

**COMPUTERIZATION OF MONTHLY MARKET**

**REVENUE RECORDS**

**(A CASE STUDY OF SURU LOCAL GOVERNMENT,  
KEBBI STATE, 1990 – 2000)**

**BY**

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PGD/MCS/2000/2001/1049**

**DEPARTMENT OF MATHEMATICS/  
COMPUTER SCIENCE  
FEDERAL UNIVERSITY OF TECHNOLOGY,  
MINNA**

**APRIL, 2002**

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A PROJECT SUBMITTED TO THE DEPARTMENT OF  
MATHEMATICS/COMPUTER SCIENCE OF FEDERAL  
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FULFILMENT OF THE REQUIREMENTS FOR THE  
AWARD OF A POSTGRADUATE DIPLOMA IN  
COMPUTER SCIENCE.

APRIL, 2002

**APPROVAL PAGE**

This is to certify that this project is an original work undertaken by Suru Hassan Umar and has been prepared in accordance with the regulations governing the preparation and presentation of project in Federal University of Technology, Minna in partial fulfillment for the award of Post Graduate Diploma In Computer Science.

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## DECLARATION

I hereby declare that this research project was conducted solely by me under the supervision of Dr. Aiyesimi Y.M. of department of mathematics and computer science, Federal University of Technology, Minna.

## DEDICATION

I dedicate this research work to the Holy Prophet Muhammad (SAW), the world's greatest teacher.

## ACKNOWLEDGMENT

The task of undertaking and compiling a project work is by no means an easy job. In view of this, I wish to express my profound gratitude to all those who contributed in one way or the other to the success of this work.

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 BACKGROUND OF STUDY

Marketing includes a variety of activities relating to the distribution and sale of goods or services. Thus the market is an environment made for the exchange of goods and services while revenue is used to donate money or income raised by a government. The market can simply be seen as a place where goods are sold or services are exchanged, and revenue can be amount money generated by the government as paid for the use of government - supplied amenities.

From this point of view, it is easily observe that the market\* plays a significant role in government revenue generation. This is because government built and supplies amenities to the markets in exchange for revenue. Such amenities includes provision of market stalls, lock-up shops slaughter slaps or abattoirs as well as load – stations, or motor parks for easy conveyance of market produce. The term market revenue is therefore used to denote revenue sourced by the government through the supply and maintenance of infrastructure and equipment essential to the efficient use of markets.

Thus, like all other local government councils in the country, Suru local government, Kebbi state depends largely on its markets as a tool for revenue generation. This project thus examines how the local government realizes revenue through its markets, the problems associated with market revenue generation and how market revenue contributes to the overall development of the local government.

## **1.2 OBJECTIVE OF THE STUDY**

The aim of this research work is to carefully examine the methods and policies governing the acquisition of market-oriented revenue in Suru local government, the problems associated such methods and policies as well as the old method of record keeping and to come up with superior alternatives. The aim is to provide a computerized system to supplement or change the existing system. It includes an observation on the methods used in revenue collection, as well as the recording and compilation of revenue documents. It also examines the up keeping and updating of revenue books. The main goals can be outlined as follows:

1. To examine the strengths and weaknesses of the methods and policies governing market revenue collection as well as market revenue record keeping and updating.
2. To provide useful suggestions which could assist in increasing the market revenue generation capacity of the local government.
3. To develop a computerized system of monthly market revenue record keeping and updating for the local government.

## **1.3 SIGNIFICANCE OF STUDY**

There is no government that can function efficiently without adequate funding. Funds are used by the local government for the day-to-day running of its activities. This include the provision of good roads, water supply, electricity and good health care facility for the populace. Funds are also used for the payment of workers salaries, maintenance of government vehicles as well as procurement of office equipment among other things.

It is well-known that the federal allocation to local governments is not enough to cater for the numerous demands of the electorate as well as in running the affairs of local government. This simply means that the strength of revenue generation machinery of a local government goes a long way in determining the financial strength of that local government. For this reason the local government has to put a lot of effort and carefully planning in order to boost its revenue generation capacity to be able to meet the demands of its populace.

The project is significant to both the administration and staff of the local government as it aims at identifying areas that need to be reassessed by the local government administration in its revenue generation drive and suggest better method that could enhance market revenue generation in the area. The project even goes to discuss some factors peculiar to the environment such as natural barriers which could hinder the efficient utilization of markets and come up with suggestions on how the effects could be minimized.

The project then provides a computerized alternative to bypass the tiresome and unreliable manual method of record keeping and updating which is presently in use. This system provides faster access to files which in turn aids decision making. It also ensures greater file security and productivity.

#### **1.4 SCOPE AND LIMITATIONS OF STUDY**

Revenue generation in any governmental setup is an extremely wide area to explore. Local governments for example have a wide variety of areas through which revenue is sourced in order to keep the system functional. This is because in every department there are sections equipped with various

programmes which are used as either direct or indirect sources of revenue for the local government.

Due to this reason, the project is mainly restricted to deal with revenue generated through market sources, although data from some sources that are not directly connected to the open markets but related to them have been incorporated with the market records for integrity and ease of work. This include among others, the revenue generated from motor parks which serve as load stations for market goods, revenue from hired shops whose payment is done either once in a year or after specific number of months, and revenue generated from the use of slaughter slabs. Data collected through such sources for a year is averaged and added to monthly records to give an overall monthly total for each month.

## **1.5 METHODOLOGY**

In a project of this nature, detailed fact finding is required in order to know the exact way the whole system works and to obtain ideas on how to develop a more efficient system. The primary sources of data used in this research work include information sourced from oral interviews with revenue officials of the local government, other related staff and the local government chairman. It also involves the intensive use of compiled and documented revenue reports and the local government revenue books. A careful observation of some of the processes involved was also employed. Secondary sources of data include among others, the review of related literature of various authors, encyclopaedia, dictionaries, magazines as well as organization manuals. It also contains abstracts from students' lecture notes and lecture

handouts. All these were tactically combined to form the main body of the project write-up.

## **1.6 FEATURES**

The project has been divided into five chapters. The different chapters are organized by the use of headings and sub-headings such that related information could be conveniently grouped under the various chapters. This is to enhance the clarity and analysis of the project.

