COMPUTERISED SAVINGS ACCOUNT OPERATION IN A COMMERCIAL BANK
(A CASE STUDY OF FIRST BANK OF NIGERIA PLC)

BY

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APPROVAL SHEET

This project has been approved as meeting the requirements for the Post-Graduate Diploma in Computer Science of the Department of Mathematics/Statistics/Computer Science of Federal University of Technology, Minna.

PROJECT SUPERVISOR PRINCE RASHEED BADMUS	DATE
HEAD OF DEPARTMENT DR. K.R. ADEBOYE	DATE
EXTERNAL EXAMINER	DATE

DEDICATION

This work is solely dedicated to my wife and special kids for their concern during the course of this program. We really missed each other. I LOVE YOU all.

ACKNOWLEDGEMENT

First and foremost, my sincere gratitude to the Almighty God, who gave me good health, strength, courage and wisdom to pursue and complete the computer program as well as this project successfully despite all odds in the work place.

I wish to place on record the special concern of my project supervisor, Prince. R. O. Badmus. Despite your tight academic program and other engagements. You still made the work simple to start and complete. Indeed, Prince Badmus, I am ever grateful for both your brotherly concern and that of my lecturer/supervisor concern. I am indebted especially for accumodating my frequent disturbances on the account of this project.

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To all my lecturers, you have all been very wonderful for the superb teaching more grease to your elbows sirs.

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Equally worth mentioning are my special kids and wife. We really missed each other. But daddy has to be a "computer literate." I salute your love.

To friends and well - wishers, I thank you all. Finally, my special thanks to all who have contributed to the success of this work. May the Lord bless us all.

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ABSTRACT

This project work establishes the need to develop a new computerised procedure of operating a savings account in First Bank PLC. It emphasises the need for a new system to replace the existing one based on the current and the expected problems that is inherent in the current procedure in the organisation.

To this end, the project first discusses about the bank and the existing savings account system. This is done in order to observe the problem areas associated with the current system. However after the consideration of the problems, it was recommended that a new system needs to be designed. Based on this objective and the system study, the logical and the physical specification of the proposed system was designed. The logical design comprises of the output specification, input specification, file design and the systems procedures of the proposed system. While the physical design contain the physical construction in terms of program developed to achieve the objective of the system.

Finally, the mode of operation of the proposed system is analysed and its stages of implementation. The implementation stages is done in a way to ensure reliability and continuity of savings account activities in First Bank PLC.

CHAPTER ONE

1.0 GENERAL PREAMBLE

1.1 INTRODUCTION

The link between computer technology and our present day is evident by the increase activities worldwide. This has gone to such an extent that it is obvious that human efforts alone can no longer cope with the increased pace of these activities. Therefore, with the industrial revolution which brought about the introduction and application of computers in many diverse fields, the expected problem is one way under control. This is because computer has the capability of processing a large data within a very short period of time and with the most possible accuracy.

It is, therefore, important to note that one of the areas that have benefited mostly from this expansion of computer technology is the area of banking business. Banking business of course, uses computer for a variety of tasks which include current account, savings account, fixed and short deposit accounts, loan accounts e.t.c.

However, of all the various uses of computer in the banking business, the one that readily comes to mind most frequently is in the area of savings account operation. This is probably due to the fact that savings account is the most popular of all the customer accounts in the bank and have the largest number of customers, than any other type of account. Therefore, with the application of computers in a savings account operation, major savings can be made in the area of clerical labour, since many hands are always required in manual operation.

Furthermore, there is need for accurate and urgent savings account processing and necessary reports generated without wasting much time. This is essential so that customer's morale is not adversely affected through delayed processing of their passbooks and payment of their money.

In addition, another side benefit is that a computerised savings account system, enhances the competitive ability of the organisation in the industry at the same time providing the management with easy reference accounting information, such as data for general ledger entries, and easy record keeping. There is also room for adequate security measures for this record like the backup systems, especially in the case of fire incidents.

In recognition of the above facts, this project gives a vivid analysis of the step by step requirements of the computerisation of a savings account system in a banking industry; a case study of First Bank of Nig. Plc. This bank is chosen because of its large number of customers and all other relevant reasons which makes it the largest commercial bank in the Nigerian banking industry.

1.2 HISTORICAL BACKGROUND OF FIRST BANK PLC

The establishment of First Bank of Nigeria Plc. predates the birth of the Nigerian Nation as a Sovereign entity, registered as Bank of British West Africa in 1894. Government accounts were kept in the bank, and it handled the import and export of mint coins until 1959 when the Central Bank of Nigeria was established.

When it became apparent that the colonial relationship was coming to an end in West Africa the bank changed its name to Bank of West Africa (B.W.A.) in 1957. Oddly enough, this name was proposed as far back as 1909 but for one reason or the other it did not materialise until 1957.

During the merger era of the 60's, B.W.A. was not left out. It merged with the Standard Bank, one of its shareholders since 1920 and became Standard Bank of West Africa since 1966. The history of Bank of West Africa came to an end soon after this merger and in 1969 a seperate company was incorporated in Nigeria under the name Standard Bank Nig. Ltd.

To reflect the majority share holding and the fact that it was the "pioneer" bank in the country First Bank of Nigeria assumed its present name in 1977. This noteworthy evolution will not be complete if we fail to mention that in 1966, Bank of West Africa Limited absorbed the Lagos Branch of Chase Manhatan Bank of New York. Right from its inception, First Bank have always enjoyed the patronage and confidence of all and sundry both government and individuals. It is the banks policy to encourage banking habit and to this end the bank have over 240 functional branches in all the states of the federation, the largest by any single bank in the industry.

