# COMPUTERIZED BUDGETARY SYSTEM OF A LIABILITY COMPANY

*(A CASE STUDY OF NEWS ENGINEERING (NIG.) LIMITED, MINNA)*

BY

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## APPROVAL PAGE

This project has been read and approved for the school of science and science education, Federal University of Technology, Minna.

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## DECLARATION

This is to certify that this work was under taken by **MR SHABA ISAIAH OMOTUNDE** of the Department of Maths Computer Science, Federal University of Technology, Minna.

## DEDICATION

I dedicate this work to my dearest **MUM (Mrs Leah Adesioye Shaba)** and **DAD (Mr Shaba Abiodun Samuel)** for their love and care towards my success in life.

## ACKNOWLEDGEMENT

In producing this humble work, I gratefully acknowledge my indebtedness to the following personalities, without which it would have been more difficult for me to produce a project work worth reading. They inspired me greatly in their invaluable clarity of though and expression; warmth and sincerity support and advice.

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## ABSTRACT

Today, the value of budgeting to all businesses regardless of size is so generally recognised. We live in an age which is marked by uncertainty. It is in a setting of this nature that budgeting is of major importance. Management needs all of the assistance available to it in the planning and control of business operations.

Almost all the available research methodologies were adopted in gathering information for the purpose of this project work.

The literature review covers the area of budgeting and budgetary control, ranging from types of budgets, co-ordination of budgets, to the benefits and limitations of budgetary system.

It is however pertinent to state that the procedure prescribed herein are not rigid or unchangeable but may be modifiedfrom time to time, where there is reasonable justification to suit the model of operation.

# CHAPTER 1

## GENERAL INTRODUCTION

### 1.0 INTRODUCTION

It should be evident that the three basic functions of management, that is, planning, coordination, and control, are augmented by the use of a budgetary system.

Limited liability company is described as company whose liability of member is limited by the shares that he holds, or where a share is only partly paid, he is also liable to have to pay the amount owing by him on the shares. the day-to-day business of the company is not the carried on by the share holders. The share holders only attends the "General Meetings" of the company and at one of the meetings vote for Directors who will be entrusted with the running of the business.

This project is aimed at helping organisation in;

i) achieving positive results in its budgetary system.

ii) quick decision making and policies formulations.

iii) providing management with a planned program based upon investigation, study and research on the part of the entire organisation.

The skeptics might say that one can plan with installing system of

budgetary control in his organisation. some believe that the cost of installation is too high or there is no need of forecasting the future. In order to refute these various skeptics, the study on computerized budgetary system became necessary.

Although, Limited Liability company is divided into two categories : (i) The Private Limited Liability Company and (ii) The Public Limited Liability Company, the scope of this study has been limited to private limited liability companies with particular reference to News Engineering (Nig.) Limited as a case study.

The several methods adopted in gathering information for this project work includes; Initial Investigation, Record searching, Interviewing, Questionnaires. But Interviewing was strongly adopted and recommended among others because of its unique features.

Some unusual words used in this project work are explained in order to aid the understanding of some terms.

## 1.1 BUDGETARY SYSTEM

According to Chartered Institute of Management Accountants (C.I.M.A.), the word Budgetary System represents an amalgamation of three major component parts of budgeting;

i) Planning

ii) Budget

iii) Budgetary Control

From this short submission, there is a clear distinction between the word Budget and Budgetary system.

Budgetary planning is described as an establishment of a short term goal designed and incorporated from a long term corporate objective of an organisation and such short-term goal established must incorporate budget as basis or parameter for measuring the success of otherwise or both.

The word Budget is described as financial statement or a monetary statement or a quantitative cost of action prepared prior to a defined period of time. It contains the goals and objectives of the organisation.

Budgetary Control is also defined as an establishment of a budget relating the responsibilities of the executives to the requirement of a budget or a policy and the periodic comparison of the actual result with

the budgeted performances either to secure approval for a particular action to act as a remedial action.

**The Basic steps involved in designing effective Budgetary System**

i) Identify the long term corporate objective of the organisation

ii) Break the long term corporate objective of the organisation into a short term achievable objectives.

iii) Identify the various responsibilities centered within the organisation for the purpose of identifying cost.

iv) Design a good system of organisation structure for the purpose of allocating responsibilities and commensurate authorities.

v) Obtain top management support by providing requisite infrastructural amenities.

vi) Prepare the budgetary manual containing the budgetary objectives and how the objectives will be achieved.

vii) Appoint the budgetary committee or the budget officers for the purpose of coordinating the various budgetary activities of the organisation.

viii) Prepare a performance evaluation mechanism for the purpose of periodical comparing of actual result with budgeted result.

ix) Variance analysis i.e. actual comparison of budgeting with the obtained result level-feed back control system.

## 1.2 WHAT IS A LIABILITY COMPANY?

With the need for bigger firms whose capital could not be supplied by only twenty people, and for whose owners unlimited liability was not a risk to be desired, the idea of having limited liability companies gave birth to laws being passed in the United Kingdom in the 19th century allowing the setting-up of Limited Liability Companies.

The capital of a limited liability company is divided into shares. These can be of any denomination, such as ₦5 shares or ₦1 shares. to become a member of a limited company, alternatively called a shareholder, a person must but one or more shares payable in full or part.

The liability of a member is limited to the shares that he holds, or where a share is only partly paid, he is also liable to have to pay the amount owing by him on the shares. Thus, even if a company loses all its assets, a member's private possessions cannot be touched to pay the company's debts, other than in respect of the amount owing on partly paid shares.

Companies thus fulfill the need for the capitalization of a firm where the capital required is greater than that which twenty people can

contribute, or where limited liability for all members is desired.

### 1.2.1 Private and Public Companies

There are two classes of companies, the Private Companies and Public Companies. A private company is one which has a minimum membership of two and fulfills the following conditions:

i) Restricts the right to transfer its shares.

ii) Limits the number of its members to fifty, excluding employees and ex-employees of the company.

iii) Prohibits any invitation to the public to subscribe for any shares or debentures of the company.

Any company which does not fulfil the above conditions is a public company. These have a minimum membership of seven and no maximum limit. Since News Engineering (Nig.) Limited fulfills the above conditions, it is a Private Limited Liability Company.

The day-to-day business of a company is not carried on by the shareholders. The possession of a share normally confers voting rights on the holder, who is then able to attend general meetings of the company. At one of these the shareholders will meet and will vote for Directors, these being the people who will be entrusted with the running of the business. At each Annual General Meeting, the directors will have

to report on their stewardship, and this report is accompanies by a set of Final Accounts for the year.

## 1.3 OBJECTIVES OF THE STUDY

In an attempt to prove that the various skeptics about the computerized budgetary system in liability companies by some managements are incorrect, efforts were made in establishing the objectives covered by this study.

This includes, among others, the followings;

i) To critically look into the budgetary system of News Engineering (Nig.) Limited as a useful tool for translating it plans into reality so as to assess the effectiveness of the system by examining the weakness of the existing system and thus provide the opportunity for necessary corrective action.

ii) to draw conclusions and make useful recommendations as to how the existing system may be improved upon, that is, computerized.

iii) To increase the cost-effectiveness of the new system by relieving humans of the drudgery of repetitive computations of the detail of complex calculations.

iv) To examine the behavioural implication of the computerized system and how the merits occurring therefore can best be channel in order to minimize the demerits of the computerized budgetary system.

v) To appraise the performance of the computerized budgetary system by test-running the system for an agreed period of time in order to detect and rectify any error before the system is finally handled over to the management.

## 1.4 JUSTIFICATION OF THE STUDY

The reasons for embarking on this study cannot be far fetched. It cannot be denied that there are some managements who question the advisability of the installation of a system of budgetary control in their organisations. For instance, there are some managements who feel that their organisations are so small that they can personally supervise all activities, and are thus in a position to control operations without the artificial aid which a computerized budgetary system would provide.

There are other managements who feel that the cost of a computerized budgetary system is too high to warrant its installation.

Finally, there are those who feel that business is fraught with so

many uncertainties that it is foolish to attempt to forecast the future and to lay plans in accordance with such forecasts.

Due to the fore-going, the study became necessary:

i) in order to correct the erroneous instincts of some managements and create awareness on how computerized budgetary system could be a vital tool in enhancing and augmenting the three basic functions of managements i.e. planning, co-ordination and control.

ii) Since computerized budgetary system serves to promote efficiency and prevent waste, under a suitable system, however, the reduction in waste, the control over expenditures, and the likelihood of increased profits are all factors which make budgetary control a bargain to any company.

## 1.5 SCOPE OF THE STUDY

Limited liability company is divided into two categories:

(i) The private limited liability company.

(ii) the public limited liability company.

The scope of this study has been limited to private limited liability companies with particular reference to News Engineering (Nig.) Limited as a case study. Hence, the objects covered by memorandum and

articles of association of the company were seriously considered during the course of this study.

Although, there are public companies with limited liabilities, but these are not dealt with in this work. Consequently, any reference to a company or an organisation will be concerned with private limited liability companies.

As it is usual with work of this nature, constraints were recounted, making it impossible to carry out indepth study in this topic, but it is hoped that what has been achieved justifies this effort.

## 1.6 METHODOLOGY

The purpose of the initial investigation is to clarify the problem and to complete the understanding of all facts and activities related to the problem. The initial investigation starts with fact-finding activities. These activities include:

(i) studying the characteristics of the organisation affected by the system.

(ii) analysing written information, such as manuals and reports.

The following research methodologies are adopted in gathering information for the purpose of this project work.