The first chapter, which is the introduction, explains in detail the historical background of the research work, its objectives, its scope and its limitations as well as its significance. The chapter also explains the work methodology, that is the method employed in the collection and compilation of data relevant to the project work. The chapter goes further to explain the features of the project, that is the way the project has been arranged. This explains the sub-divisions of the project work into five different chapters with each chapter expatiating on an aspect of the project work. A definition of some of the major terms used in the project is also given at the end of this chapter. The second chapter which comprises mainly of the literature review is set to explain the methods by which market-oriented revenue is sourced in the local government, and analyze the problems associated with these methods. The chapter starts by explaining the location of the local government and its markets. In this it explained the type of the local products available in the markets as well as the market relative sizes and capacities. It goes further to explain the main procedures involved in market revenue collection, the type and functions of revenue books and a brief explanation on other sources of

revenue apart from the markets used by the local government. The chapter also explains how revenue records are updated as well as how the revenue is effectively utilized. It goes further to explain the physical and administrative factors which bring about major setbacks in revenue generation and suggest some ways of possible improvement.

The third chapter deals with the system analysis and design. The chapter analyzes and explains the present system in use and aims at providing a superior computerized alternative which will bypass the problems encountered in using the present system. The chapter explains the process involved in carrying out a detailed feasibility study of the proposed system. This involves determining economic feasibility, technical feasibility as well as operational feasibility of the proposed system. The economic feasibility involves a cost-benefit analysis of the proposed system to determine whether it is economically worthwhile for the organization to expend on the proposed system or not. The operational and technical feasibility determine whether the organization has or can acquire technical and operational staff to man the new system. The chapter then explores the methods of investigation used in developing the new system, a review of the old system was used to develop ideas on how to set towards developing a more reliable system. An explanation of the problems of the old system is given in this chapter, this is aimed at analyzing the weaknesses of the old as opposed to the proposed system. This is followed by a discussion of the system analysis and design of the proposed system. The chapter also outlines the input specifications and output specification of the proposed system. Lastly, the chapter discussed the

methods of file conversion and changeover in which a reliable form of changeover was adopted for the new system.

The fourth chapter deals with software development and implementation. This is where the actual program write-up procedures are discussed. The chapter discusses file design, the choice of software package and programming language used and how the program will be properly implemented. It also discussed the reasons behind the choice of the programming language that is, its features. It then explains program and programming in which it discussed the writing and evaluation of the computer program and its implementation.

The last chapter, which is chapter five, discusses the result of program implementation. The chapter also gives recommendation and a conclusion on the entire project. This is followed by a list of references.

## 1.7 DEFINITION OF MAJOR TERMS

**Computer** – A programmable electronic device that can store, retrieve and manipulate data, for purpose limited only by creativity of individuals who use it.

**Data:-** This comprises of raw facts or statistics to be used for certain operations or calculations.

**Information:-** It comprises of already processed data

**Data processing:-** It is the term given to the process of collecting all times of source data together and converting them into information.

**Input:-** Data to be fed into the computer system.

**Output:-** Information to be retrieved from the computer system.

**Program:-** A set of instructions written in a programming language fed into a computer system for it to carry out a particular objective.

**Software:-** A group of interrelated programs.

**Hardware:-** Comprises the physical components of a computer system.

**Booting:-** The process of starting up a computer.

**Bug:-** An error in the execution of a computer program

**Debugging:-** The process of identifying and correcting program errors.

**C.P.U.:-** The Central Processing Unit is the part of a computer system that handles the actual processing of data into information.

**File:-** A collection of records that have the same address, where the user can attach a name.

**Flowchart:-** It is a diagrammatic representation of the steps involved in the execution of a program.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 LOCATION

Suru Local Government was created in 1991. Being carved out of the old Bunza Local Government, the Local Government is bounded in the east by Maiyama Local Government, in the West by Bagudo Local Government, and in the North and South by the Bunza and Koko/Besse Local Governments respectively.

The Local Government has an estimated population of about seven hundred thousand people distributed between about eighty settlements over an area covering between two hundred and fifty and three hundred square kilometers. The vast land is mostly composed of fertile farmland and an extensive fadama (a flood plain) intensively used for rice cultivation. The major occupations of the natives of the land are farming, fishing and trading, although some indigenous industry such as blacksmithing, tool carving and pottery are still very active in some locations.

#### 2.2 THE MARKETS

The occupation of the indigenes of the Local Government has contributed enormously in developing the markets and giving them an important position in the daily activity of the entire Local Government. The Local Government has four important markets which comprise of the Suru market, the Dakingari market, the Aljannare market and the Bandan market. The Suru market is the largest and most important while the Bandan market is

the smallest and least important. The importance of a market is much determined by its locations and the type local products made available. The Suru market is remarkable for its supply of different varieties of fish throughout the year. Being the largest, the market has a capacity for about three thousand people with an expanse of about twenty thousand square meters. The market has fifty five lock-up shops and thirty two lines which give rise to about three hundred and fifty open stalls. Like all the other markets, the market is subdivided into sections to ease trading and to reduce congestion. The sections include the central market, the butchers section, the animal market, the produce market, the poultry and fish markets among others. The central market which comprises mainly of the central open stalls is further subdivided into subsection as with some other sections. This further subdivision allows for better accessibility as the buyer always knows what he needs and where exactly he can get it. Almost all the markets operate on weekly bases and the market days usually witness a large amount of buyers and sellers from both within and outside the community. This is more during the dry season as it gives room for better accessibility. Merchants from the eastern and western parts of the country patronize the market throughout the year conveying lorry loads of farm produce, fish and animals to very distant locations.

Rice and fish are the most important products of the Suru and Bandan markets, while the most important products in the Dakingari and Aljannare markets are cattle, guinea corn and millet. Onion is an important product of the Suru community, but is usually conveyed directly to the large onion markets in Sokoto state. The local markets have many things in common,

ranging from the market layout to the generality of local products made available for sale.

Almost all the markets are directly attached to motor parks which serve as load stations for the market products. In some cases revenue is sourced from the motor park independently from that of market, while in other cases both the motor park and market are operated under the supervision of the market secretary.

### **2.3 MARKET REVENUE COLLECTION**

The market secretary is a staff of the Local Government responsible for the collection of the entire revenue of a particular market, and sometimes with the attached motor park, if the motor park serves as load station for market produce. He acts as a general overseer to revenue collectors allocated to the different sections of the market and is responsible directly to the revenue officer on all matters concerning the generation of revenue in the market. On any given market day, it is the responsibility of the concerned market secretary to request for market revenue receipt booklets, collect and distribute such receipt booklets to revenue collectors through a predefined process.

The market secretary sends a hand written application for revenue receipts, motor park receipts and departmental receipts to the revenue officer who approves and forwards it to the finance department store. The store officer then files the request and supplies the requested items to the market secretary. He then enters the number of receipt booklets as well as the number of the first and last receipt sheets supplied into his records (ledger) for future reference. The store officer keeps record of all items concerning the finance

department, he makes sure that all such supplies are well recorded whenever they are made.