1.3 ORGANISATIONAL STRUCTURE OF FIRST BANK PLC

One common feature in the organisational structure of all major banks, in Nigeria until recently, is the fact that their head offices are located in Lagos or in a

state capital, with area/regional offices in major cities up country. The area offices have a number of branches under their control.

As in any other company, the share holders are the owners of the bank. The chairman and other directors of the bank are appointed by the Federal and State government which own majority share holdings in nearly all the banks in Nigeria. The directors usually meet periodically to formulate the policy of the bank. This includes discussing changes in top management personnel, approving budgets and large loans and discussing other problems and policies with the managemment of the bank.

In First Bank Nig. Plc like in any other bank, the executive directors are the top management of the bank. They conduct the day to day affairs of the bank. Other members of the board are not full time employees of the bank. In First bank Plc, as in other organisations, there is only one managing director assisted by five executives directors. The managing director and executive directors are full time employees of the bank appointed sometimes by the Federal Government, as the bank is being controlled by the Federal Government. After the Managing Director and the Executive Directors come the Heads of Departments who report to the appropriate Executive Directors. In First Bank Plc, they are called Deputy General Manager (DGM).

In First Bank Plc, being the premier commercial bank in the Nigeria economy, we have about fifteen Deputy General Managers, nine of them heading the various departments in the bank, one of them as the Manager of the biggest branch of First Bank at Marina - Lagos, the head office complex and the remaining five heading the five regional administrations of the bank in Nigeria.

The major departments in the bank are:-

- Personnel
- Finance and planning
- Coporate finance
- Banking and credit administration
- Resources
- Inspection
- Company secretary
- Special duties
- International banking.

The five regional administration of the bank are:-

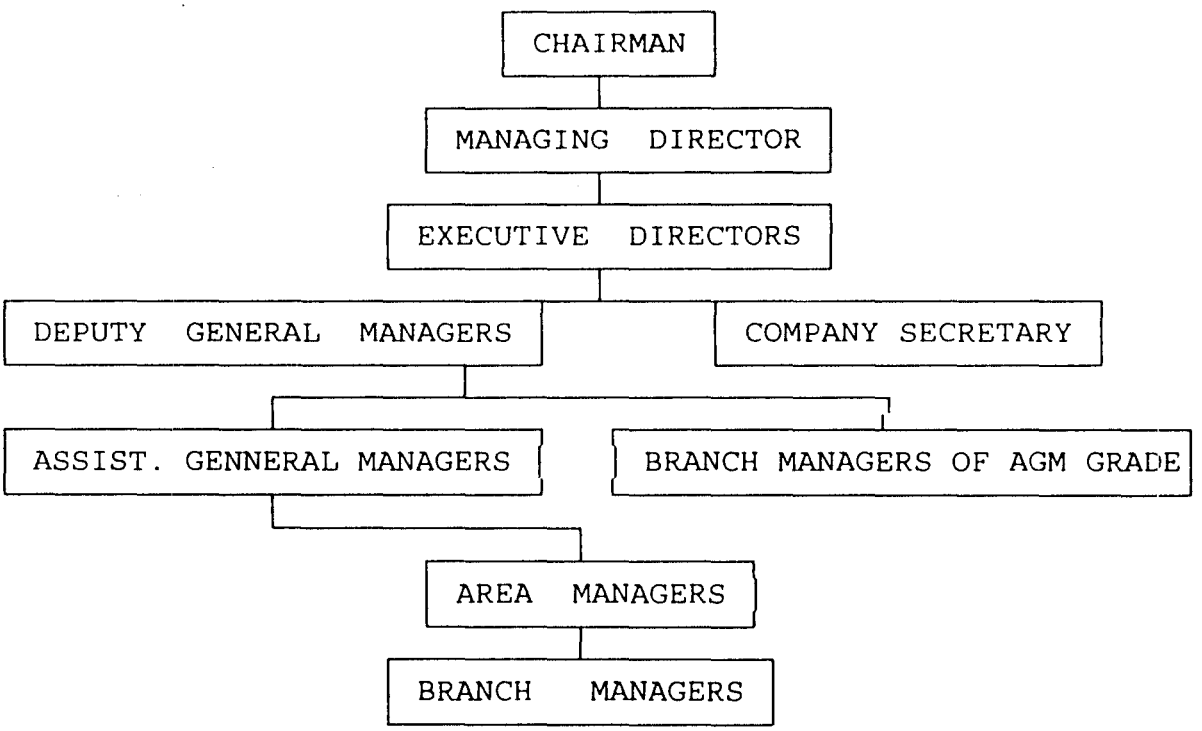
- West banking operations
- East banking operations
- Lagos banking operations
- North banking operations
- Central banking operations

And finally the Marina branch headed by a Manager of the Deputy General Manager status.

As can be seen every Deputy General Manager has a responsibility for a specific function in the bank. Closely following the Deputy General Managers are the Assistant General Managers. They are head of specialist services units. Some of whom report to the Deputy General Managers, while some report directly to the executive

directors. Below the Assistant General Managers are the Area Managers who have higher lending authorities than some branch Managers to facililate the rapid processsing and approval of loans. After the Area Manager is the branch Managers.

The organisational chart of First Bank PLC can be represented below:



1.4 STATEMENT OF THE PROBLEM

The choice of where to save is numerous. The institutions that deal in savings have adopted some policies in order to attract customers. The customers, on the other hand, consider some factors before settling for where to save their fund. The most determining factor of choice of institutions is accessibility to fund when needed. The owner of fund would want to have access to their fund without wasting time. That is, "EFFICIENCY" in attending to the savers on matters concerning their savings.