### 1.6.1 Record searching

The main purpose of a record search is to establish quantitative information in terms of volumes, frequencies, trends, and ratios. It helps in establishing how much reliance can be put on the estimates given by the staff and the management of the organisation. It also helps in determining whether the departmental objectives are being achieved and whether information needed for decision - making is available when required.

### 1.6.2 Questionnaires

Questionnaires provides information responses to standard questions particularly, when detailed information about the nature and volume of work in an organisation is needed.

The design of an effective questionnaire takes careful preparation, pretesting and evaluation. Some guidelines for questionnaire design are:

(i) Identifying the group to be surveyed.

(ii) Writing the introductory material early so that respondents know the purpose of the study and how the data will be used.

(iii) Stating questions with sufficient clarity so that respondents will understand them.

(iv) determining the method of data analysis to use.

(v) Distributing the questionnaires, follow up to encourage that they are returned, and analyse the result.

The short coming of the technique includes:

(i) People may object to answering numerous time consuming and tedious questions.

(ii) No face-to-face interaction like interview.

1.6.3 Interviewing

Personal interviews are among the most fruitful of all methods of obtaining information and answering that the new system will work properly.

In order to enhance effective, economical and successful conduct of the interview, the following main guidelines were borne in mind:

(i) Learning about the individuals to be interviewed and the overall function of the organisation.

(ii) introduction of the interviewer and outlining the purpose and scope of the study, making sure that all questions are answered.

(iii) briefing up special questions about procedures that might lead to information about areas of improvement.

(iv) Limiting the amount of note taking in order to avoid distracting the person being interviewed.

(v) Summarizing the information gathered during the interview session and suggest a way of following up at the end of the interview.

Interviews are by far the most common and most satisfactory way of obtaining information about objectives, constraints, allocation of duties, problems and failures in the existing system of the organisation. Hence, the organisation is strongly advised to adopt this method for any subsequent data collections.

It must, however, be noted that for interview to be effective and economical, it needs to be well planned.

## 1.7 DEFINITION OF TERMS

In order to aid the understanding of some terms used in this project, a list of explanations of words, especially unusual ones are defined below;

Articles of Association.

A written agreement or document in law which discloses the conditions which govern the company's relationship with the employees and share holders.

Cost.

The amount of money paid or needed for buying, doing, or producing something.

Data.

A collection of facts, unorganised but able to be organised. These facts are unrefined, or raw information in a form that can be processed by and stored in a computer system.

Feedback.

Remarks about or in answer to an action, process, etc, passed back to the person or machine in charge, so that changes can be made if necessary.

Flow chart.

A plan in graphical or pictorial form that uses predefined symbols to illustrate program logic. It is a "picture" of the logic to be included in the computer program. It is the plan to be followed when the program is written.

Hardware.

The physical components of a computer data processing system. It is made up of the mechanical, magnetic, electrical and electronic devices of a computer. The input, storage, processing and control devices are hardwares.

Humanware.

Human beings who engage in the use of computers. They include programmers, systems analysts, system engineers, computer operators, and all other computer users who use them for one purpose or the other.

Liability.

An amount owing which can be determined with substantial accuracy.

Memorandum of Association.

A written agreement or document in law which discloses the conditions which govern the company's relationship with the outside world.

Program.

A sequence or list of instructions that direct the operations of a digital computer.

Share.

Any of the equal parts into which the ownership of a company can be divided, which are offered for sale to the public.

Shareholder.

An owner of shares in a business. This can be referred to as stock-holder.

Software.

The set of computer programs, procedures, and associated documentation related to the effective operation of a data processing system. It is the general term used to denote all forms of program that control the activities of a computer.

System.

A combination of personnel, material, facilities, and equipment working together to convert inputs into outputs. A system included methods and procedures. A system may be made up of subsystems. It may refer to a major element of a business.

# CHAPTER 2

# LITERATURE REVIEW

## 2.0 BUDGETING AND BUDGETARY CONTROL.

When the management delegates to the subordinates the responsibilities and authorities for performing particular functions, the management is still responsible for seeing that the functions are performed properly. It is, therefore, essential that the management develop some system of control. This system of control is referred to as **management control.**

It can be stated that management control is needed to try to ensure that the organisation achieve its objectives. Once the objectives have been agreed, plans should be drawn up so that the progress of the organisation can be directed towards the ends specified in the objectives.

A business **Budget** is defined as a plan which has been carefully prepared for all phases of the operations of a business for a definite period of time.

**Budgeting** can be described as the process of converting plans into budgets.

**Budgeting Control** is the comparing of actual operations of a

business with the budget to determine if the plans are being carried out and if not, to ascertain the reasons for deviations.

The business which employs a system of budgetary control may be likened to the motorist who carefully plans his trip, consults his map, and keeps in touch with all highway conditions on route. The budget may considered the highway map which shows the roads to take to reach the desired destination. Budgetary control may be considered the constant checking of the highways being travelled to see that the planned route is being followed.

If the traveler gets "off the road", he must endeavour to get on or revise his route if he is to reach his destination. It is rather generally agreed that the successful completion of business activities requires that careful plans be made and that these plans be reviewed and carried out. The making of such plans and their continuous review and execution are the essence of budgetary control.

## 2.1 BUDGETS AND PEOPLE

Budget are prepared to try to guide the firm towards its objectives. There is no doubt that some budgets that are drawn up are even more harmful to a firm than if none were drawn up at all.

Budgets are drawn up for control purposes, that is, an attempt to control the direction that the organisation is taking. Many people, however, look upon them, not as a guide, but as a strait-jacket. We can look at a few undesirable actions that can result from people regarding budgets as a strait-jacket rather than as a guide.

(i) The sales manager of an organisation in Nigeria refused to let a salesman go to London in response to an urgent and unexpected request from a London organisation.

**The reason:**

The overseas sales expenses budget has already been spent.

**The result:**

The most profitable order that the organisation in Nigeria would have received for many years is taken up instead by another organisation.

(ii) the works manager turns down requests for over-time work, because the budgeted over-time has already been exceeded.

**The result:**

The job is not completed on time, and the firm has to pay a large sum under a penalty clause in the contract for the job which stated that if the job was not finished by a certain date then a penalty of ₦20,000.00

would become payable.

(iii) Towards the end of the accommodating year a manager realises that he has not spent all of his budget for a particular item. He then launches on a spending spree, completely unnecessary items being bought, on the basis that "if I don't spend this amount this year, they will cut down next year when I will really need the money"

**The result:**

A lot of unusable and unnecessary equipment.

(iv) The education budget has been spent, therefore the education manager will not let anyone go on courses for the rest of the year.

**The result:**

The organisation starts to fall behind in an industry which is highly technical, the staff concerned become fed up, and the better ones start to look for jobs in other organisations which are more responsible to the need to allow personnel to keep in touch with changing technology.

## 2.2 BUDGETS AND PROFIT PLANNING

The methodology of budgetary control is probably accountancy's major contribution to management. Before we get down to the mechanics of constructing budgets we should first of all look at the main outlines of

drafting budgets.

When the budgets are being drawn up the two main objectives must be uppermost in the mind of top management, that is to say that the budget are for (1) planning and (2) control.

### 2.2.1 Budgetary Planning

This is described as an establishment of a short term goal designed and incorporated from a long term corporate objective of an organisation and such short-term goal established must incorporate budget as basis or parameter for measuring the success or otherwise or both.

Planning also means a properly co-ordinated and comprehensive plan for the whole business. Each part must interlock with the other parts.

### 2.2.2 Budgetary control

This is also defined as an establishment of a budget relating the responsibilities of the executive to the requirement of a budget or a policy and the periodic comparison of the actual result with the budgeted performances of either to secure approval for a particular action or to act as a remedial action.

Just because a plan is set down on paper does not mean that the plan will carry itself out. Control is exercised via the budget, thus the name budgetary control. The responsibility of managers and budgets

must be so linked that the responsible manager is given a guide to help him to produce certain desired results, and the actual achieved results can be compared against the expected, that is, actual compared with budget.

### 2.2.3 Preparation of Estimates

The first thing to establish is what the limiting factors are in an organisation. It may well be the fact that sales cannot be pushed above a certain amount, otherwise it might be the fact that the organisation could sell as much as it can produce, but the productive capacity of the organisation sets a limit. Whatever the limiting factor is, there is no doubt that this aspect of the organisation will need more attention than probably any other.

For instance, there would not be much point in budgeting for the sale of 1,000 units a year or if production could not manufacture more than 700, or to manufacture 2,000 a year if only 1,300 of them could be sold.

## 2.3 TYPES OF BUDGET

The different type of budgets used in an organisation today are discussed below:

### 2.3.1 The Sales Budget

The sales budget is the detailed plan of sales to be made by the company during the budget period. The details necessary depend upon such factors as the nature of the company, its products, and its sales organisation. In addition, the sales budget may be broken down by months, quarters or some other time periods. In the retail field, the breakdown is sometimes on a daily basis in certain departments.

All of this detailed information must be compiled on forms which permit the participants to see readily the effects of the plan on their own particular divisions. In addition, the forms should allow for the insertion of actual data on sales results as such information becomes available. The purpose of this is to achieve the control feature of budgeting.

In order that the sales forecast may be readily in time to provide the necessary sales estimates for preparation of the sales budget and the other budgets which must be coordinated with the sales budget, it is important that a definite schedule be prepared by the budget officer. The

carrying out of such a schedule, if it is properly devised, will prevent any delay in getting the sales estimates ready in the allotted time.

It should be emphasised again that the sales budget may be compiled in various ways, depending upon the size and nature of the company. Under any circumstances, in order to ensure satisfactory preparation of the sales budget, a definite procedure describing each step in the process should be used.

