**

The determination of this research is mostly possible for the future researchers whom wish to further their knowledge in the study of information system.

1.5 Limitations of Study

To clarify the time limit and ability of the researcher, the discussion of this study desseminate for the restrictions to the development on the web-based banking system for Microbank.

1. **Administration**

   To perform an easy access and accurate verification to make sure the customer and staffs are accepted for registration, managing staff and customer by providing better services and decisions. For the customer extends on the bank account has the limitations among required to the customer account and with the other bank processes included internal banking for only Microbank members.

2. **Staff**

To perform an easy access to record, report, approve and disapprove customer information when using the bank facilities from using banking services. The informations are process accurately and delivers to the customers. To the use of the facilities are maintained to the procedure from the bank requirements.

3. **Customer**

To perform an easy access to view account balance, monthly statement, request atm card, request cheque book and make transaction. The customer is only required to maintain the bank amount required from the bank and only internal banking.

1.6. Research Time

The research location was set at Indonesian Computer University (UNIKOM), Bandung, West Java, Indonesia.

The schedule of the research is as follows:

Table 1.1 Research Time

SCHEDULE	MONTH																			
	OCTOBER 2016				NOVEMBER 2016				DECEMBER 2016				JANUARY 2017				FABRUARY 2017			
1. Identification of Needs	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
a. Observing																				
b. Interview																				
c. Collect Data																				
d. Document Analysis																				
1. Creating and Fixing Prototype																				
a. The Design Process																				
b .Design Database																				
c. Make Program																				
3. Testing the Prototype																				
a. Black Box Testing																				
4. Implementation																				
a. Implement																				
5. Maintenance																				
a. Maintain System																				

1.7. Thesis Outline

This chapter proposes the researcher background, problem identification, research objectives, research usability and the limitations of the research :

CHAPTER 1 INTRODUCTION

Chapter 1 contains a description of the background information and the importance of the research; problem identification and formulation, the main objectives and purposes of the project, and the benefits of the research. Furthermore, this chapter includes the limitations or restrictions of the project, the location and time of the research and the systematic writing.

CHAPTER 2 LITRATURE REVIEW

This chapter indicates the theory upon which the study is based. That is, the understanding of information system, banking, PHP and JavaScript Programming, UML (Unified Modeling Language), Database, HTML, MySQL, Object-Oriented Analysis and Design (OOAD), etc. It contains a literature review of relevant previous work and background information relevant to this research.

CHAPTER 3 OBJECT AND METHODS

Chapter 3 describes the object of the research and the approach and methods used in this research. That includes; the object's organizational structure with job descriptions and method and system development approach used is the object-oriented the types and method of data collections (primary data source and secondary data source). The method the researcher used in systems approach is the Object-Oriented Systems Approach and is visualized with UML (Unified Modeling Language) diagrams such as Use Case Diagrams, Activity Diagrams, Sequence Diagrams, Class Diagrams, and Deployment Diagrams. Further analysis of the current system consisting of document analysis, analysis of current procedures with the use of Use Case diagram, Use Case Scenario and Activity Diagram of each use case, and the Evaluation of the current system.

CHAPTER 4 RESULTS AND DISCUSSION

This chapter describes the design and construction of the system, testing results and discussions about the designed system. That is, it includes: description of the system design and its objectives, overview of the proposed system consisting of Use Case Diagram, Use Case Scenarios, and Activity Diagrams, Class Diagram, and Deployment Diagram. Further the Implementation phase includes the software implementations, hardware implementation, database implementation, and interface implementation. Finally, is the testing that includes testing plans, test cases and results, and conclusions of the test results.

CHAPTER 5 CONCLUSIONS AND SUGGESTIONS

This chapter contains the conclusion of the research, and the suggestions made to further review re-develop the system.