Banking industry of today is highly competitive. To meet up this competitiveness, new innovations are being introduced into the system, such as computers, electronic funds transfer, etc. All these are employed in order to meet up or enhance the competitive ability in the industry. It is in the light of this that this project is concerned with computer application to savings account operations.

1.5 OBJECTIVE OF THE STUDY

The main aim of this study is to highlight ways of overcoming the numerous shortcomings associated with the present system of operating Savings Account in First Bank PLC. In addition, the research work is to fashion out a new system for better and efficient customer services. This can best be done by the application of machines used for data processing like the computers. Specifically, the main objectives of the study are as follows:

i. To study and analyse the activities of savings account operation in First Bank PLC.

ii. To observe the problem associated with the existing operations and provide the need for a computerised operation in the organisation.

iii. To provide a logical and physical design of a computerised savings account that will suit the organisation.

iv. To describe the various operations of the proposed system and its mode of operations.

v. To eliminate delays involved in processing customers' request as well as providing up-to-date information on enquiry made.

vi. To ensure automatic generation of the necessary daily, weekly, monthly, quarterly, and yearly reports as the case may be.

1.6 SCOPE OF STUDY

Despite the necessity for the substitution of a computer based saving's accounting system for manual procedures in these modern days as it is being done worldwide. There are still some problems to be faced due to the incapability of the new system to perform some functions in the present operational procedures. This includes:

i. Verification of customers signatures, as the customer's specimen signature cannot be computerised.

ii. Separation of signature cards from index cards, either by perforation or cutting the card.

iii. Also the computer based saving's account system does not include filing of the signature cards in a signature card box.

iv. It is also incapable of making comparism between the customers passbook balance and the balance in the computer itself. Also it cannot verify dates that is check whether the deposit or withdrawal forms are dated correctly.

1.7 METHODS OF DATA COLLECTION

In trying to fashion out a new computer based savings accounting system, many methods were involved in gathering information about the existing system. Specifically, the methods of data collection employed in this study sre as folows:

i. **OBSERVATION**: This method was used to directly study the operations of the existing system.

ii. **RECORD REVIEW**: Written information, such as forms and reports used in the operations of the system were reviewed and analysed.

iii. **INTERVIEWING**: This was used mainly to confirm some information gathered using the above two methods. It was also used to obtain information or suggestions that can be considered relevant to the proposed system.

CHAPTER TWO

2.0 REVIEWING THE CONCEPT OF BANKING

2.1 LITERATURE REVIEW

A bank means any person who carries on banking business and includes a commercial bank, an acceptance house, discount house and financial institution.

a. **COMMERCIAL BANK**:- Commercial bank means any person or group or a corporate body in Nigeria who transacts banking business and whose business includes acceptance of deposits and other related services.

b. **ACCEPTANCE HOUSE**:- This consists of any person or group or a corporate body in Nigeria who transacts banking business and whose business mainly consists of granting acceptance facilities or whose operations are, in the opinion of the Central Bank, those of an acceptance house.

c. **DISCOUNT HOUSE**:- This means any person or group or corporate body in Nigeria who transacts banking business and whose business mainly consists of trading and holding commercial bills of exchange, treasury bills and other securities or whose operations are in the opinion of the Central Bank, those of a discount house.

d. **FINANCIAL INSTITUTION**:- This means any person in Nigeria who transacts banking business but who is neither a commercial bank, an acceptance house nor a discount house.

Banking business means the business of receiving monies from outside sources as deposits, irrespective of interest and the granting of money loans and acceptance of credits or the purchase of bills and cheques or the purchase and sale of securities for account of others or the incurring of the obligation to acquire claims in respect of loan prior to their maturity or the assumption of guarantees and other warrantees for others or the effecting of transfers and clearings.

Banking industry play important role in the economic life of a country, particularly a developing nation like Nigeria through the provision of banking services. Sometimes in 1891, it became apparent that banking facilities were urgently required in West Africa and especially in Lagos. Elder Dempster and Co. were approached in 1892 and 1893,the Bank of British West Africa was announced, but it was a little more than a department of Elder Dempster & Co., a private company. In December 1893, the colonial government resolved to leave it's accounts with the bank for two or three months, pending the formation of a bank with a capital of $100,000 out of which $30,000 was paid up.

Some basic services provided by the banks, most especially the commercial banks are:

i. ACCEPTING DEPOSITS:- Banks accept both current and deposit accounts from customers for safe keeping.

ii. AGENTS OF PAYMENT:- Customers can instruct the bank to pay anyone on their behalf.

iii. Make possible the use of cheque thereby avoiding the problem of carrying cash about.

iv. LENDING AGENTS:- Gives loans and advances to customers.

v. Commercial banks buy and sell foreign exchange to customers.

vi. They provide services such as advice to businessmen and payment of insurance premium.

vii. Banks also undertake the services of safeguarding valuable items to customers.

2.2 THE CONCEPT OF SAVINGS

The term savings can be defined either as refraining from spending or as not spending income on consumption. In other words, any after tax income which is not spent on the purchase of goods and services is regarded as savings. Every person or household spends a certain amount of money on the purchase of a number of essential items like food, clothing and on services like lighting, transportation, water supply, housing, etc. Some households spend virtually the whole of their income on these essential consumptions leaving little or no surplus. However, many households do have surpluses, which they either spend on luxuries or non-essential goods and services or retain as savings. When such savings are made in the banks or other financial institutions, such funds are released for the use of the people. People save to:

1) Specifically, planned purchases e.g buying a new car or motorcycle, paying for a building or school fees e.t.c. This can be described as saving money to

finance future onsumption which includes putting money aside to meet contractual obligations like loan repayments, insurance premiums e.t.c.