The market secretary then distributes the receipt booklets to revenue collectors who will ensure efficient revenue collection at the different sections of the market as well as the motor park if included. Each revenue collector records the number of receipt booklets issued to him by the market secretary. Market revenue collection is mostly done once a week, that is on market days, except for departmental receipts that are issued either once a year or after a given number of months.

Departmental receipts are issued on rentage of local government property, they are issued from any department on revenue generation terms. In the finance department, departmental receipts are issued to whole sellers who market in large quantities of items as sales licenses to operate for a specific period. They are also issued on the use of lock-up shops for a period determined by the amount of money paid or the purpose for which the receipt was issued. In the finance department, departmental receipts are taken care of by a committee set up from the local government treasury to cater for revenue generation over a lengthy period of time.

Every receipt booklet contains one hundred elongated receipt sheets parts of which are torn off and issued as the originals, while the small pieces left behind are the counterfoils. It is these counterfoils together with unused booklets that are submitted by the revenue collectors to their market secretaries after the day's work together with the amount collected. The market secretary returns all counterfoils and unused booklets to the Revenue Officer for checking accompanied by either the total amount generated or the figures of

the amount generated which he may have banked earlier. After the checking, the market secretary returns all used and unused booklets to the store where they are lodged after due authentication by the store officer.

#### **2.4 OTHER SOURCES OF REVENUE**

Almost every department in the local government has an ability of generating some form of revenue. The manner in which the revenue can be best be procured is defined by the departmental heads. This is usually done bearing in mind the cost and benefit of establishing the project. A very good example is the tractors procured and hired out by the local governments Agric Department. The tractor driver issued receipt of payment to customers for whatever jobs they do and return the generated money to the departmental head who transfers the money to the local government treasury. The Agric department also issues departmental receipt to butchers on the use of slaughter slabs and to cattle dealers marketing large quantities of cattle. In this case there is a fixed amount for every lorry load of cattle leaving the load station regardless of the numbers of cattle it contains.

The works department hires out graders, bulldozers and other machines supplied by the local government for its works and for revenue generation. The machinery is hired out in a similar way as the tractors in the Agric department. Departmental receipts are generally used, except for when the machines are hired on long term basis and this takes the form of an agreement.

The mass transit scheme is another very active revenue generation tool. This consists of a set of vehicles purchased by the local government under the finance department exclusively for revenue generation. In this scheme the

drivers move around with their own bank tellers and lodge whatever they make directly into the local government mass transit account. The scheme assures a constant and high supply of revenue to the local government.

## 2.5 TYPES AND FUNCTIONS OF REVENUE BOOKS

1.1 THE MARKET COLLECTOR'S BOOK: This book is also called the revenue collector's cash book and is kept by the revenue officer. Every market has a market collector's book, and it is in this book that all the revenue collected for that market for every given week is entered. It contains the number of receipt booklets as well as the numbers of the first and last sheet used in every receipt booklet by the revenue collectors for that week. If the receipt numbers are in sequence for all the receipts booklets used, only the first and last numbers are recorded. The book also contains the exact figure of the amount of revenue collected in that market for that week. If such money was taken to the local governments treasury and not the bank, the book contains the original copy of the treasury receipt indicating the collection of such money issued by the local government cashier. This is attached in the page containing the entry made indicating the collection made for that week. The cashier then goes to record the amount on the debit side of the local government's cashbook. If the revenue officer had deposited the amount directly into the local government revenue account, he takes the bank teller to the cashier who issues him a treasury receipt to be attached on the page indicating the collection in the market collectors

book. The cashier then attaches the bank teller to the duplicate of the treasury receipt, which, he keeps in the treasury for record purposes.

It is important to note that in the market collector's book entries are made page by page. Each page contains information on the revenue collected for a particular week - that is, for a particular market day, or as the case may be.

## **1.2 DAILY ABSTRACTS OF REVENUE**

This is a single book that deals with the daily transaction of revenue in the local government. It contains revenue receipts from the cashier's office carrying the head to which the payment belongs. It contains entries on generated revenue from all the markets and all other sources. The book is divided into sections each section containing record for a given head. The heads and sub-heads are outlined in the local government budget report. The heads consist of the numbers 1001 to 1009, some of which have subheads. For example 1001 is the head for community tax. It has two subheads, the subhead 1001 (1) is for community tax, while; 1001 (2) is for cattle tax. This head mainly consists of the revenue generated by the district heads.

The numbers 1001 to 1008 are the heads for revenue, although 1007 is the head for Value Added Tax (VAT) while 1009 is the head for allocation. Some of the heads include 1002 for rate, 1003 for general local licenses which have many subheads, while 1004 is the head for commercial undertakings, this includes the revenue sourced from the markets, the mass transit scheme, and lock-up shops among others. The book is kept by the Local Government Revenue Officer.

### **1.3 MONTHLY ABSTRACTS OF REVENUE**

This is another book kept by the local government revenue officer. This book contains record of what is more or less a monthly summary of the contents of the daily abstracts of revenue. The book contains the monthly collection of the amounts, and numbers of all the receipts that have been recorded in the daily abstracts of revenue for a given month. The monthly transaction for each head is calculated and entered into the relevant sections of this book.

### **1.4 HARAJI OR COMMUNITY TAX REVENUE BOOK**

This book is kept by the District Head. As the name implies, the book is a record book of personal tax paid by members of the community. It contains a record of all community tax collected within a given a year. This consists of the numbers of receipts and receipt booklets issued to individuals within that year. The money is usually collected by the village scribe and usually handed directly to the local government cashier on the authority of the District Head. The cashier issues a treasury receipt of the payment to the village scribe. If the money has been deposited in a bank, the cashier attaches a copy of the bank teller to the duplicate copy of the treasury receipt, this he uses in entering the record into treasury books.

### **1.5 JANGALI OR CATTLE TAX REVENUE BOOK**

This is another book kept by the District Head. It is a ledger, which contains the record of all the cattle tax collected throughout the year. Its

records are much like those of the community tax record book, and the revenue generated is also treated in a similar manner as that recorded in the community tax record book.

Although both the community tax and cattle tax are assumed to be part of the local government's revenue sources, community and cattle tax revenue is not usually wholly used by the local government council. Infact the money is usually submitted to the state department for the local government and chieftaincy affairs and only by a request forwarded to the department by the revenue officer is a fraction of the amount given to the local government.

## **2.6 KEEPING AND UPDATING REVENUE BOOKS**

All local government's revenue books apart from those kept by the district heads are kept by the local government's revenue officer. Important revenue records are kept in files together with the revenue books in a metal cabinet under lock and key. The updating and maintenance of records and books is handed exclusively either by the Local Government Revenue Officer or his assistant. The Revenue Officer ensures that the recording and compilation of any important information or data is done immediately the information becomes available. It is only the Revenue Officer or his assistant that can retrieve any revenue record, book or receipt once such items has been properly filed into relevant files.