### 2.3.2 The Production-Cost Budget

Since the products to be sold by the sales organisation, as set forth in the sales budget, must be produced before they can be delivered to customers, the production function of the business has co-equal status with the sales function.

Production costs include all those costs necessary to produce a salable product. In accounting practice, production costs are usually segregated into three main groups:

(i) **Direct Material Costs:** The costs of raw materials and manufacturing supplies which are traceable to specific products, departments or manufacturing processes.

(ii) **Direct Labour Costs:** The costs of the services of employees whose time may be directly traced to specific products, departments or

manufacturing processes.

(iii) **Manufacturing Overhead Costs:** Those costs of supporting services which cannot be directly traced to specific products, departments or manufacturing processes and must be allocated on some determined basis.

Control of these three groups of production costs is essential if profit goods are to be reached. Modern cost accounting procedures recognise this fact and cost accounting systems which aid in the control of production costs are an essential part of modern business management, since they provide the means of keeping costs at the level needs for profitable sales.

As indicated preciously, production planning cannot be done independently of sales planning. The interdependence of the sales and production budgets of a business concern should be an obvious fact. Once an estimate has been made by a company of the volume of products it expects to sell in a future period, it unquestionably follows that plans must then be made to provide the necessary volume of products. The sales budget sets the level of effort to which the functions of the business must be geared if this level is to be reached.

Planning the physical volume of products to be produced is only

the first phase of the production cost budget. This step, however must be completed before the remaining portions of the budget can be prepared. Five phases are necessary and these are often regarded as a service of budgets. These five budgets are:

(a) The materials budget.

(b) The labour budget.

(c) The manufacturing-overhead budget.

(d) The equipment budget.

### 2.3.3 The Distribution-Cost Budget

Generally speaking, distribution costs include the cost of those activities which are concerned with the marketing of the company's product. It may be broadly defined as the costs of selling the company's product.

Recent years have witnessed a growth in the recognition of the importance of distribution costs to a company. It should be evident, however, that selling costs and sales volume cannot be regarded as independent factors by any business. In budgeting, therefore, the interdependence of the sales budget and the distribution-cost budget must not be over looked. Sales are a result of sales effort, and the cost of sales effort is a distribution cost.

The problem of directing and controlling distribution costs is a difficult one, however, because marketing activities are more flexible than production activities. Such questions as what channels of distribution to employ, and the amount of promotional activities to be undertaken, are examples of the complexity of marketing problems.

It is not feasible to prescribe here a budget procedure applicable to all concerns. The following are the main steps in budgeting distribution costs:

The first step requires a determination of the basic classification and sub-classifications to be employed.

The second step in the development of a distribution-cost budget calls for an analysis of the costs for the purpose of determining which are direct and which are indirect.

The third step in the budgeting of distribution costs is to analyse costs in terms of those which are fixed and variable. Since, in some instances, certain costs will neither be entirely fixed nor entirely variable, use will have to be made of an indirect classification, termed either semi variable or semi fixed.

the fourth step in the budgeting procedure is to estimate the amount of the costs in accordance with the estimated sales as shown by

the sales budget. Here, the classifications of the three previous steps will be used.

The fifth step in the procedure under consideration comprises the preparation of estimates for subdivisions of the budget period. This involves a breakdown of the estimates determined in the previous step by months or quarters as desired.

The sixth and last step is the submission of the budget figures to those responsible for carrying out the sales program.

### 2.3.4 The General and Administrative Cost Budget

Certain costs incurred by every business are more closely related to the general administration of the company than they are to the production and selling functions. Such costs relate to the over-all administration of the company which is concerned with policy determination, such as fees paid to the board of directors and the salaries of the top executive officers. In addition, certain staff offices must be maintained which provide services to all departments and activities of the company, such as the legal, accounting, and statistical departments, and the costs of these staff offices are regarded in character.

The costs which are included in the general and administrative - cost budget naturally show a considerable variation among different

companies as the result of differences in such costs, as well as differences of opinion as to what costs should be included in this budget.

An examination of the classifications of such costs practice discloses two methods. Thus;

(i) **Functional Classification;**

E.g; (a) Directors' expenses

(b) President's offices

(c) Security's office

(d) General office expenses, etc.

(ii) **Classification by nature of the expenditure;**

E.g; (a) Salaries

(b) Travel Security

(c) Social security

(d) Group insurance

(e) Employee welfare, etc.

In so far as it is possible, every item of general and administrative costs should be classified as to functional purpose. Responsibility for preparation of budget estimates, and subsequent control of expenditures, can then be definitely assigned to some individual. Ordinarily, it is not too difficult to estimate general and administrative costs, but the individuals

who have been assigned to responsibility for such costs should be required to submit their requests in detail.

In view of the nature of certain of the administrative costs, there should be no variance in such cases between the budgeted item and the actual cost.

### 2.3.5 The Plant and Equipment Budget

The planning of acquisitions of plant and equipment is one of great importance to management because of its relation to production costs. Furthermore, acquisitions of plant and equipment frequently entail the financial planning.

In certain enterprises, such as manufacturing and public utilities, the investment in plant and equipment represents a large proportion of an individual company's total assets. Consequently, in such cases particularly, injudicious investment in plant and equipment can have a serious effect on both the operating results and financial position of a company. For this reason, the plant and equipment budget needs to be given careful consideration by management.

To add to plant facilities without inquiring into the need for such facilities before hand may provide for such a large capacity to produce that the added amount will never come close to being fully utilized. On

the other hand, failure by the management to investigate the need for additional facilities may result in the loss of market potential to competitors.

The term "plant and equipment" includes all types of structures and equipment employed in the operation of a business. It also includes the land used for plant sites, as well as such intangible as parents, franchises, trade marks, and the like.

If a company is to maintain proper control of plant and equipment expenditures, it must establish adequate accounting records for such costs.

### 2.3.6 The Financial Budget

It has been observed that the budgeting of the operational activities of a business must be coordinated with the company's financial budget. The obvious reason for this is that the production, distribution and financial activities of a business are all necessary interdependent.

If a business is to be managed so that it is successful and profitable one, these three activities must be put into consideration.

The financial budget will thus include a cash budget which is based on an estimate of cavsb3T

budget will provide details of the funds which are expected to become available throughout the budget period. The amount of additional funds that may be needed can then be determined along with the probable time and duration of such needs.

The preparation of the cash budget involves making estimates of the company's probable cash receipts and cash disbursements during the future period covered by the budget.

The usual procedure which is followed in drawing up a cash budget is to start by making up a list of the sources and estimated amounts of receipts for the future period under consideration.

The data used in the financial budget are taken from the other budget since these budgets contain the needed information. They reveal the likely sources and amounts of funds to be received during the budget periods, as well as the cash requirements during that period.

After these data have been transcribed in the form of the estimated financial budget, the management of the company should review their budget to determine whether or not the financial requirements are reasonable.

## 2.4 CO-ORDINATION OF BUDGETS

The final steps in the preparation of a company's budget deal with the compilation and co-ordination of the individual departmental budgets and submission of the over-all plan for the period to top management for review and approval. Ordinarily, there are three steps which need to be taken.

The first step is the consolation of the various estimates required by the budget into the over-all plan of operations.

The second step is the summarization of this over-all plan for the purpose of bringing out clearly the important facts.

The third step is the submission of this master budget to the chief executive and board of directors for their consideration and approval.

### 2.4.1 The Master Budget

The master budget, as its name implies, is a summary of all functional budgets. In other words, it summarizes the sales, production, operation expenses, plant and equipment, and financial budgets. There is no standard master budget used by different companies. In fact, it tends to vary widely in form, ranging from a summary of principal items of revenue and expense to a detailed statement co-ordinating all activities. The extent to which the material in the master budget is condensed and

summarized depends to a large extent upon the nature of the business. Another determining factor is the kind of form desired by the chief executive.

### 2.4.2 Preparation of the master Budget

Preparing a master budget is largely a mechanical accounting task where there has been active supervision and review by the budget officer in the preparation of the individual budget.

Preparation of the master budget, however, must not be confused with preparation of the individual budgets. The preparation of the master budget differs in that it is a consolidation or fitting together of the individual budgets into an over-all plan. In other words, the master budget is, as previously pointed out, a summary of all the functional budgets.

The responsibility for the individual budgets rests primarily with the persons who are responsible for the activities which these individual budgets cover. The budget officer, however, has the responsibility of coordinating these budgets and consolidating into a unified plan of operations.

## 2.5 BENEFITS OF BUDGETARY SYSTEM

Budgeting means that managers can no longer give general answers affecting the running of the firm, they have to put figures to their ideas, and they know that in the end their estimated figures are going to be compared with what the actual figures turn out to be.

It has often been said that the act of budgeting is possibly of more benefits than the budgets which are produced. However, the following benefits can be claimed for good budgeting:

(i) The strategic planning carried on by the board of directors or owners can be more easily linked to the decisions by managers as to how the resources of the business will be used to try to achieve the objectives of the business. The strategic planning has to be converted into action, and budgeting provides the ideal place where such planning can be changed into financial terms.

(ii) Standards of performance can be agreed to for the various parts of the business. If sales and production targets are set as part of a co-ordinated plan, then the sales department cannot really complain that production is insufficient if they had agreed previously to a production level and this is being achieved, nor can production complain if its production exceeds the amount budgeted for and it remains unsold.