2) Saving is done to enable the saver have something to fall back on in the event of unexpected occurrences such as meeting sudden emergency caused perhaps by accident or ill health in the future.

The major determinant of the amount people save is the level of their income. The volume of savings is much higher in the developed countries than the developing countries because they have a higher national income. Other factors which may affect the level of savings include taxation, government policies towards savings, the availability of credit and the expectation of price changes.

Some years ago, it was generally believed that the rate of interest determine the volume of savings, that is, people save more when the interest rate was raised, in order to gain the advantage of higher rates. On the other hand, when the interest rate falls, there would be a reduction in savings. But this have been discovered to be untrue because despite low interest rates in some countries, people continue to save especially to have something to fall back on incase of the unexpected as stated earlier on.

Conclusion was therefore reached that the motivation for savings is not primarily interest rates. However, interest rates do influence the form in which savings are held. For instance, if commercial banks pay higher interest than the Federal Mortgage bank, or Federal Savings Bank, commercial banks will attract more savings.

In Nigeria individuals wanting to save can make a choice between a commercial bank or any other bank savings and loans groups called "Esusu" clubs, thrift and loan societies and co-operative societies. The factors that influence the choice of institution are the degree of security, rate of return, accessibility, liquidity and above all efficiency in attending to customer matters.

2.3 TYPES OF ACCOUNT

2.3.1 CURRENT ACCOUNT

To open a current account an introduction or references are required. You can pay both cash and cheques into your current account. You can also pay money order or dividend warrants into your account.

i. You only withdraw cash by cheques.

ii. You cannot overdraw your account without prior arrangement with your banker.

iii. You are not permitted to draw against an uncleared cheque.

For operating a current account, banks normally charge commission on turnover (COT) monthly or quarterly. This charge will not be imposed if you maintain a credit balance of #100.00 on your personal account throughout the particular period. No charge is made for clearing cheques drawn and payable anywhere within Nigeria.

Details of money/cheques coming in or going out of your account are usually set out in form of statements. The statement also shows how much money you have left in your account.

You have the right to ask for your statements of account anytime or to be rendered at specific dates. Any error discovered on the statement should be reported to your bank within a reasonable time for rectification.

2.3.2 SAVINGS ACCOUNT

No reference is required when opening a savings account, but you may be required to open an account with a specified minimum amount. You can deposit into or withdraw from your account upon presentation of your passbook during banking hours, at the branch where your account is held. You cannot draw cheques on your savings account, but you can pay cheques into your account by special arrangement with your bank. No notice is required before withdrawals are made,but the conditions stipulated at the back of your passbook should be carefully read and understood. A saving account earns interest which is quite competitive by industry standards.

2.3.3 DEPOSIT ACCOUNT

Deposit accounts can be subdivided into fixed and and short deposit accounts. Under the fixed deposit accounts you can arrange to deposit any amount with the bank for a fixed period.The terms of such deposits,including interest payable thereon are

subject to negotiation between you and your bank.The deposits can be renewed after maturity for a further fixed period.

For the short deposit account the amount and the period are not fixed and so the principal amount can be subject to increase,likewise the period of keeping the account. Withdrawal from such account is with a seven days notice.

2.4 BENEFITS OF COMPUTER APPLICATION

Computers are electronic machines or devices capable of retrieving, storing, processing and at times manipulate data into information at a very fast rate than that of human being. Therefore, data obtained from the operational procedures in the existing system is coded into computer languages and input into the computer so as to:

i. Produce or process information more cheaply.

ii. Process information more accurately

iii. Make information available more timely.

Though the cost of the application of machines like computers may not be of much difference from the cost of operating under the existing system or the cost may be the same, there is bound to be a lot of advantages to be derived from the computerised system. These advantages are in addition to the above three especially now that there's a lot of competition in the banking industry. They include the following:-

i. With the application of computers to the existing operational procedures, there is going to be increased efficiency and the effectiveness of the new system, resulting in cost savings and operational efficiency, which are direct benefits to be derived.

ii. The enhancement of the competitive ability of the organisation and the improvement of customer relations with the bank as a result of more timely and accurate information.

iii. The computerised system will reduce manpower, that is the number of hands required in handling the savings accounting operation.

iv. The application of computers to the existing operational procedure will provide ways of keeping records in a well organised format.

v. With the adoption of a computerised operational procedure, there will be an easy way of recalling data at any given instance for reference or enquiry without delay.

It is as a result of all these important benefits that there is need to change to a computerised savings accounting system. The attributes of the computer being able to accomplish any task with high speed and within a reasonable time, as stated earlier, makes it applicable in the present time.

CHAPTER THREE

3.0 SYSTEMS ANALYSIS AND DESIGN

3.1 DESCRIPTION OF THE EXISTING SYSTEM

In First Bank of Nig. PLC., under the present system, ledger cards are opened for every individual customer on which all the records of his/her transactions are made. These are filed together in a ledger binder. All that the ledger clerks do is to compute customer balances by making addition or subtraction as the case may be when a customer either deposits or withdraws from his or her account. The format of the ledger card is as shown below:

NAME IN FULL: (SURNAME FIRST) S.B. NIG. NO.

ACCOUNT NO.