## **2.7 REVENUE UTILIZATION**

Revenue generated is either transferred into local government's treasury or deposited into the local government's revenue account in which case as time

goes on it is recycled into the local government treasury. The revenue is either used in the daily running of the local government such as the maintenance and fuelling of vehicles, and purchasing of office stationery or for bigger projects such as the payment of the workers salaries, purchasing of machinery or construction of important infrastructure. The purpose for or the way and manner in which the generated revenue is utilized is usually decided upon by the local government council. Utilization of generated revenue can take any form based on the local government's preference.

## 2.8 PROBLEMS OF REVENUE GENERATION

Due to the geographical position of both the local government and the markets, the types of local products available and the occupations of both the indigenes and the market users, a number of factors militate against efficient use of the markets for revenue generation. Some of such factors are:

1. **Seasons:-** Most of the local products are seasonal or at least their supply fluctuates across the various seasons. Fish as an example is mostly abundant immediately after the rains and the supply continues to shorten across the year. The factor makes part of the market business only seasonal. Another seasonal problem is that immediately it is rainy season, most farmers turn to their farmlands. This lowers the market turnout as some of the farmers engage in trading as a secondary occupation.
2. **Market Days:** Being that people come together to buy and sell only on specific days in every week makes the main part of the market remain idle throughout the week. This factor allows for a redundancy of the

- infrastructure, equipment and personnel during this period. This results in a lowered productivity of the market.
3. **Seasonal drift:-** After each harvest period, the year usually witnesses an exodus of potential and active traders. This is because people use the rest of the year as travel period with a number of them going for other occupations elsewhere as against the next planting season. Active fishermen travel with their fishing equipment to larger waters where the fishing business thrives more and from where they could await the next planting season. The Fulani travel down south in search of grazing fields for their cattle. This in turn lowers the supply of cattle and their products to the markets. Generally, seasonal drift largely affects the market turn out thereby lowering revenue most especially the revenue sourced from motor parks and load stations.
  4. **Growing population:-** The growing population of people who patronize the markets coupled with the fact that the markets are not regularly expanded accelerates the congestion of goods and people. This tightens the space between the stalls and narrows the passages, making movement within the markets very difficult especially during certain periods. This makes some businesses operate outside the walls of the market, making revenue collection more difficult.
  5. **Accessibility:-** The presence of the flood plain has made some markets not easily accessible to traders from other parts of the local government and state. This is made more difficult especially during the rainy season. The lack of accessibility caused by this natural barrier has had a tremendous effect on the growth of some of the markets.

6. **Untrained staff:-** Lack of efficient staff training on revenue collection and revenue record keeping is a factor which militates against efficient revenue collection and record keeping. This has also brought about a lack of good interpersonal relationship between the revenue collectors and traders. This has made the traders develop a negative attitude towards the revenue officials.
7. **Weak policies:** As changes are experienced in the day to day running of activities due to modernization, the way and manner in which such things should be run also needs to be changed. Weak policies and policies, that in one way or the other affect the performances of the markets need either to be changed or modified. This will go a long way in ensuring that a market keeps up with the trends of modern development

## 2.9 REVENUE IMPROVEMENT

A need for a yearly increase in revenue becomes necessary due to yearly increase in budget. Yearly increase in budget becomes necessary due to inflationary trends or currency devaluation. Over the years the local government has put in place many reforms to aid its revenue generation, but there is still room for further improvement.

The mass transit scheme which is the most virile revenue generation machinery has received a lot of attention and improvement ever since its introduction. This scheme has witnessed the supply of new vehicles and a repair of old ones. To improve their performances, the maintenance of these

vehicles should be timely. The vehicles should be regularly checked and serviced to avoid accidental breakdown and increase productivity.

The construction of new lock-up shops has given a good start to the modernization of the markets. This will assist in doing away with the old and dilapidated structures and also assist in managing market space. More stalls and lock-up shops need to be constructed, as this will ensure an efficient planning of the market space. The market themselves need regular expansion in order to cope with their growing population.

The local government has supplied canoes on rentage and hire purchase to people living in villages with poor accessibility and for its fishing population. This need to be improved as the problem of a accessibility is a mighty hindrance to the performance of the markets. Moreover the local government should strive in the construction of seasonal roads which will assist in good transportation especially during the dry season.

The increase on the prices of the market, Motor Park and departmental receipts also assists in the increment of revenue, although if not properly planned, this may have a negative effect on the markets. The introduction of separate revenue for some items formally incorporated into the market such as the cattle dealers and slaughter slabs has also assisted in revenue collection control.

One important area in which the local government need a lot of commendation is the supply of farm machinery and other equipment for hiring such as tractors, graders, and bulldozers. This area has had a tremendous boost on the local government revenue strength. A regular maintenance of such machinery will always assist in ensuring better productivity.

The local government needs to invest especially in the manufacture of items needing locally sourced raw materials. This will improve the market value of the goods and enhance their trading. This will in turn ensure better revenue generation due to increase in trading population. Other areas which need to be improved include the training of revenue officials and improvement of market policies most especially as it relates to market days. There should more market days to improve the productivity of the markets.

## CHAPTER THREE

### SYSTEM ANALYSIS

#### 3.1 ESSENCE OF SYSTEM ANALYSIS

Management must continuously select methods of procedure. Ways of doing things change. System change needs change. Paperwork, record, report proliferate. As a business grows, so does its needs.

When should a company utilize computer technology? If a decision is made to buy computers, exactly what type of system should be used? If an expert is needed to help in the selection, how is this expert to be selected?

None of these questions contain simple answers, and the wrong move could indeed be costly. However if those in charge make the proper selection, they can move along through critical decision with far greater economy and security than merely leaving things to change.

What can a management do when it feels expansion factors suggest that the time has come to look in computer technology? If they are not now using a computer system where do they start?

Another question should be carefully explored: Is the present system able to keep up with today's volume of work? Is it able to produce all needed reports? Will it be able to maintain deadline and schedule a year from now if work factors continue to expand?

A study of the system now in use could be worked out meaningfully since the management is dealing with facts that are available to them. However since a study relating to new system can be quite complex, the skill of a good consultant can be appreciated here. Competently projecting the cost of the present system to that of a computer system requires skill and

experienced based on an overall knowledge of computer systems and what they can do. This is the basic essence of system analysis.

### **3.2 DEFINITION**

System analysis is the term referring to that branch of organization and methods which is specifically related to the application of computers. System analysis is defined as the methods of determining how best to use computer with other resources to perform task, which meet the information needs of an organization.