(iii) The expression of plans in comparable financial terms. Some managers think mainly in terms of say units of production, or of tons of inputs or outputs, or of lorry mileage, etc. The effect that each of them has upon financial results must be brought home to them. For instance a transport manager might be unconcerned about the number of miles that his haulage fleet of lorries covers until the cost of doing such a large mileage is brought home to him.

(iv) Manager can see how their work slots into the activities of the firm. It can help to get rid of the feeling of "I'm only a number not a person", because he can identify his position within the firm and can see that his job really is essential to the proper functioning of the firm.

(v) The budgets for a firm cannot be set in isolation. This means that the situation of the business, the nature of its products and its work force etc, must be seen against the economic background of the country. For instance it is no use budgeting for extra labour when labour is in extremely short supply, without realising the implications, possibly that of paying higher than normal wage rates. Increasing the sales target during a "credit squeeze" needs a full investigation of the effect of the shortage of money upon the demand for the firm's goods and so on.

## 2.6 LIMITATIONS OF BUDGETARY SYSTEM

Calling attention to limitations of budgetary system is not the same as reputing the objectives of budgeting. Actually, a budgetary system has a far better chance of achieving all it is intended to achieve if the limitations associated with it are understood.

### 2.6.1 Personnel Limitations.

A budget is not a machine whereby all that management needs to do is press a button in order to cause the desired plans or forecasts, the co-ordination of activities and their control, to go automatically to work, and produce the desired results for the period. On the contrary, budgeting is dependent upon personnel for its success of failure. Plans and forecasts are only as good as the people who make the plans and forecasts.

A budgetary system cannot be expected to be successful unless it is understood and supported by all participants. A business can be operated as a unified whole, rather than as a group of separate departments, only if the personnel desire to work together.

Without the proper understanding of the plan, the spirit and the desire to be a "winning team", there is little to be gained by attempting to operate under a system of budgetary control.