HEADING CHECKED PASS BOOK NO.

BY SAVINGS OFFICER

DATE	CODE	DEBIT	CREDIT	BALANCE	INTEREST
21/09/96	D		100.00	100.00	
22/09/96	W	20.00		80.00	
23/09/96	W	30.00		50.00	
27/09/96	D		500.00	550.00	
27/09/96	Int.			552.26	52.26
02/10/96	Trans.		100.00	652.26	
15/10/96	Int.			657.98	6.72
16/10/96	Trans.	150.00		507.98	

A ledger card is where the records of all the transactions in a customer account are made. It shows both the name and account number of the customer. On the ledger card of every customer, there is the Passbook No. This guides the ledger clerk against using a wrong passbook for an account. All the above listed particulars normally serve as guide before the customer,s signature is verified using the specimen signature on the signature card from which all these other particulars are extracted.

The ledger card as shown above is divided into six columns. The importance of each of the columns are:

i. **DATE**: The first column is the date column. This is where the date of every transaction in the account is recorded.

ii. **CODE**: On this column is the code to indicate the type of transaction taking place. This shows whether it is a deposit or withdrawal.

iii. **DEBIT**: This is the column on which all the withdrawals are recorded. Also recorded in this column are transfers from this account.

iv. **CREDIT**: This is the column on which all deposits are recorded. Also recorded on this column are the transfers to the account.

v. **BALANCE**: On this column is the balance of the account at any particular time. Any time there is a deposit or withdrawal, the new balance is recorded on this column.

vi. **INTEREST**: On the interest column are the monthly interest figures applied to the account.

A ledger clerk is also expected to file away this ledger cards whenever an account is closed or when the ledger card is filled up. A lot of writing is involved in the sense that so many forms are filled ranging from the signature card to the ledger cards, open and closed registers and so on.

3.1.1 MONTHLY BALANCING

This is the listing of all the customer ledger accounts balances, the total sum, which must agree with the active savings bank accounts balance in the general ledger.

3.1.2 SECURITY BALANCING

Security balancing is done at anytime of each month on the instruction of the Manager or a delegated officer e.g. the Assistant Manager or Accountant. The Officer or Supervisor sums up the balances in each ledger as at the date of balancing. The total of the machine list must agree with the relative control. This is normally done to check against fraudulent activities on any ledger.

3.2 PROBLEM ANALYSIS

The use of the existing system of savings account operations where virtually everything is done manually is associated with so many short-comings. Some of the problems associated with the present procedural methods of operating a savings account involves the following:

i. The process is time consuming.

ii. The processes involve a lot of writing which in this case involves the use of a lot stationery. In addition, so many books are brought together to collect and keep information. This results in fatigue.

iii. A lot of manpower is needed in carrying out this job.,

iv. Easy reference and enquiry is not possible as it may require opening many pages of the ledger card folio before getting to the desired one.

v. There is the problem of carrying a ledger sheet binder around with the risk of loss of individual ledger sheet binded together.

vi. The use of the existing system which is a manual procedure gives easy access to fraudulent activities as the figures of the transactions recorded on the ledger card can easily be altered.

vii. There is no security for these records and documents as they can easily be gutted by fire without any proper record to fall back on.

viii. In the case of interest calculation which is done manually, there are bound to be a lot of mistakes for some individuals as some may either be over-paid or under-paid as a result of the principal amount being short sighted.

ix. A lot of money is needed under the existing system to pay the personnel and train them for the proper handling of the documents.

x. The processes are inefficient.

3.3 DESIGN OF THE SYSTEM

Based upon the findings of the existing system, an attempt is to be made on the design of the proposed system. This is, however, the major aim of this chapter. In designing a computerised savings accounting system in First Bank of Nigeria PLC, major considerations were based on information gathered and suggestions made for improvement. It is designed in such a way that basic savings accounting activities and generation of necessary reports are performed as effective as possible and in accordance with the need of the users.

However, this chapter intends to describe the software required and the logical design of the system given the users requirement. The logical design is considered in terms of output format, input format, database files design and the physical design of the system.

3.4 CHOICE OF SOFTWARE

The proposed system is expected to be designed using a database management package. The term "Database" refers to a body of stored information. In a database environment, a database management system is the software that manages and control data, determines data sharing and protects data from unauthorised access. There are various forms of database management softwares which includes dBASE, Clipper, Oracle, Informix, etc. Each of these were developed in version with a perfect forward linkage. For intance, the versions of dBASE are dBASE II, dBASE III, dBASE III

plus, dBASE IV, and dBASE V. Specifically, the proposed system is desired to be designed using dBASE IV.

3.5 FEATURES OF dBASE IV

Basically, the primary features of a dBASE IV are accuracy and intergrity of data, clarity and ease of use, controlled data redundancy, data independence, fast recovery procedure, powerful user language and privacy and security of data stored. In addition, dBASE IV allowed for designing database files using relational structures. The relational structures allows information to be stored in the form of a two dimensional table consisting of a number of rows and columns. Each row represents a record in the database file, and each column represents a field in the record of the database file. The major important of this is that it allows for easy retrieval of information from the file.

3.6 DESIGN OF INPUT FORM

As we attempt to fashion out a better and more efficient computerised savings accounting system, various forms are used in the course of operating this new system. These forms are designed to be used so as to attain the following objectives:

i. To produce a most effective method of input.

ii. To achieve the highest level of accuracy.

iii. To ensure that the input andoutput is acceptable to and understood by the users.