### **3.3 METHODS OF INVESTIGATION**

In designing a new system, detail fact finding is required. The aim is to find out exactly the way and manner operations are carried out in the existing system. The following methods were used in carrying out the investigation:

#### **i. Record inspection**

This involves going through the existing records used in the operation. It involves the study of organization charts, procedure manuals and statistics, which reveal useful information about a procedure. This assists us to see how data is managed; the data entry formats and how data is processed within the section.

#### **ii. Observation**

Observation involves watching an operation for a period to see for oneself exactly what happens and how it is carried out. Careful observation needs to be carried out to be able to understand some procedures.

### iii. Interviews

Interviews are vital tools in any fact-finding exercise. Oral interviews involve having discussion with staff to be able to obtain useful information about the existing systems. Interviews provide a very straight-forward and efficient means of obtaining qualitative information.

### 3.4 FEASIBILITY STUDY

In a project of this nature, detailed feasibility study needs to be carry out. In this project, the analyst carried out a feasibility study in collaboration with some of the management staff of the organization. This is done to determine the possibility of computerizing the existing manual system of monthly market revenue record keeping and updating. Generally, a feasibility study to determines the feasibility of a computerized system. It is done by analyzing the proposed (or computerized) system as against the existing (or manual) system in order to determine the possibility of adopting the proposed (or computerized) alternative. Feasibility study involves determining three things:

- i. ***Economic feasibility:-*** This involves determining whether it is economical worthwhile to invest on the proposed system. It includes the determination of costs and benefits of adopting the proposed system.
- ii. ***Technical feasibility:-*** This involves determining whether or not the organization can supply adequate technical staff to support the new system.

- iii. **Operational feasibility:-** This involves determining whether or not the organization can supply adequate operational staff to support the new system.

### 3.5 REVIEW OF OLD SYSTEM

In the old (manual) system of monthly market revenue record keeping and updating in Suru Local Government, Kebbi State, all records were entered manually. Updating of existing record files was also done manually. Although operations within the revenue office were mostly manual, a considerable amount of data security measures were practiced. For example, it was ensured that all revenue files were kept under lock and key, and that only the revenue office or its assistant could either enter new record or updating existing one in any revenue file. Staff from outside the revenue section were also not allowed to participate the processing and transfer of the revenue books, files and reports.

### 3.6 PROBLEMS OF MANUAL SYSTEM

In analyzing the present (manual) system, a number of observations were made which exposed the weaknesses of the manual system. They include:

- i. **Illegible Entries:-** Due to disparity in handwriting and/or fatigue, due to rigorous manual calculations, numeric entries are sometimes not legible. Moreover, paper kept over a long period of time tends to wear out, the record written on it also tends to become illegible.
- ii. **Missing entries:-** For one reason or the other, especially in dealing with large volume of data, entries in some records are found to be missing.

Missing entries can only be obtained by retracing source documents from which such missing data could be obtained. This is indeed a rigorous and time consuming processing.

- iii. *Illogical or unlikely entries:-* Due to human fallibility, it is always likely that manually input numerical data may contain wrong entries. When such entries are far different in relation to other entries in the same record they may become illogical or unlikely and can be easily detected. The correction process is usually rigorous as it involves retracing source documents from which such data could be obtained.
- iv. *Misplacement of record:-* For many reasons, as files are handled between different procedures or as they are transferred from one locations to another, entire record sheets may be misplaced. As in all other cases earlier mentioned, such information can only be retrieved by retracing source documents from which such data could be obtained.
- v. *No back-up facility:-* As there is no back-up facility a loss of any record may mean total loss of the information it contains. Moreover, almost all revenue records are kept in file cabinet under lock and key within the same compartment. In case of any accident fire outbreaks, all the files will be burnt down and all the information automatically lost. In such a case, there is no possibility for any recovery since there are no file outside the building from which the information could be sourced.
- vi. *Slow retrieval:-* In the manual system of record keeping, retrieval of information is usually very slow. It usual takes a relatively long period of time to retrieve information through manual procedure.

- vii. *Slow data entries:-* With the manual system, data entry is mostly very slow and rigorous. This becomes clearly visible especially in dealing with large volumes of data. Manual calculation contributes a great deal to poor data entry.
- viii. *Inefficient data security:-* Despite the numerous security measures taken to ensure security of data and information, the tendency of unauthorized persons getting access to data files cannot be abolished. This is a very serious issue considering that revenue generation constitutes a vital part of a local government secret.

### 3.7 SYSTEM ANALYSIS

It has been concluded from the feasibility study that the inefficiency of the revenue section where revenue data are kept can be solved through computerization. The introduction of computer into record keeping will ensure a faster and more efficient performance. Some of the general objectives of the proposed computerization are as follows:-

- eliminating redundant data as much as possible
- integrating existing files
- share data among users
- incorporate changes easily and quickly
- lower the cost of storage and retrieval of records
- improving accuracy and consistency
- providing data security

Computerization also ensures efficient updating, deleting, adding as well as amending of records.

### 3.8 SYSTEM DESIGN

System design can be defined to provide detailed documentation of entire system. It serves as communication to management, programmers, operating staff and users. The system is designed to bring efficiency to monthly market revenue record keeping and updating. It is specifically designed to aid the revenue record processing and updating on monthly basis. Some of the functions the system is expected to perform comprise of the following and if they are fully implemented, the system will definitely bring efficiency to monthly market revenue record keeping for Suru Local Government.

- i. The system should be able to keep records of monthly market revenue for every given month.
- ii. The system should be able to provide immediate information on the monthly market revenue collected for a given year.
- iii. The system should be able to accept input data for any month or year to be involved later.
- iv. The system should be able to print out the contents of any yearly record.
- v. It must also give room for modification of records whenever the need arises.
- vi. The system should provide a chance for extensibility i.e. there should be a room for modification and addition when needed.
- vii. The system should provide unauthorized access into it, with the use of password. This will help prevent unauthorized access into it.
- viii. The system must be able to be accessed easily.

- ix. The system should be able to perform the updating system with the result right on the screen, that is in an interactive mode.
- x. The system should be able to display the total amount of revenue collected for every given year.

### **3.9 OUTPUT SPECIFICATION**

Output corresponds to the result or information that is generated by the system. The output from a computer system are required primarily to communicate result of processing to user or other systems or more importantly to provide a permanent copy of this result for computation. The design process of the output begins by the identification of the output the system must produce.

In the above design, the system produces only one type of output. The output may either be display on the computer screen, or printed in hard copy to be used for other purpose. Three fields are designated to contain the months which are serially changed, while three other fields are designated to contain the various amounts generated for the months. The contents and presentation of the outputs is similar for all given range of years, except for the difference in the amount collected for the various months.