# APPENDIX PROGRAMMING

```
SET TALK OFF
SET STATUS OFF
SET CENTURY ON
SET DATE TO BRIT
@ 3, 10 TO 19, 60 COLOR W+ PANEL
SET COLOR TO B+
@ 5, 12 SAY TIME()
@ 5, 50 SAY DATE()
SET COLOR TO G
@ 7, 25 SAY "MASTER BUDGET SUMMARY"
SET COLOR TO B*/W
@ 9, 30 SAY "MAIN MENU"
SET COLOR TO GR+
@ 11, 14 SAY "1. REVENUE"
@ 13, 14 SAY "2. OPERATING COSTS"
@ 15, 14 SAY "3. EXIT"
CHOICE=SPACE(1)
SET COLOR TO R+
@ 21, 30 SAY "Enter your choice" GET CHOICE;
     VALID CHOICE $ "123" ERROR "Press either 1, 2 or 3"
READ
DO CASE
CASE CHOICE="1"
  DO REV
CASE CHOICE="2"
  DO COST
CASE CHOICE="3"
  DO EXITER
ENDCASE
RETURN


PROCEDURE REV
CLEAR
@ 8, 15 TO 20 , 57 COLOR B+
SET COLOR TO W*/B
@ 10, 30 SAY "R E V E N U E"
SET COLOR TO GR
@ 12, 30 SAY "A.  MONTHS"
@ 14, 30 SAY "B.  YEAR TO DATE"
@ 16, 30 SAY "C.   BUDGET FOR THE YEAR"
SET COLOR TO GR+
store space (1) to ans
@ 19, 35 SAY "Enter your choice" get ans;
     valid ans $ "ABC" error "Press either A, B or C"
read
do case
case ans="A"
 do REV1
case ans="B"
 do  REV2
CASE ANS="C"
 DO REV3
```

```
SET TALK OFF
SET STATUS OFF
SET CENTURY ON
SET DATE TO BRIT
@ 3, 10 TO 19, 60 COLOR W+ PANEL
SET COLOR TO B+
@ 5, 12 SAY TIME()
@ 5, 50 SAY DATE()
SET COLOR TO G
@ 7, 25 SAY "MASTER BUDGET SUMMARY"
SET COLOR TO B*/W
@ 9, 30 SAY "MAIN MENU"
SET COLOR TO GR+
@ 11, 14 SAY "1. REVENUE"
@ 13, 14 SAY "2. OPERATING COSTS"
@ 15, 14 SAY "3. EXIT"
CHOICE=SPACE(1)
SET COLOR TO R+
@ 21, 30 SAY "Enter your choice" GET CHOICE;
     VALID CHOICE $ "123" ERROR "Press either 1, 2 or 3"
READ
DO CASE
CASE CHOICE="1"
  DO REV
CASE CHOICE="2"
  DO COST
CASE CHOICE="3"
  DO EXITER
ENDCASE
RETURN


PROCEDURE REV
CLEAR
@ 8, 15 TO 20 , 57 COLOR B+
SET COLOR TO W*/B
@ 10, 30 SAY "R E V E N U E"
SET COLOR TO GR
@ 12, 30 SAY "A.  MONTHS"
@ 14, 30 SAY "B.  YEAR TO DATE"
@ 16, 30 SAY "C.   BUDGET FOR THE YEAR"
SET COLOR TO GR+
store space (1) to ans
@ 19, 35 SAY "Enter your choice" get ans;
     valid ans $ "ABC" error "Press either A, B or C"
read
do case
case ans="A"
 do REV1
case ans="B"
 do  REV2
CASE ANS="C"
 DO REV3
endcase
return
```

```
PROCEDURE REV1
CLEAR
DO WHILE .T.
APPEND BLANK
USE BUDGET
@ 1, 1 TO 24, 78 DOUBLE COLOR GR
SET COLOR TO W*/B
@ 3, 35 SAY "M O N T H S"
SET COLOR TO B+
@ 4, 2 TO 4, 77 COLOR GR
@ 5, 20 TO 18, 20
@ 5, 35 TO 18, 35
@ 5, 50 TO 18, 50
@ 8, 65 TO 18, 65
@ 6, 62 SAY "VARIATION"
@ 8, 2 SAY "ITEM/ACCOUNT"
@ 8, 25 SAY "BUDGET"
@ 8, 41 SAY "ACTUAL"
@ 8, 55 SAY "AMOUNT"
@ 8, 70 SAY "%"
@ 10, 3 SAY "REVENUE:"
@ 12, 6 SAY "Contracts"
@ 13, 6 say "Jobs"
@ 14, 6 say "Supplies"
@ 15, 6 say "Deposits"
@ 16, 6 say "Capital"
@ 17, 6 say "Loan Received"
@ 18, 6 say "Others"
@ 19, 2 to 19, 77
@ 20, 6 say "TOTAL"
H=22
@ 12, H GET A1 PICT "9999999.99"
@ 13, H GET A2 PICT "9999999.99"
@ 14, H GET A3 PICT "9999999.99"
@ 15, H GET A4 PICT "9999999.99"
@ 16, H GET A5 PICT "9999999.99"
@ 17, H GET A6 PICT "9999999.99"
@ 18, H GET A7 PICT "9999999.99"
TOT1=0
TOT1= TOT1 + A1+A2+A3+A4+A5+A6+A7
K=38
@ 12, K GET B1 PICT "9999999.99"
@ 13, K GET B2 PICT "9999999.99"
@ 14, K GET B3 PICT "9999999.99"
@ 15, K GET B4 PICT "9999999.99"
@ 16, K GET B5 PICT "9999999.99"
@ 17, K GET B6 PICT "9999999.99"
@ 18, K GET B7 PICT "9999999.99"
TOT2=0
TOT2= TOT2 +B1+B2+B3+B4+B5+B6+B7
L=52
@ 12, L GET C1 PICT "9999999.99"
@ 13, L GET C2 PICT "9999999.99"
@ 14, L GET C3 PICT "9999999.99"
@ 15, L GET C4 PICT "9999999.99"
@ 16, L GET C5 PICT "9999999.99"
@ 17, L GET C6 PICT "9999999.99"
```

```
@ 18, L GET C7 PICT "9999999.99"
TOT3=0
TOT3=TOT3 + C1+C2+C3+C4+C5+C6+C7
P=67
@ 12, P GET D1 PICT "9999999.99"
@ 13, P GET D2 PICT "9999999.99"
@ 14, P GET D3 PICT "9999999.99"
@ 15, P GET D4 PICT "9999999.99"
@ 16, P GET D5 PICT "9999999.99"
@ 17, P GET D6 PICT "9999999.99"
@ 18, P GET D7 PICT "9999999.99"
TOT4=0
TOT4= TOT4 +D1+D2+D3+D4+D5+D6+D7
READ
@ 20, H SAY TOT1
@ 20, K SAY TOT2
@ 20, L SAY TOT3
@ 20, P SAY TOT4
@ 22, 2 TO 22, 77
ANS1=SPACE(1)
@ 23, 35 SAY "Press C to continue" GET ANS1;
  VALID ANS1 $ "Cc" ERROR "Press C or c"
READ
IF ANS1="c" .OR. ANS1="C"
 DO REV2
ELSE
EXIT
ENDIF
ENDDO
RETURN



PROCEDURE REV2
CLEAR
DO WHILE .T.
APPEND BLANK
USE BUDGET
@ 1, 1 TO 24, 78 DOUBLE COLOR GB+
SET COLOR TO W+*/B
@ 3, 35 SAY "YEAR TO DATE"
SET COLOR TO B+
@ 4, 2 TO 4, 77 COLOR GB+
@ 5, 20 TO 18, 20
@ 5, 35 TO 18, 35
@ 5, 50 TO 18, 50
@ 8, 65 TO 18, 65
@ 6, 62 SAY "VARIATION"
@ 8, 2 SAY "ITEM/ACCOUNT"
@ 8, 25 SAY "BUDGET"
@ 8, 41 SAY "ACTUAL"
@ 8, 55 SAY "AMOUNT"
@ 8, 70 SAY "%"
```

```
@ 10, 3 SAY "REVENUE:"
@ 12, 6 SAY "Contracts"
@ 13, 6 say "Jobs"
@ 14, 6 say "Supplies"
@ 15, 6 say "Deposits"
@ 16, 6 say "Capital"
@ 17, 6 say "Loan Received"
@ 18, 6 say "Others"
@ 19, 2 to 19, 77
@ 20, 6 say "TOTAL"
H=22
@ 12, H GET E1 PICT "9999999.99"
@ 13, H GET E2 PICT "9999999.99"
@ 14, H GET E3 PICT "9999999.99"
@ 15, H GET E4 PICT "9999999.99"
@ 16, H GET E5 PICT "9999999.99"
@ 17, H GET E6 PICT "9999999.99"
@ 18, H GET E7 PICT "9999999.99"
TOT5=0
TOT5= TOT5+ E1+E2+E3+E4+E5+E6+E7
K=38
@ 12, K GET F1 PICT "9999999.99"
@ 13, K GET F2 PICT "9999999.99"
@ 14, K GET F3 PICT "9999999.99"
@ 15, K GET F4 PICT "9999999.99"
@ 16, K GET F5 PICT "9999999.99"
@ 17, K GET F6 PICT "9999999.99"
@ 18, K GET F7 PICT "9999999.99"
TOT6=0
TOT6= TOT6 +F1+F2+F3+F4+F5+F6+F7
L=52
@ 12, L GET G1 PICT "9999999.99"
@ 13, L GET G2 PICT "9999999.99"
@ 14, L GET G3 PICT "9999999.99"
@ 15, L GET G4 PICT "9999999.99"
@ 16, L GET G5 PICT "9999999.99"
@ 17, L GET G6 PICT "9999999.99"
@ 18, L GET G7 PICT "9999999.99"
TOT7=0
TOT7=TOT7 + G1+G2+G3+G4+G5+G6+G7
P=67
@ 12, P GET H1 PICT "9999999.99"
@ 13, P GET H2 PICT "9999999.99"
@ 14, P GET H3 PICT "9999999.99"
@ 15, P GET H4 PICT "9999999.99"
@ 16, P GET H5 PICT "9999999.99"
@ 17, P GET H6 PICT "9999999.99"
@ 18, P GET H7 PICT "9999999.99"
TOT8=0
TOT8= TOT8 +H1+H2+H3+H4+H5+H6+H7
READ
@ 20, H SAY TOT5
@ 20, K SAY TOT6
@ 20, L SAY TOT7
@ 20, P SAY TOT8
@ 22, 2 TO 22, 77
ANS1=SPACE(1)
```

```
@ 23, 35 SAY "Press C to continue" GET ANS1;
  VALID ANS1 $ "Cc" ERROR "Press C or c"
READ
IF ANS1="c" .OR. ANS1="C"
 DO REV3
ELSE
EXIT
ENDIF
ENDDO
RETURN


PROCEDURE REV3
CLEAR
@ 2, 2 TO 24, 65 PANEL COLOR W+
SET COLOR TO GR* /B
@ 4, 33 SAY "BUDGET FOR THE YEAR"
SET COLOR TO W
USE BUDGET
DO WHILE .T.
APPEND BLANK
@ 6, 7 SAY "REVENUE:"
@ 10, 6 SAY "Contracts" GET BG1 PICT "999999999.99"
@ 11, 6 say "Jobs" GET BG2 PICT "999999999.99"
@ 12, 6 say "Supplies" GET BG3 PICT "999999999.99"
@ 13, 6 say "Deposits" GET BG4 PICT "999999999.99"
@ 14, 6 say "Capital" GET BG5  PICT "999999999.99"
@ 15, 6 say "Loan Received" GET BG6 PICT "999999999.99"
@ 16, 6 say "Others" GET BG7 PICT "999999999.99"
@ 18, 3 to 18, 64
@ 19, 6 say "TOTAL"
READ
BGT=0
BGT=BGT+BG1+BG2+BG3+BG4+BG5+BG6+BG7
@ 19, 30 SAY BGT
MORE=SPACE(1)
SET COLOR TO R
@ 21, 30 SAY "More record to calculate Y/N" get more;
     valid more $ "YyNn" error "Press Y or N"
read
if more="Y"
CLEAR
 do rev1
else
CLEAR
DO EXITER
endif
enddo
return

PROCEDURE COST
CLEAR
@ 8, 15 TO 20 , 57 PANEL COLOR  R+
@ 10, 28 SAY "OPERATING COSTS"
SET COLOR TO W
@ 12, 30 SAY "A.  MONTHS"
```

```
@ 14, 30 SAY "B.  YEAR TO DATE"
@ 16, 30 SAY "C.   BUDGET FOR THE YEAR"
store space (1) to ans
SET COLOR TO G+
@ 19, 35 SAY "Enter your choice" get ans;
     valid ans $ "ABC" error "Press either A, B or C"
read
do case
case ans="A"
 do COST1
case ans="B"
 do  COST2
CASE ANS="C"
 DO COST3
endcase
return



PROCEDURE COST1
CLEAR
DO WHILE .T.
APPEND BLANK
USE BUDGET
@ 1, 1 TO 24, 78 DOUBLE COLOR GR
SET COLOR TO W*/B
@ 3, 35 SAY "M O N T H S"
SET COLOR TO B+
@ 4, 2 TO 4, 77 COLOR GR
@ 5, 20 TO 18, 20
@ 5, 35 TO 18, 35
@ 5, 50 TO 18, 50
@ 8, 65 TO 18, 65
@ 6, 62 SAY "VARIATION"
@ 8, 2 SAY "ITEM/ACCOUNT"
@ 8, 25 SAY "BUDGET"
@ 8, 41 SAY "ACTUAL"
@ 8, 55 SAY "AMOUNT"
@ 8, 70 SAY "%"
@ 10, 3 SAY "OPERATING COSTS:"
@ 12, 3 SAY "Engineering Dept."
@ 14, 3 say "General &"
@ 15, 3 SAY  "Admin Dept."
@ 16, 3 say "Financial and"
@ 17, 3 SAY "supply Dept."
@ 19, 6 say "TOTAL"
@ 21, 6 say "NET RESULT"
H=22
@ 12, H GET AA1 PICT "9999999.99"
@ 15, H GET AA2 PICT "9999999.99"
@ 17, H GET AA3 PICT "9999999.99"
*@ 19, H GET AA4 PICT "9999999.99"
TOT=0
TOT= TOT+ AA1+AA2+AA3
K=38
@ 12, K GET BB1 PICT "9999999.99"
```

```
@ 15, K GET BB2 PICT "9999999.99"
@ 17, K GET BB3 PICT "9999999.99"
* 19, K GET BB4 PICT "9999999.99"
TOTB2=0
TOTB2= TOTB2 +BB1+BB2+BB3
L=52
@ 12, L GET CC1 PICT "9999999.99"
@ 15, L GET CC2 PICT "9999999.99"
@ 17, L GET CC3 PICT "9999999.99"
*@ 19, L GET CC4 PICT "9999999.99"
TOTC3=0
TOTC3=TOTC3 + CC1+CC2+CC3
P=67
@ 12, P GET DD1 PICT "9999999.99"
@ 15, P GET DD2 PICT "9999999.99"
@ 17, P GET DD3 PICT "9999999.99"
*@ 19, P GET DD4 PICT "9999999.99"
TOTD4=0
TOTD4= TOTD4 +DD1+DD2+DD3
READ
@ 20, H SAY TOT
@ 20, K SAY TOTB2
@ 20, L SAY TOTC3
@ 20, P SAY TOTD4
@ 22, 2 TO 22, 77
ANS1=SPACE(1)
@ 24, 35 SAY "Press C to continue" GET ANS1;
  VALID ANS1 $ "Cc" ERROR "Press C or c"
READ
IF ANS1="c" .OR. ANS1="C"
 DO COST2
ELSE
EXIT
ENDIF
ENDDO
RETURN



PROCEDURE COST2
CLEAR
DO WHILE .T.
APPEND BLANK
USE BUDGET
@ 1, 1 TO 24, 78 DOUBLE COLOR GR
SET COLOR TO W*/B
@ 3, 35 SAY "YEAR TO DATE"
SET COLOR TO B+
@ 4, 2 TO 4, 77 COLOR GR
@ 5, 20 TO 18, 20
@ 5, 35 TO 18, 35
@ 5, 50 TO 18, 50
@ 8, 65 TO 18, 65
@ 6, 62 SAY "VARIATION"
@ 8, 2 SAY "ITEM/ACCOUNT"
@ 8, 25 SAY "BUDGET"
@ 8, 41 SAY "ACTUAL"
```

```
@ 15, K GET BB2 PICT "9999999.99"
@ 17, K GET BB3 PICT "9999999.99"
* 19, K GET BB4 PICT "9999999.99"
TOTB2=0
TOTB2= TOTB2 +BB1+BB2+BB3
L=52
@ 12, L GET CC1 PICT "9999999.99"
@ 15, L GET CC2 PICT "9999999.99"
@ 17, L GET CC3 PICT "9999999.99"
*@ 19, L GET CC4 PICT "9999999.99"
TOTC3=0
TOTC3=TOTC3 + CC1+CC2+CC3
P=67
@ 12, P GET DD1 PICT "9999999.99"
@ 15, P GET DD2 PICT "9999999.99"
@ 17, P GET DD3 PICT "9999999.99"
*@ 19, P GET DD4 PICT "9999999.99"
TOTD4=0
TOTD4= TOTD4 +DD1+DD2+DD3
READ
@ 20, H SAY TOT
@ 20, K SAY TOTB2
@ 20, L SAY TOTC3
@ 20, P SAY TOTD4
@ 22, 2 TO 22, 77
ANS1=SPACE(1)
@ 24, 35 SAY "Press C to continue" GET ANS1;
  VALID ANS1 $ "Cc" ERROR "Press C or c"
READ
IF ANS1="c" .OR. ANS1="C"
 DO COST2
ELSE
EXIT
ENDIF
ENDDO
RETURN



PROCEDURE COST2
CLEAR
DO WHILE .T.
APPEND BLANK
USE BUDGET
@ 1, 1 TO 24, 78 DOUBLE COLOR GR
SET COLOR TO W*/B
@ 3, 35 SAY "YEAR TO DATE"
SET COLOR TO B+
@ 4, 2 TO 4, 77 COLOR GR
@ 5, 20 TO 18, 20
@ 5, 35 TO 18, 35
@ 5, 50 TO 18, 50
@ 8, 65 TO 18, 65
@ 6, 62 SAY "VARIATION"
@ 8, 2 SAY "ITEM/ACCOUNT"
@ 8, 25 SAY "BUDGET"
@ 8, 41 SAY "ACTUAL"
```

```
PROCEDURE COST3
CLEAR
@ 2, 2 TO 24, 65 PANEL COLOR W+
SET COLOR TO GR* /B
@ 4, 32 SAY "BUDGET FOR THE YEAR"
SET COLOR TO W
USE BUDGET
DO WHILE .T.
APPEND BLANK
@ 6, 9 SAY "OPERATING COSTS:"
@ 10, 6 SAY "Engineering Dept." GET BGA1 PICT "999999999.99"
@ 13, 6 say "Gen. & Adminal Dept." GET BGA2 PICT "999999999.99"
@ 15, 6 say "Final. & Supplies Dept" GET BGA3 PICT "999999999.99"
@ 17, 3 to 17, 64
@ 19, 6 say "TOTAL"
@ 21, 6 say "NET RESULTS"
READ
BGTA=0
BGTA=BGTA+BGA1+BGA2+BGA3
@ 19, 30 SAY BGTA
MORE=SPACE(1)
SET COLOR TO R
@ 23, 30 SAY "More record to calculate Y/N" get more;
     valid more $ "YyNn" error "Press Y or N"
read
if more="Y"
CLEAR
 do REV1
else
CLEAR
DO EXITER
endif
enddo
return
```

```
PROCEDURE EXITER
SET TALK OFF
SET STATUS OFF
@ 3, 2 TO 9, 59 COLOR GB "="
set color to g+*/w
@ 5, 17 SAY "I am quitting"
set color to w+
res=space(1)
@ 7, 12  say "Are you sure want to quit along with me? Y/N" get res;
    valid res $ "YnNy" error "Press Y or N"
READ
if res="Y" .or. res="y"
quit
else
clear
*do LO
endif
return
□0
```