Basically, the above objectives were considered in designing the forms for the proposed system. In data entry, coding method, in which conditions, words, ideas or relationships are expressed by a code, are developed to reduce input and output task, control errors and speed the process. Therefore, with the coding system and these forms, fewer details are necessary in input without loss of information.

In addition, with these forms the input is designed to reject non existing codes and inappropriate data entered. This is further accompanied by a message which gives instructions to the entire users.

However, the input data into the system is the personal data of a customer and the amount being deposited or withdrawn which are contained in a source document. For example, if a new customer comes to the bank and opens account, the details of the customer are entered into the source document and based on the entries on this document, the user will key in the data into the system.

The necesary input forms from which data is extracted and fed into the system are New Account Form, Deposit Form, Withdrawal Form, and Transfer Form.

3.6.1 NEW ACCOUNT FORM

When a savings account is opened by a customer, the personal data of the customer is extracted on this new account form, which has on it the followin details:

* Account number
* Customer's Name
* Office adress

* House adress
* Date of Birth
* Sex
* Occupation
* Account Status Code
* Account Class Code
* Initial Deposit
* Passbook No.
* Intial Deposit

3.6.2 DEPOSIT FORM

This form is used by the customer to enter the details of their deposit at any point in time. It contains thefollowing details:

* Account Number
* Customers Name or Signature
* Amount deposited (both in figures & Words)
* Passbook Number.

3.6.3 WITHDRAWAL FORM

This is similar to the deposit form only that it is filled by the customers to enter the details of their withdrawals. It contains the following informations:

* Account Number
* Customers Name or Signature
* Amount withdrawn (both in figures & Words)
* Passbook Number.

3.6.4 TRANSFER FORM

The tranfer form is used by the customers to transfer money in and out of their accounts. It has the following details:

* Account number
* Customer's Name
* Type of Transfer (In or Out)
* Name of Transfer or Transferee.
* Amount of Transfer.

3.7 OUTPUT SPECIFICATION

Output refers to the results that are generated by a system. The output from a computer system is required primarily to communicate the results of processing to users or other system or more importantly to provide a permanent (hard) copy of these results for consultation. The output required by the proposed system are hard copy reports. The design of the reports begins by the identification of the output the system must produce. It is as a result of this that in designing the reports, the needs of the users were fully considered.

Specifically, the various reports that need to be generated from the proposed system are Transaction List, Full List, and Dormant list.

3.7.1 TRANSACTION LIST

This is the printout of the transactions posting. This is used for called over, that is, to check or tick against vouchers making sure that every account number and the amount on the input forms are correctly picked and posted to their various accounts. Also, in the course of calling over the transaction list against the vouchers, all other abnormalities like wrong dates are observed.

3.7.2 FULL LIST

This is the list that shows the whole accounts in the system with their numbers, names, date of last operation, and the balances. This is usually produced on the last working day of the week. This can usually be fallen back on, when there is a system break down. This also displays the total accounts in the system.

3.7.3 DORMANT LIST

The dormant list shows the list of inactive accounts, that is, accounts that have no transactions for sometime. Accounts that have no transaction up to a period of six months are usually marked dormant.

3.8 DATABASE FILES DESIGN

As stated above, the proposed system is developed in dBASE IV. This will require creation of database files which will serve as storage for data that are needed to be processed and those that serve as the results of processing for the sake of convenience and efficiency. The proposed computerised savings account in First Bank PLC will require four database files namely, MASTER.DBF, STATUS.DBF, CLASS.DBF, and DAILY.DBF. The description of the contents and structures of each of the database files are stated as follows:

3.8.1 MASTER.DBF

This is a file that contains the details of all the customers and their balances at any point in time. The structure of this file is as shown below:

S/NO	FIELD NAME	FIELD TYPE	WIDTH	DEC
1.	ANUMB	CHARACTER	7	
2.	CNAME	CHARACTER	35	
3.	ADDR1	CHARACTER	40	
4.	ADDR2	CHARACTER	40	
5.	DOB	DATE	8	
6.	SEX	CHARACTER	1	
7.	OCC	CHARACTER	15	
8.	DAC	DATE	15	
9.	ASC	CHARACTER	1	
10.	ACC	CHARACTER	1	

11.	IDEP	NUMERIC	10	2
12.	PB	CHARACTER	9	
13.	BAL	NUMERIC	13	2
14.	SBAL	NUMERIC	13	2
15.	DLO	DATE	8	

3.8.2 STATUS.DBF

This is a reference file which contains the various accounts status that a customer may have and their respective codes. The structure of this file is as stated below:

S/NO	FIELD NAME	FIELD TYPE	WIDTH	DEC
1.	CODE	CHARACTER	1	
2.	DESC	CHARACTER	17	

3.8.3 CLASS.DBF

This is a file that contains the various account classes such as personal, joint, society, etc that an account could be and their respective codes. The format of this file is as described below:

S/NO	FIELD NAME	FIELD TYPE	WIDTH	DEC
1.	CODE	CHARACTER	1	
2.	DESC	CHARACTER	17	

3.8.4 DAILY DBF

This is a file that will contain the daily transactions of customers. That is, all the transactions that occur within a particular date, be it a transfer, deposit or withdrawal will be entered in the file. The structure of this file is as shown below:

S/NO	FIELD NAME	FIELD TYPE	WIDTH	DEC
1.	DATE	DATE	8	
2.	ANUM	CHARACTER	7	
3.	CNAME	CHARACTER	30	
4.	CBAL.	NUMERIC	13	2
5.	DR	NUMERIC	13	2
6.	CR	NUMERIC	13	2
7.	NBAL	NUMERIC	13	2