### **3.10 INPUT SPECIFICATIONS**

Having considered the output that needs to be generated from the proposed system, there is need to consider the input which will be used to generate the output. Input refers to the mode of entering data into the system. The consideration for input design is very important because it serves as the

point of contact of the users with the system. Based on this the input is designed to attain the following objectives:

- i. To provide a cost of efficient method of input
- ii. To achieve the highest level of accuracy
- iii. To ensure that the input is both acceptable and understandable to the users.

For the above system, most of the input is entered during the program writing stage of the system development except for input that will be used in updating the records.

### **3.11 COST-BENEFIT ANALYSIS**

The proposed system will need hardware and software, and humanware (lifeware) to accomplish a task or purpose. The project calls for developing the system as following:

#### **A. THE COST:-**

##### **i. Equipment Cost:**

	N	K
2 computer (PC) Pentium	300,000	00
1 printer (LaserJet)	70,000	00
1 UPS	50,000	00
2 stabilizers	20,000	00
Installation cost	<u>20,000</u>	<u>00</u>
Total	<u>460,000</u>	<u>00</u>

ii. <b>Development cost</b>	N	K
Labour cost (6 weeks)	30,000	00
5000. 00 per week		
System Analysis	<u>20,000</u>	<u>00</u>
Total	<u>50,000</u>	<u>00</u>

iii. **Operating Cost**

	N	K
Stationery i.e		
Ribbon, paper, diskettes	30,000	00
Maintenance cost	15,000	00
Miscellaneous expenses	30,000	00
Staff training	<u>60,000</u>	<u>00</u>
Total	<u>135,000</u>	<u>00</u>
Overall cost	<u>645,000</u>	<u>00</u>

(B) **BENEFIT**

The benefits derived from implementing or introducing the new system are in three basic categories:

- i. **Direct Saving:-** These are the cost which are eliminated or reduced as result of the new system. They include the following:
  - (a) Reduction of clerical personnel.

(b) Elimination of specific cost for example the cost of buying file and printing office forms. Also the cost of more space and making shelves or buying cabinet is eliminated

ii. **Measurable benefit:** There is a direct decrease in the money spent by the organization since there is reduction (e.g. file, books etc.)

iii. **Intangible benefit:-**

The intangible include the following:

(a) **Security:-** The security of the system is taking into cognizance such that facilities are provided only for authorized users to have access to them.

(b) **Flexibility:-** The system is designed such that it can operate in a dynamic rather than static environment.

(c) **Efficiency:-** The system is designed to produce an up-to-date record and an efficient use of personnel.

(d) **Volume:-** The proposed system is designed to handle large amount of data.

## CHAPTER FOUR

### SOFTWARE DEVELOPMENT

#### 4.1 IMPLEMENTATION

After the physical system has been designed in the last chapter, the next stage is to turn the design into a working effectively and efficiently. Therefore system implementation is the stage of system development when the conceptual requirement of the new system and the overall objectives are to be transformed into physical reality. This stage is very important because it is the most crucial stage in achieving a successful new system and in giving the users confidence that the new system will work and be effective.

However for proper understanding of the task of implementation the chapter starts by discussing file design, then the choice of software package and programming language. It then goes further to discuss program and programming, review of the new system (post implementation review) and system conversion.

#### 4.2 FILE DESIGNING

File design is an aspect of system design. Once data design is completed, the next step is to make the final file design. The above design consists of a single file in which all the records are kept. The file contains previously entered records of monthly market revenue generation. It also holds an update of the records whenever new records are entered. The outputs from the file are given in subsequent pages

### **4.3 CHOICE OF SOFTWARE PACKAGE AND PROGRAMMING LANGUAGE**

There are three main levels of programming languages. They are the machine or low, assembly and high level languages. The first two are rather too complicated or cumbersome in nature and are rather outdated. The high level language are the programming languages actively in use today.

To select or choose any software package or programming language, certain criteria have to be considered. These include

- (i.) The effectiveness and efficiency of the package with regards to the functions of the record in the file
- (ii) The facility for the processing of files.
- (iii) The security of the record in the files
- (iv) The facility for maintaining of the file e.g. adding new records, sorting the records, modifying of the records and their retrieval.
- (v) The flexibility of the package
- (vi) The user-friendliness of the package.

Based on the above criteria, the programmer close to us QBASIC for the program.

### **4.4 PROGRAM AND PROGRAMMING**

The process of program development is part of system development. Programming falls within a life-cycle framework that involves requirement specification, alternative evaluation, design and implementation of computer

system. Coding is part of the construction phase that takes place during the implementation of any given systems development project.

From this starting point, the programming process following a four-step structure of its own, produces application programs that implement the processing portion of the computer system. Like system development life cycles, program development projects vary with professionals and within organizations. However, the overall process can be illustrated in the four-steps mentioned. The steps in the programming process are:-

- Designing the program
- Writing program code
- Testing and debugging
- Documentation and training.

#### **4.5 SYSTEM TESTING**

System testing is a key stage in system implementation. It involves the use of test data on new system in order to ensure that the system works accurately and efficiently before live operation commences. It is the stage at which both the physical and functional designs of the system are tested to ensure its workability. Therefore, the system test in the implementation serves as a confirmation that all is correct and an opportunity to show users that the system is working as required.

The above system has been tested using the relevant procedures and it is found to be working in accordance with specification.

#### 4.6 SYSTEM CONVERSION

File conversion is the process of converting old file data into a form required by the new system. File conversion is a very vital part of system conversion as it ensures the setting up of new files, which meet all the specifications of the new system.

Change over is the process of converting from the old system to the new system. Final change over takes place in a system when:

- (i) The system has been proved to the satisfaction of the systems analyst and other implementation activities have been complete.
- (ii) User managers are satisfied with the system tests.
- (iii) The target date for changeover is due.

Changeover is achieved in a number of ways namely direct, parallel running and staged changeover.

- (i) **Direct changeover-** This method involves a complete replacement of the old system by the new, in one move.
- (ii) **Parallel Running-** This is a method whereby both the old and new systems are used in processing current data to cross-check the results.
- (iii) **Pilot Running-** This is similar in concept to parallel running. Data from one or more previous periods for the whole or part of the system is run on the new system after results have been obtained from the old system, and the new results are compared with the old.
- (iv) **Staged changeover:-** This involves a series of limited – size direct changeovers. The new system being introduced piece-by-piece.

Given the above four methods of changeover, the changeover method prescribed for the above system is parallel running. In this method the manual operations are still allowed to run alongside the computerized system.