# MASTER BUDGET SUMMARY

| ITEM/ ACCOUNT | MONTH | | | | YEAR TO DATE | | | | BUDGET FOR THE YEAR |
|---|---|---|---|---|---|---|---|---|---|
| | BUDGET | ACTUAL | VARIATION | | BUDGET | ACTUAL | VARIATION | | |
| | | | AMOUNT | % | | | AMOUNT | % | |
| REVENUE | | | | | | | | | |
| Contracts | 5,000,000 | 7, 500, 000 | 2, 500, 000 | 50 | 60,000000 | 90,000000 | 30,0000000 | 50 | 112, 500, 000 |
| Jobs | 3, 500, 000 | 4, 500, 000 | 1,000,000 | 29 | 42,000000 | 54,000000 | 12,0000000 | 29 | 67, 500, 000 |
| Supplies | 1,500,000 | 2,000,000 | 500,000 | 33 | 18,000000 | 24,000000 | 6,00000000 | 33 | 30,000,000 |
| Deposits | - | - | - | - | - | - | - | - | - |
| Capital | 50, 000 | 50, 000 | - | - | 600,000 | 660,000 | - | - | 750, 000 |
| Loan Received | 800, 0000 | 950,000 | 150,000 | 19 | 9,600, 000 | 11,400000 | 1,800, 000 | 19 | 14250,000 |
| Others | 150,000 | 250,000 | 100,000 | 67 | 1,800,000 | 3,000,000 | 1,200,000 | 67 | 3,750, 000 |
| TOTAL | 11,000,000 | 15, 250,000 | 4,250,000 | 39 | 132,00000 | 183,00000 | 51,0000000 | 39 | 228,750.000 |
| OPERA – TING COST | | | | | | | | | |
| Eng. Dept | 3,000,0000 | 4,000,000 | 1,000,000 | 33 | 36,00000 | 48,000000 | 12,000,000 | 33 | 55,200, 000 |
| Gen. & Admin Dept. | 1,500,000 | 2,000,000 | 500,000 | 33 | 18,000000 | 24,000000 | 6,000,000 | 33 | 27,600,000 |
| Finance & Supply Dept.. | 500,000 | 1,500,000 | 1,000,000 | 200 | 6,000,000 | 18,000000 | 12,000,000 | 200 | 20, 700,000 |
| TOTAL | 5,000,000 | 7,500,000 | 2,500,000 | 50 | 60,000000 | 90,000000 | 30,000,000 | 50 | 103,500,000 |
| NET RESULT | 6,000,000 | 7,750,000 | 1,750,000 | 29 | 72,000000 | 93,000000 | 21,000,000 | 29 | 125,250,000 |

### 2.6.2 Budget Plans are Estimates

It has been previously brought out that budgets deal with future periods and, therefore, depend upon forecasts. Forecasting is not an exact science. Every effort must be made to determine all factors - both internal and external - which affects the company's future prospects. If forecasts are based upon sound analysis of all available data, they are usually reliable and useful guides and vice versa.

In addition, it must be remembered that in as much as budget plans are estimates, they must not be considered inflexible. In other words, plans must be adaptable to changing situations.

### 2.6.3 Budget not a cure-all

The budget is a tool of management, but not a substitute for management. Unfortunately, it is sometimes felt that once a budget system has been installed, the company's ills will end. It is a serious mistake to expect too much from the budget. To the extent that the budget is bases upon sound forecasting, co-ordination of all departments, and followed up by continuous review, it is a valuable aid to management in reaching the desired goal of profit and success.

# CHAPTER 3

# SYSTEM ANALYSIS AND DESIGN

## 3.0 CLASSIFICATION OF SYSTEMS

System can be classifies along numerous spectrums. They can be simple or complex, open or close, stable or dynamic, adaptive or non-adaptive, permanent or temporary systems.

### 3.0.1 Simple and Complex Systems

A simple system is one in which there are few elements of components and the relationship between elements uncomplicated and straight forward. For example, the process of mixing ingredient to make a cake is an example of simple system.

A complex system on the other hand, has many elements that are highly related and inter connected. For example, the products of rocket or bomb is an example of a complex system.

Nevertheless, most systems fall in between simple and complex.

### 3.0.2 Open and Closed Systems

An open system has an interaction with its environment. In other words, there is a flow of input and output across the system boundaries. All living organisms including plants and animals are open systems because they have a high degree of interaction with the environment. All

business are open systems.

A closed system is the opposite of an open system. There is no interaction with the environment with a closed system. In reality, there are very few closed systems. Some systems have more interaction with the environment than others. For example, a marketing oriented company that buys and sells many products and services is a highly interactive system while a small private group of people that get together to discuss fruit juice making will have less interaction within the environment.

### 3.0.3 Stable and Dynamic System

System can be classifies as stable or dynamic. A stable system is one in which changes in the environment results in little or no changes in the system. Example, a small company that produces wooden building blocks for children might be very stable because of availability of raw materials

A dynamic system is one that undergoes a rapid and constant changes due to changes in its environment. For example, most computer manufacturers are dynamic. Every few months, changes in computer technology cause companies to develop new products, approaches, and manufacturing techniques.

Developing effective system for dynamic organisation can be

extremely difficult, by the time a system is developed, the company may have completely change its direction. System developed for a dynamic organisation have to be adaptive and very flexible.

### 3.0.4 Adaptive and non-Adaptive Systems

The concept of adaptive and non-adaptive systems are related to stable and dynamic systems.

Adaptive system is one that response to a changing environment. In other words, an adaptive system is one that monitors the environment and undergoes changes in response to changes in environment.

A non-adaptive system is one that does not change in environment. Example, many of the manufacturing companies.

### 3.0.5 Permanent and Temporary Systems

System can be permanent or temporary.

A permanent system is one that is or will be in existence for a long period of time usually ten years or more. Many corporations are permanent system, such as NEPA, Civil Service, NITEL, etc. for over a hundred years.

A temporary system is one that will not be in existence for a long period of time. In some cases, temporary system exists for less than a month. Some big investments are set up to be temporary.

## 3.1 PROJECT FEASIBILITY

The purpose of the feasibility analysis is to select the "best" solution to the problem. The "best" solution is the one that is the most cost-effective of all the solutions that are considered.

Feasibility study is also carried out in order to prevent wasting many months of efforts and many thousand of naira if the project is too large, too uncontrollable, or simply impossible to carry out.