3.9 COST ANALYSIS

In order to determine the cost of operating under the existing system, it is necessary to recognise the various ways in which costs may be incurred. Costs incurred are usually in the following categories:

a. **DEVELOPMENT COST**

i. Computer hardware

3 IBM Computers with the following configuration:
Pentium 133 Mhz
16 MB RAM
2.1 GB Hard Disk
SVGA Monitor @ ₦160,000 each = ₦480,000

UPS

3 UPS (250 volts) @ ₦65,000 each	=	₦195,000

COMPUTER PRINTERS

1 LaserJet Printer (Laser 4 Plus)	=	₦150,000
1 Epson Printer (LQ 2170)	=	₦70,000

ii.	Installation cost	=	₦25,000
iii.	Personnel Training - 3 operators @ ₦8,000.00 per month for 2 months	=	₦25,000
	TOTAL DEVELOPMENT COST		₦968,000

2. **SYSTEM OPERATING COST**

i.	Program maintenance 1 programmer @ ₦5,000.00 per month for 1 year	=	₦60,000.00
ii.	Installation of Air conditioner	=	₦25,000.00
iii.	Utilities (Light)	=	₦15,000.00
iv.	Supplies of computer papers and other consumables	=	₦15,000.00
v.	Labour cost - 2 Computer Operators @ ₦2,000 per month per operator for 1 year	=	₦48,000.00
vi.	Miscellaneous expenses	=	₦15,000.00
	TOTAL SYSTEM OPERATING COST		₦178,000.00

OVERALL TOTAL COST = ₦1,146,000.00

3.10 BENEFIT OF THE PROPOSED SYSTEM

Specifically First Bank of Nigeria PLC would derive the following benefits from this newly designed system:

i. Enhance the efficient operation of the savings account unit of the bank.

ii. Creation of speedy savings accounting processing and generation of necessary reports.

iii. Avoidance of constant problems as being experienced with the existing system.

iv. Provision of automated procedures especially in terms of computations that is required during data entry.

v. Maintenance of data security.

vi. Allow for carrying out major changes in the design of the system since the new system is fully documented.

vii. The introduction of some procedures within the new system reduces the task of the users as well as making provision for the facility required by the system.

viii. Efficiency and improvement in customer relations as a result of more timely and accurate information.

ix. Enhancement of the competitive ability of First Bank Nigeria PLC in the banking industry.

x. Backups can be taken and stored somewhere as something to fall back on incase of any problem and this is provided for in the proposed system.

CHAPTER FOUR

4.0 SYSTEM IMPLEMENTATION AND DEVELOPMENT

4.1 HARDWARE CONFIGURATION

Hardware can be defined as the physical part of the computer system which constitutes the mechanical, magnetic, electrical and electronic devices. Hardware configuration is a collection of hardware which forms a complete computer system. The selection of this configuration is always done to meet up with both the needs of the system as well as that of the organisation. Furthermore, in making the selection, one needs to consider the future changes in the organisation in terms of memory and speed.

Given the above, the proposed system is designed to run on an IBM PC and IBM compatible microcomputers with microprocessor of 486 Mhz (megahartz) and above. The computer is expected to have a hard disk of about 850 MB (megabytes) or more. This is needed against future changes in the organisation. The primary memory (RAM capacity) of the computer is expected to be of 8 MB and above. Other hardware require are computer printer and Uninterruted Power Supply (UPS). The required printers are LaserJet for good quality reports and Epson printer for the generation of hard copy reports from the proposed system. The recommended UPS

should be able to provide power for at least, 30 minutes incase of unexpected power failure.

4.2 SYSTEM TESTING

System testing is a key stage in system implementation. It involves the use of test data on the new system in order to ensure that the system works accurately and efficiently before live operation commences. At this stage, the logical and physical designs are thoroughly examined to ensure their workability. Therefore, the system test in implementation serves as a confirmation that all is correct and an opportunity to show the users that the system works as required.

However, the new system has been tested using some test data on all the modules of the system. At the end of the test, it was confirmed that it is working efficiently.

4.3 SYSTEM CONVERSION AND CHANGEOVER

Having confirmed above that the new system is working efficiently, there is need to carry out a file set up, file conversion and changeover. These are done to aid in the transformation of the existing system to the newly developed one.

In this computerised saving accounting system, the records of all the database files would be entered from the control center mode of dBASE IV with the APPEND command. The files were created and structured to meet the format required by the new system.

However, system conversion is not completed until the actual changeover from the existing system to the new system takes place. Changeover is the stage of moving over from the old system to the newly developed one. The changeover may be achieved in a number of ways namely - direct changeover, parallel running, pilot running and stage changeover.

Given the above four methods of changeover, parallel running is chosen for this system. This implies processing of current data by both the old and new system. Its main attraction is that the old system is kept alive and operational until the new system have been proved for at least one system cycle using live data in the real operational environment of place, people, equipment, and time. In addition, it gives an opportunity of comparing the results of the new system with the existing one before it is accepted by the users thereby promoting users' confidence.

4.4 POST IMPLEMENTATION REVIEW

After the system is implemented and conversion is completed, provisions need to be made for a review of the system. This has to do with the maintenance of the system against environmental changes which may affect either the computer or other parts of computer based system. This may lead to the improvement of system functions and correction of faults which may arise during the operation of the system.

Specifically, the objectives of the post implementation review is to:

i. Determine whether the system goals and objectives have been achieved.

ii. Determine whether customer procedures, operating activities, and other control have been improved.

iii. Determine whether user service requirements have been met while simultaneously reducing errors and costs.

iv. Determine whether known or unexpected limitations of the system needs attention.