#### 4.7 POST IMPLEMENTATION REVIEW

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

Specifically, the objectives of the post implementation review are:

1. To determine whether the system goals and objectives have been achieved.
2. To determine whether known or expected limitations of the system need attention.
3. To determine whether personnel procedures, operating activities and control have been improved.
4. To determine whether user service requirements have been met, while simultaneously reducing errors and costs.

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

#### 4.8 MAINTENANCE

When a computerized system is fully installed and implemented, the most important item that follows is the maintenance of the system. System maintenance comprises of all necessary measures that could be taken in ensuring the efficient utilization of the system. It comprises of both hardware and software maintenance as well as other necessary services.

## CHAPTER FIVE

### 5.1 RECOMMENDATION

The recommendations made are generally concerned with data security, which is a part of the maintenance procedures to be put in place after the implementation of a system. Each file of records stored in another area must be updated, changed, and corrected along with the current records. It should be ensured that files are copied in triplicate, two copies could be kept in the same building, but different apartments, while the third copy should be kept in another building different from the one in which the first two were kept. Each time a change is made to the main program, each separate stored file should also be updated.

Today, than ever, the computer room should be a secured area. It is by nature an attractive network of activity. Here is where it all happens. If not properly secured it can become a Mecca for employees and visitors who should not be there. Management should strictly enforce a rule that only authorized personnel are to be allowed in the computer room.

### 5.2 CONCLUSION

Based on the discussion done in the previous chapters it could be easily observed that the need for a computerization of monthly market revenue records for Suru Local Government over the previously used manual method cannot be over emphasized. This will greatly enhance efficient decision making as the revenue stands an important position in the efficient functioning of the local government.

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1990 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN.	52
FEB.	54.8
MAR.	51.1
APR.	47.5
MAY.	43.4
JUN.	44.2
JUL.	28.9
AUG.	20.1
SEP.	32.6
OCT.	34.2
NOV.	50.9
DEC.	57.4

1991 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN.	70.9
FEB.	67.4
MAR.	63.2
APR.	50.3
MAY.	40.9
JUN.	35.5
JUL.	22.4
AUG.	30.3
SEP.	35.6
OCT.	40.2
NOV.	69.5
DEC.	63.2

2000 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN.	70.9
FEB.	67.4
MAR.	63.2
APR.	50.3
MAY.	40.9
JUN.	35.5
JUL.	22.4
AUG.	30.3
SEP.	35.6
OCT.	40.2
NOV.	69.5
DEC.	63.2

1992 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN.	63.5
FEB.	72.2
MAR.	69.2
APR.	69
MAY.	60.5
JUN.	40.8
JUL.	33.4
AUG.	35.3
SEP.	50.1
OCT.	48.5
NOV.	70.3
DEC.	84.9

1993 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN.	90.5
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FEB. 88.6  
MAR. 88.6  
APR. 82.6  
MAY. 80.6  
JUN. 75.2  
JUL. 60.2  
AUG. 30.2  
SEP. 39  
OCT. 42.3  
NOV. 59.4  
DEC. 80.3

1990 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN. 95.8  
FEB. 90.5  
MAR. 80.7  
APR. 90.9  
MAY. 60.4  
JUN. 43.1  
JUL. 49.7  
AUG. 44.6  
SEP. 46.2  
OCT. 60.7  
NOV. 85.9  
DEC. 98.1

1991 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN. 105  
FEB. 112.2  
MAR. 96.6  
APR. 94.8  
MAY. 72.3  
JUN. 70.3  
JUL. 35.1  
AUG. 38.9  
SEP. 45.8  
OCT. 66.4  
NOV. 96.6  
DEC. 0

1992 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN. 150.4  
FEB. 131.7  
MAR. 152.8  
APR. 122  
MAY. 80.2  
JUN. 75.1  
JUL. 60.3  
AUG. 54.3  
SEP. 70.4  
OCT. 90.2  
NOV. 155.1  
DEC. 0

1993 REVENUE RECORDS  
OF SURU LOCAL GOVERNMENT AREA  
OF KEBBI STATE - NIGERIA

JAN. 180.8  
FEB. 191.4  
MAR. 177.8  
APR. 147.2  
MAY. 131.6

```

EM *****COMPUTERIZED MONTHLY MARKET REVENUE RECORDS *****
EM *
EM *
EM *
EM *
EM * [A CASE STUDY OF SURU LOCAL GOVERNMENT]
EM *
EM * KEBBI STATE
EM *
EM * DESIGN AND PROGRAM
EM *
EM * BY
EM *
EM * HASSAN UMAR SURU
EM *
EM *****APRIL,2002*****
KEY OFF: CLS : RESET: CLEAR : CL = 12
DIM MONTH$(CL), REV(CL)
GOSUB 200
GOTO 1220
ON KEY(5) GOSUB 1215
ON KEY(10) GOSUB 1190
KEY(5) ON
KEY(10) ON
RETURN
REM *****SETTINGS*****
MM = 0: GOTO 410
CLS : SA$ = CHR$(21)
COLOR 12: FOR I = 6 TO 75: LOCATE 2, I: PRINT SA$: NEXT I
FOR I = 3 TO 23: LOCATE I, 6: PRINT SA$; SA$: NEXT I
FOR I = 3 TO 23: LOCATE I, 74: PRINT SA$; SA$: NEXT I
COLOR 6: LOCATE 4, 63: PRINT DATE$
COLOR 25: LOCATE 6, 19: PRINT "COMPUTERIZED MONTHLY MARKET REVENUE RECORDS"
COLOR 14: LOCATE 10, 20: PRINT "(A CASE STUDY OF SURU LOCAL GOVERNMENT)"
COLOR 14: LOCATE 8, 32: PRINT "KEBBI STATE"
IF MM THEN 400 ELSE 370
COLOR 12: FOR I = 6 TO 19: LOCATE 23, I: PRINT SA$: NEXT I: COLOR 5
LOCATE 23, 22: PRINT "COPYRIGHT HASSAN UMAR SURU (APRIL,2002)"
COLOR 12: FOR I = 68 TO 75: LOCATE 23, I: PRINT SA$: NEXT I
RETURN
REM*****OPENING SCREEN*****
MM = 1: GOSUB 270
MM = 0: LOCATE 12, 30: PRINT "DESIGN AND PROGRAMM"
LOCATE 14, 38: PRINT "BY"
COLOR 18: LOCATE 16, 31: PRINT "HASSAN UMAR SURU"
COLOR 4: LOCATE 18, 36: PRINT "APRIL,2002"
COLOR 12: FOR I = 6 TO 75: LOCATE 23, I: PRINT SA$: NEXT I
COLOR 21: LOCATE 21, 10: PRINT "Press C to Continue OR F10 Key to Quit"
SOUND 100, 1: A$ = INKEY$
IF A$ = "C" OR A$ = "c" THEN 510 ELSE 480
REM *****MAIN MENU*****
GOSUB 270
COLOR 12: LOCATE 12, 35: PRINT "MAIN MENU"
COLOR 18: LOCATE 14, 30: PRINT 1; : COLOR 6: PRINT "VIEW RECORDS"
COLOR 18: LOCATE 16, 30: PRINT 2; : COLOR 6: PRINT "PRINT OUT RECORDS"
COLOR 21: LOCATE 21, 22: PRINT "Select a Number OR Press F10 Key to Quit"
COLOR 6: PLAY "MB"
LOCATE 4, 9: PRINT TIME$
SOUND 100, 1
A$ = INKEY$: BA = VAL(A$)
IF BA = 1 THEN 650
IF BA = 2 THEN 880 ELSE 590
REM *****VIEW REVENUE RECORDS*****
GOSUB 270
COLOR 18: LOCATE 12, 30: PRINT "VIEW REVENUE RECORDS"