The feasibility study is a miniature systems analysis and design efforts that entails an exploration of alternatives design options and an analysis of the costs and benefits of each alternative. Usually, the number of alternatives that can be considered is limited by time, money and availability of key personnel.

The performance expected of the system is defined. This is accomplished by identifying general constraints, specific objectives, and the outputs by which these objectives are to be accomplished. outputs are illustrated by sketches, called layouts, so that the user of the system can visualize the information that the system will provide. Usually, there are a large number of potential, or alternative systems that can produce the desired outputs and a feasibility analysis must be performed to select the best alternative.

### 3.1.1 Evaluating Proposed Project

After looking at broad alternative solutions a short list of solutions is kept. These solutions are further evaluated to find out the following:

(i) Technical Feasibility.

The importance of technical feasibility is to see whether the technology needed is available and if available whether it is used.

(ii) Operational Feasibility.

This helps in finding out whether the proposed solution can fit in with existing operations and whether the right information at the right time is provided to users.

(iii) Economic Feasibility.

In evaluating proposed project, one need to know whether finances are available for implementing the proposed solution and whether the money spent is recovered by the savings or the better user satisfactory.

### 3.1.2 Cost - Benefit Analysis

A cost-benefit analysis is necessary to determine economic feasibility. The primary objective of cost-benefit analysis is to find out whether it is economically worthwhile to invest in the project.

The analyses of cost-benefit of a given company provide management with the data necessary for directing its policies towards the

maximization of profits from the use of available or contemplated resources. In as much as budgeting is the planning of future operations, it is obvious that such planning must consider cost and benefit analysis.

Cost data come from the production-cost budget, the distribution-cost budget, and the general and administrative-cost budget. The behaviour of costs in relation to production and sales volumes has been studied in the preparation of the various cost budgets. In each of these budgets, costs have been broken down into fixed and variable components.

Some of the elements of cost which must be considered by the management or cost accountant include:

(i) Equipment Costs:

These includes capital costs or leasing costs of computer and the peripheral devices.

(ii) Installation Costs:

The cost of erecting new building, if necessary, for the computer room would be considered and if not necessary, it would be dropped.

(iii) Developing Costs:

Software consultancy or change over costs, etc. must be put into consideration.

(iv) Personnel Costs:

Staff training, staff recruitment or relocation, staff salaries, allowances and pensions are highly important to the management. Other costs are redundancy payments, over heads, etc.

(v) Operating Costs:

The operating phase is the period during which the system is used. Activities include changing over to the new system, monitoring the system's performance, and establishing procedures for making modifications or changes to the system. This phase continues for the rest of the system's useful life. Hence, the following costs should be considered.

(a) Consumable Cost

(b) maintenance Cost

(c) Accommodation Cost

(d) Insurance, Power, Telephone Cost

(e) Standby arrangements

(f) Comparative costs of alternative methods of processing.

## 3.2 PRINCIPLES OF PROCEDURES

Analysis of a system is the procedural study of its operation with an attempt to discover what its basic problems are. All the facts that have been gathered must be examined in order to make a proper assessment of the existing system. The temptation to include ideas which have not fully worked out in the new system must be resisted.

The aims of this stage is to ensure that all feasible alternatives are eventually produced. The full detailed study of the current system, including its procedures, information flows, and methods of work, organisation and control are considered.

The present system must be criticised against the principles of procedure after which the strengths and weakness of the system should be apparent. The principles of procedures used are:

(i) Purpose:

Are the purposed being satisfied? Are they still necessary? could they be achieved in any other way?

(ii) Economical:

The benefit of the present system should be related to the cost of producing them. More economical methods, if any should be considered.

(iii) The work flows of the present system should be examined to

see if they are satisfactory.

(iv) Specialisation/Simplification/Standardisation:

The present system could be criticised to ascertain if specification, simplification and Standardisation are being practised. The following questions would emerge; is the work capable of being carried out by machine? Can complex procedures be simplified? Are standard practices observed?

(v) Flexibility:

The system must be flexible. The effect on the system when there is a big increase or decrease in the volumes to be processed must be stated.

(vi) Exception Principle:

The principle of exception must be observed. Factors requiring action should be highlighted and not submerged in a mass of routine details.

(vii) Reliability:

The reliability of the procedure must be examined and provision for such events as staff sickness, machine breakdown, up-to-date equipment must be justified.

(viii) Form:

The information being produced must be in the form best suitable to the recipient. Hard copy could be produced if there is any need for it.

(ix) Existing System:

If a change is made, the equipment and other facilities currently being used that could be incorporated in the new procedure should be sorted out.

(x) Continuous Control:

The types of error that occurs could be controlled and if the controls are not satisfactorily, other types of controls could be used.

(xi) Time:

For meaningful action to be taken, the information produced must be quick and timely.

An important aim of the analysis is to produce a requirement specification. The requirement specification would be discussed with the user in order to obtain a requirement specification in an acceptance form. Estimates for alternative designs would be prepared, and the decisions to proceed with a particular design could be made.

## 3.3 DESIGN ELEMENTS

System design follows the project plan developed at the end of the feasibility study. The system selected in the feasibility study must be designed and developed before it can be operated for its users.

As soon as the design phase begins, the flow charts prepared during the feasibility study needs to be refined and reviewed for completeness and accuracy. The best way for the system to perform each of the required data processing functions would be decided. All functions will be performed in one of three ways:

(i) As a manual task

(ii) As an equipment (hardware) task, or

(iii) As a computer program (software) task.

All of the functions should appear on the system flow chart with the method of performance indicated by the appropriate flow chart symbols.

The design of a new system therefore, can be conveniently classified into the following elements:

### 3.3.1 Input Design:

Input design is the process of converting an external, user-oriented description of the inputs to a system into a machine oriented format. In most business systems, inputs are generated by devices operated by

humans. In these cases, the input design must take into account the human element in order to ensure rapid and accurate data entry.

Punched cards, when fed into a card reader, become a means of data entry. Therefore, prior to preparing a key punch instruction sheet, steps must be taken to ensure that the human-readable source document with which the key punch operator will work is well-organised. The fields to be punched must be easy to identify and must be in a sequence that will prevent error and speed up data entry.

Some rules that have proved helpful for the design of punched cards are:

(i) To enter the key field - that is, the field that is used to distinguish an individual record from all other records in the file - in the same column on all cards. The key field is usually the left most field.

(ii) Layout the field in a sequence that the operator can follow easily. This sequence is from left-to-right and from top-to-bottom on the page.

(iii) Group numeric data fields and group alphabetic data fields on the card.

(iv) Locate blanks to the right of the data fields, and not between them.

These rules should also be remembered when the source document is being designed.

### 3.3.2 Output Design

It is necessary to consider what is required from the system before deciding how to set about producing it. These requirements would have become clear as the project progressed. One need to consider the following:

(i) Form

(ii) Types

(iii) Volumes and frequency of reports and documents.

(iv) Choice of output media.

The design of system outputs starts in the feasibility study phase with the information service request (ISR). The IRS leads to preparation of the report specification layout sketches. In the design phase, these layouts become the reference for computer print charts for outputs to be produced by a printer.

Computer print charts differ from layout sketches in detail. They show the exact location of all of the lines of characters, the spacing between lines, totals and subtotals, and the editing of data fields. A print chart also serves as a detailed guide for the programme during the development phase.

Not all computer output is printed . Many of the outputs produced

by individual computer programs within a system sometimes called sub programmes - are intermediate results. These results are stored on files. Examples are the edited and sorted data transaction files and the current and updated master files. Therefore, file design is an important aspect of the systems design.

### 3.3.3 File Design

Data files are critical elements of computer-based business systems because many processing steps require the use of stored data. These elements are very much linked to input and output. Input are processed against the files to produce the necessary output.

Considerations involved in designing effective files are as follows:

(i) **The processing steps**

The processing steps that require the use of files are established as part of the general design of the system.

(ii) **The data that must be stored**

The data that must be stored in a master file are determined by examining the sources of the output data fields. These fields of information can be created in three ways. First, data can moved from an input transaction file to an output report area without modification.

Second, output data can be created as the result of arithmetic or logical processing operations. Third, output data can be obtained from a master file. In the first way there is no storage requirement. In the second, a master file may or may not be involved. In the third way, of course, a master file is required.

(iii) **Storage Media**

The selection of the storage media to be used for the file depends upon the manner in which the file is to be accessed and organised, upon the amount of data that must be stored, and upon how rapidly it must be made available to main memory. The different types of storage media includes magnetic tape devices, magnetic disks, and electronic storage devices such as magnetic bubble memory and charge-coupled devices.

### 3.3.4 Design Documentation

Before the design of a system can be considered finished, a complete design - phase report must be prepared and reviewed. Actually, system documentation is an on-going, cumulative process. The documentation that began in the feasibility study phase is added to throughout the design phase. At the end of the design phase, this documentation includes a complete technical specification of the external and internal aspects of the system. The external specification describes

the design of the human-oriented system inputs and outputs and the system test requirements. The internal specification relates to the computer program and its components. It includes the data flow charts, the file design, and the requirements for testing the computer program.

The design specification is the "blue print" that is used to "build" the system in the development phase.

### 3.3.5 Design Review

After all of the design phase activities and documentation have been completed, a review of the project is held by the management of the organisation that will use the system. the purpose of this review is to decide whether or not to proceed with the development of the system. The design review is a critical review, because approval initiates the development-phase activities.

The cost of the resources required to develop the actual system usually are much greater than the cost of studying the problem and designing the solution.

The outcome of the design review may vary from approval to proceed to cancellation of the project. Often, certain activities are "cycled" back and redone before approval is granted. This is an example of the life cycle at work. After a favourable design review, the project is ready to enter the development phase.