However, the amendment procedure agreed upon with the use of the system is directly through the users. The users are expected to identify any problem areas or external requirement of the system. Based on this, the system will further be designed to meet the requirement.

4.5 DOCUMENTATION

This section contains the description of the workings of the system. It describes the mode of assessing the system and how the users would operate the system.

4.5.1 ASSESSING THE SYSTEM

This requires the execution of the steps listed below:

i. Change directory to dbase.

ii. Type DBASE and press ENTER key to activate the control center of dBASE IV.

iii. Press ESC key to go to the dot prompt.

iv. Type DO MAIN to activate the main menu of the system.

4.5.2 DESCRIPTION OF THE MENU STRUCTURE

The new system is made up of a main menu, which consists of five options. Namely:

- Customer Account
- Transaction Update
- Other Operations
- Reports
- Exit

At this main menu, the system will prompt you to enter the first letter of any of the available options to pick choice. The screen format of this menu is as shown in figure 1 in the appendix 1. However, each of the five menu are discussed in turn as follows:

i. CUSTOMER ACCOUNT:- This allows the user to update the customer's record or entry of new customer's details. On the selection of this menu, another level of option appears on the screen as shown in figure 2 (in aapendix 1) in which the user is expected to pick a choice. These options are CREATING NEW ACCOUNT for a new customer, MODIFYING ACCOUNT for changes needed for existing customers, VIEWING ACCOUNTS to have a

view of a customer's account details, DELETING ACCOUNTS to remove a customer's account from the file and finally EXIT to take you out of the submenu. The screen for each of these are as represented by figures 3 to 6 in appendix 1 respectively.

ii. **TRANSACTION UPDATE**:- This option, as displayed in Figure 7, allows you to update a customer's account balance. It has some options which include DEPOSIT, WITHDRAWAL, TRANSFER, and EXIT. The DEPOSIT option is used to update the customer's account whenever a deposit is made into the account. The WITHDRAWAL option is needed when a customer comes to withdraw from his account. The TRANSFER in the option is needed when money is to be transfered in or out of a customer's account. While the EXIT option takes you out of the submenu. These are represented on figures 8-10 respectively.

iii. **OTHER OPERATIONS**:- This is an option that contains other task that can be done or performed within the system. It has a submenu which are ACCOUNT STATUS, INTEREST CALCULATION, AND EXIT. The format of the submenu is as displayed in figure 11 respectively. Selecting ACCOUNT STATUS enables you to change the various status of a customer's account and the screen format is shown on figure 12. The INTEREST CALCULATION is used to calculate the interest of various customers. This is always performed

on the 15th day of every month. The EXIT in the submenu will take the user out of the menu.

iv **REPORTS**:- The report is used to generate the hard copy of whatever processing that must have taken place within the system. This new system is designed to generate three reports namely Transaction List, Full List, Dormant List. These options are contained in the report submenu and they are as shown in figure 13.

v. **EXIT**:- This is an option that closes down the system and take the user out completely.

CHAPTER FIVE

5.0 SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 SUMMARY

This project work was conceived based on the need to computerise the savings account operations of First Bank PLC. It was observed that the bank, for sometime now, has been facing some problems ranging from loss of customers' details to inaccurate retrieval of information. The problems identified have been highlighted in the earlier part of this project work. In the study, it is stated that all the existing problems will be controlled if and when a computerised procedure is installed for the organisation.

However, a computerised procedure cannot just be put in place without going through some stages of its development. The analysis of these procedures were examined and the result was considered in the design of the proposed system. The considerations of the design is both logical and physical for the necessary requirements. Given the design of the proposed system, the required environment for the system was also considered in terms of the computer configuration. The documentation which serves as the description of the new system was also described for the purpose of reference for the users.

5.2 RECOMMENDATIONS

Given the above benefits of the newly designed system, it is highly recommended that the hardware requirement for this new system as stated in the previous chapter be provided immediately. This will allow for immediate commencement of system conversion. Specifically, the required recommendations are as follows:-

Firstly, the use of computer in the organisation requires a review of the manpower presently available. Some staff like the typist will have to be trained to the use of WordProcessor and new staff will have to be employed. There is also need for the organisation to employ an in-house programmer who is fully knowledgeable about the concept of Database Management System. The programmer should be able to write programs in dBASE IV. This is to ensure future modification of the suite of programs that constitute this proposed system. However, the intending users of the new system, needs to be trained for about three weeks on the usage of the system.

In addition, for any computer based system, there is the need for security of data contained in the system in order to avoid both logical and physical problems. This would be achieved by controlling access to the system. In view of this, illega users should not be given any access into the computer room or use the computer.

Finally, there is need for the computer environment to be air-conditioned. The organisation should provide a good cooling facility for the computer so as to ensure the durability of the system.

However, it should be realised that the above recommendations need to be adopted in order to fully maximize the importance or a computer based system.

5.3 CONCLUSION

The installation of a computerised operation is undertaking because of the expected benefits. Most organisations that are fully computerised enjoy all these benefits. Added to this is the fact that the world is in the computer age and any organisation that wants to be relevant in the future need to be computerised. Similarly, a professional without a computer touch will not be considered relevant in the future.

Conclusively, the pursuance of the installation of this newly designed system needs to be absolute as all the procedures have been tested and confirmed efficient. Therefore, its application in the savings account operations will meet both the present and future needs of the savings accounting procedures in FIRST BANK OF NIG. PLC.

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