```

```

COLOR 8: LOCATE 15, 20: INPUT "Which Year...(Between 1990 to 2000)"; YR
IF 1989 < YR AND YR < 2001 THEN 730 ELSE PLAY "AG": GOTO 680
GOSUB 1280
GOSUB 270
COLOR 25: LOCATE 12, 25: PRINT YR; "REVENUE RECORDS"
FOR I = 1 TO 4: COLOR 18: LOCATE 12 + (2 * I), 10: PRINT MONTH$(I);
COLOR 6: PRINT REV(I): NEXT I
FOR I = 1 TO 4: COLOR 18: LOCATE 12 + (2 * I), 30: PRINT MONTH$(I + 4);
COLOR 6: PRINT REV(I + 4): NEXT I
FOR I = 1 TO 4: COLOR 18: LOCATE 12 + (2 * I), 50: PRINT MONTH$(I + 8);
COLOR 6: PRINT REV(I + 8): NEXT I: COLOR 8
LOCATE 22, 15: PRINT "Press A for Another Year OR F5 Key to Restart..!"
COLOR 6: PLAY "MB"
LOCATE 4, 9: PRINT TIME$
SOUND 100, 1
A$ = INKEY$
IF A$ = "A" OR A$ = "a" THEN 650 ELSE 840
REM *****PRINTING (HARDCOPY) REVENUE RECORDS*****
CLS : LOCATE 10, 20: PRINT "Have You Set Your Printer (Y/N) ? ...."
P$ = INPUT$(1)
IF P$ = "Y" OR P$ = "y" THEN 960 ELSE 930
IF P$ = "N" OR P$ = "n" THEN 940 ELSE PLAY "AG": GOTO 910
CLS : LOCATE 15, 25: COLOR 29: PRINT "Please Reset Your Printer !": COLOR
FOR X = 1 TO 2222: Y = SIN(X): NEXT X: GOTO 890
PLAY "AG": CLS : GOSUB 270
COLOR 12: LOCATE 12, 25: PRINT "PRINT (HARDCOPY) REVENUE RECORDS"
COLOR 8: LOCATE 18, 20: INPUT "Which Year ...(Between 1990 to 2000)"; YR
0 IF 1989 < YR AND YR < 2001 THEN 1030 ELSE PLAY "AG": GOTO 980
0 GOSUB 1280
0 GOSUB 270
0 COLOR 12: LOCATE 12, 25: PRINT "PRINT (HARDCOPY) REVENUE RECORDS"
0 COLOR 18: LOCATE 20, 15: PRINT "Printing ...!"
0 LPRINT TAB(25); YR; "REVENUE RECORDS"
0 LPRINT TAB(10); "OF SURU LOCAL GOVERNMENT AREA"
0 LPRINT TAB(13); "OF KEBBI STATE - NIGERIA"
0 FOR I = 1 TO 12
0 LPRINT TAB(15); MONTH$(I); " "; REV(I)
0 NEXT I: COLOR 8: LOCATE 21, 10
0 PRINT "Press A for Another Year OR F5 Key for Main Menu...!"
0 COLOR 6: PLAY "MB"
0 LOCATE 4, 9: PRINT TIME$
0 SOUND 100, 1
0 A$ = INKEY$
0 IF A$ = "A" OR A$ = "a" THEN 880 ELSE 1150
0 REM ***** F10 KEY - ABANDON PROGRAM *****
0 CLS : COLOR 6: LOCATE 12, 10: PRINT "Bye now from Revenue Records ...!"
0 RESET: SYSTEM
5 REM *****F5 KEY - RESTART PROGRAM*****
6 RETURN 10
0 REM *****MONTHS SPECIFICATION*****
0 FOR I = 1 TO 12
0 READ MONTH$(I)
0 NEXT I
0 DATA JAN., FEB., MAR., APR., MAY., JUN., JUL., AUG., SEP., OCT., NOV., DEC.
0 GOTO 250
0 REM *****YEAR SPECIFICATION*****
0 YRA = YR - 1989
0 ON YRA GOSUB 1310, 1340, 1370, 1400, 1430, 1460, 1490, 1520, 1550, 1580
5 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 52.0, 54.8, 51.1, 47.5, 43.4, 44.2, 28.9, 20.1, 32.6, 34.2, 50.9, 57.4
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 70.9, 67.4, 63.2, 50.3, 40.9, 35.5, 22.4, 30.3, 35.6, 40.2, 69.5, 63.2

```

```
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 63.5,72.2,69.2,69.0,60.5,40.8,33.4,35.3,50.1,48.5,70.3,84.9
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 90.5,88.6,88.6,82.6,80.6,75.2,60.2,30.2,39.0,42.3,59.4,80.3
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 95.8,90.5,80.7,90.9,60.4,43.1,49.7,44.6,46.2,60.7,85.9,98.1
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 105.0,112.2,96.6,94.8,72.3,70.3,35.1,38.9,45.8,66.4,96.6,
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 150.4,131.7,152.8,122.0,80.2,75.1,60.3,54.3,70.4,90.2,155.1,
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 180.8,191.4,177.8,147.2,131.6,80.4,81.3,79.5,83.0,101.3,149.8,
.4
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 207.4,192.5,140.1,155.2,123.8,90.5,84.4,80.2,93.5,151.0,191.0,
.2
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 257.0,210.6,248.9,268.8,250.4,208.9,185.3,162.3,140.6,180.2,202.7,26
0 RETURN
0 FOR I = 1 TO 12: READ REV(I): NEXT I
0 DATA 304.0,269.4,301.22,251.5,158.1,147.3,188.6,150.0,203.4,209.5,246.6,3
0 RETURN
```