## 3.4 CHANGE OVER

Conversion can be defined as the performance of all the activities that result in the turn-over of a new system to its user. Conversion has two parts. These are:

(i) The physical conversion of procedures, program, and files.

(ii) the actual change-over to the new system.

The first part must be completed before the end of the development phase, and the second part upon entry into the operation phase.

The way in which change-over to the new system is planned and accomplished can have a major effect upon its performance and acceptance by its users. The change-over from the old to the new system may take place when:

(i) the system has been proved to the satisfaction of the system analyst and the other implementation activities have been completed.

(ii) User managers are satisfied with the results of the system tests, staff training and reference manuals.

(iii) The target date for change-over is due.

There are three general methods for changing over to a new system. These are parallel operation, immediate replacement, and phased replacement. No single method is best for all situations. each has

its advantages and disadvantages. The best method depends upon the particular conversion circumstances.

### 3.4.1 Immediate Replacement

Immediate replacement means that the old system is discontinued and the new system is put into operation on a specified date. This is the most risky change over and unless there is an alternative (fall back) system, the consequences of failure might be catastrophic.

However, there are some circumstances under which immediate replacement is necessary. If a high percentage of the output is new, there may be no alternative. If the system is relatively noncritical, so that change over problems would not trigger a disaster, immediate replacement may be less expensive than other methods.

Time and schedule pressures may rule out any other choices. Risk is reduced if a fall back system is available.

### 3.4.2 Parallel Operation

Parallel operation means that data are processed at the same time by both the old and the new systems.

Its main attraction is that the old system is kept alive and operational until the new system has been proved for at least one system

cycle, using full live data in the real operational environment of place, people, equipment and time. It allows the results of the new system to be compared with the old system before acceptance by the user, thereby promoting user's confidence.

Advantages of parallel operation are the opportunity to compare the output of both systems and the availability of the old system as a back up.

One disadvantage of parallel processing is its cost. Personnel and equipment resources must be provided for the operation of two systems. These resources are not only costly; sometimes they may also not be available.

Another disadvantage of parallel operation is the delay in changing over to the new system. People tend to cling to what they are familiar with, and, as a result, the problems that the new system was designed to solve could be prolonged.

### 3.4.3 Phased Replacement

Phased replacement is a gradual approach in which complete change-over to the new system takes place, incrementally, over a period of time. Gradual change over can be achieved by operating the new system with increasing larger volumes of data and/or introducing parts of

the new system and replacing the corresponding parts the old one by them as they are checked out under actual operating conditions.

Often, phased replacement is the most effective method of changing over to a new system. It has several advantages. users can become familiar with the system. Errors need not cause catastrophic failure, and often they can be corrected quickly. Phased replacement is not as expensive as parallel operation and it usually can be handled with existing resources.

Frequently, circumstances limit the usefulness of phased replacement. Examples are lack of time for the gradual replacement of one system by another and many significant differences between the old and the new systems.

One danger is the possibility that some errors may creep in and not be detected until the entire system has been in operation for a considerable period of time.

However, regardless of the change over method selected, introduction of a new system into an operational environment never is trouble-free, and recurring crises are to be expected during change-over.

# CHAPTER 4

# PROGRAM DEVELOPMENT AND IMPLEMENTATION

## 4.0 REASONS FOR PROGRAM DEVELOPMENT

Companies may initiate program development projects for a number of reasons. these includes;

(i) Problems with the existing system.

(ii) The desire to exploit new opportunities

(iii) Increasing competition

(iv) The desire to make more effective use of information

(v) Organisational growth

(vi) A change in the market or external environment.

However, the program developed must be tested with both artificial and life data in order to ascertain its quality before it is finally put in place for use by the users.

## 4.1 OPERATION MANUALS FOR THE SYSTEM

The system operation is being designed for users with little knowledge of computer. In order to operate the system effectively and efficiently, the following should be done:

## Starting point

(i) Boot the system (computer). Assuming the system has no hard disk, there are two ways of booting the system. These are:

(a) Cold Booting: This is done when the computer is still off. Insert DOS diskette in to drive A and switch on the computer.

(b) Warm Booting: This is done when the computer is on. Insert DOS diskette into drive A hold down Ctrl, Alt and press Del key.

(ii) Set data and time. The A prompt will appear on the screen (i.e A>).

(iii) Remove DOS diskette from drive A.

(iv) Insert the DBASE diskette into drive A.

(v) Enter the command at the A prompt (A>DBASE) and press Enter key. The Dot ("-") prompt will come on the screen.

(vi) Type on the ("-") Dot prompt, do menu and press Enter key. The following messages will appear on the screen. "Enter password".

(vii) Type in password (BGT NEWS) and press Enter key. After keying the password, some display are shown after which the main menu screen comes up.

## DEMONSTRATION

**MASTER BUDGET SUMMARY**

**Main Menu**

1. Revenue
2. Operating costs
3. Exit

Enter your choice [1,2/3]

1.

**REVENUE**

A. Months

B. Year to Date

C. Budget for the year

Enter your choice [A,B/C]

2.

**OPERATING COST**

A. Months

B. Year to Date

C. Budget for the year

Enter your choice [A,B/C]

3. EXIT

If 3 is pressed, the question are you sure you want to quit along with me. Y/N? will appear on the screen.

# CHAPTER 5

# SUMMARY

## 5.0 LIMITATIONS

It was not very easy to carry out the feasibility study of this project due to various constraints and limitations encountered during the course of the project.

The main constraints are described below:

(i) Availability of Information: Detailed information from the designated officers was difficult to obtain due to need on their part to ensure confidentiality. The management thought they were selling out their secrets which ought to remain within them.

(ii) Time Constraints: A more detailed investigation could not be carried out due to limited time.

Regardless of the complexity of the operation and the time constraints, a reasonable software was produced for the proposed system.

## 5.1 CONCLUSION

The effectiveness and successful implementation of any system depends on the operators of the system. It is thus envisaged that

operators of the system. It is thus envisaged that operators of the computerized budgetary system would be sufficiently qualified and that they would be able to appreciate the system which have been designed and tailored to the need of the organisation.

This project work covers the current and potential scope of operations of New Engineering (Nig.) Limited. It is however pertinent to state that the procedures prescribed herein are not rigid or unchangeable but may be modified from time to time, where there is reasonable justification, to suit the models of operation.

## 5.2 RECOMMENDATION

Computers were introduced to various organisations for certain reasons. These includes:

(i) To improve the speed and efficiency in collection, manipulation, storage, reporting and dissemination of data.

(ii) To enhance efficiency of service by reducing administrative cost, avoiding data duplication and offering greater management control and accountability.

Since Computerized Budgetary system would eliminate moat of the tedious manual work involved in the budgetary system of an organisation,

it is hereby recommended that the planned articulated change from a manual system to a computerized system be embraced due to the fore-going characteristics of computers.

It is expected that the management would have deep insight into the budgeting processes and procedures in order to correct their luke warmness and embrace a computerized budgetary system as an efficient managerial tool, vital to planning, coordinating and controlling functions. It is also expected that the managements would establish departmental budgets, relating the responsibility of executives to the requirements of the policy of the company and the continuous comparison of actual with budgeted results, either to secure by individual action the objective of the policy or to provide a basic for its review.

The choice of the topic would help in emphasising the importance of computerized budgetary system in liability companies ad thereby enhancing team works within the organisation in order to achieve the Organisational goals.

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## 5.4 APPENDIX 1 - FORM FOR GENERAL AND ADMINISTRATIVE-COST BUDGET.

| Item | Month | | | Year to date | | |
|---|---|---|---|---|---|---|
| | Budget | Actual | Variable | Budget | Actual | Variable |
| | | | | | | |

## APPENDIX 2 - FORM FOR THE FINANCIAL BUDGET.

**FINANCIAL BUDGET** **YEAR** ---------

| | January | February | Cumulative |
|---|---|---|---|
| Cash Balance - beginning. | | | |
| Cash Balance from operations. | | | |
| Total Available Cash | | | |
| Less: | | | |
| Plant & Equipment Expenditures. | | | |
| Interest. | | | |
| Dividends. | | | |
| Debt retirement. | | | |
| Others. | | | |
| Total Cash requirements. | | | |
| Cash Balance or Deficit | | | |
| Add: | | | |
| Short-Term Loans. | | | |
| Long-Term Loans. | | | |
| Capital Stock Issues. | | | |
| Cash Balance - End. | | | |
| | | | |

## APPENDIX 3 - MASTER BUDGET SUMMARY.

| tem/Account | Month | | | | Year to Date | | | | Budget for the Year. |
|---|---|---|---|---|---|---|---|---|---|
| | | | Variation | | | | Variation | | |
| | Budget | Actual | Amount | % | Budget | Actual | Amount | % | |
| evenue: | | | | | | | | | |
| ontracts. | | | | | | | | | |
| obs. | | | | | | | | | |
| upplies. | | | | | | | | | |
| eposits. | | | | | | | | | |
| apital. | | | | | | | | | |
| oan Received. | | | | | | | | | |
| thers. | | | | | | | | | |
| | | | | | | | | | |
| tal | | | | | | | | | |
| | | | | | | | | | |
| erating Costs: | | | | | | | | | |
| gineering Dept. | | | | | | | | | |
| General & Admin. | | | | | | | | | |
| Dept. | | | | | | | | | |
| Finance & Supplies | | | | | | | | | |
| Dept. | | | | | | | | | |
| Total | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Net Result. | | | | | | | | | |
| | | | | | | | | | |