CAPITAL BUDGETING IN A THIRD WORLD TOBACCO COMPANY: A CASE STUDY OF NIGERIAN TOBACCO COMPANY PLC, ZARIA

BY

KAURA YAKUBU D.

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DEDICATION

This work is dedicated to my Late Parents, Children; Mbohwheng, Thyin, Late Gyujii, Nhyellah and Yangmen.

DECLARATION

I am fully responsible for the assembling, compilation and Production of the excellent ideas of the various authors/writers on the subject matter and other areas covered in the research work.

Therefore, in crediting my sources of ideas, all references made, to text books, pamphlets Bulletins, Reports and Journals have been acknowledged.

KAURA YAKUBU D.	_____	_____
NAME	SIGN	DATE

CERTIFICATION

This Project entitled "Capital Budgeting in a Third World Tobacco Company": A case study of Nigerian Tobacco Company PLC, by KAURA YAKUBU D., meets the regulations governing the award of the degree of Master of Business Administration of Ahamadu Bello University, and is approved for its contribution to knowledge and literary presentation.

SUPERVISOR	5/12/97. DATE
HEAD OF DEPARTMENT	DATE
EXTERNAL EXAMINER	DATE
DEAN POSTGRADUATE SCHOOL	26/2/98 DATE

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ABSTRACT

The efficient allocation of scarce resources of a business firm has been the very question bothering businessmen and Economists alike. There has been effort by Researchers in the business field whose main contention has been on how to build models and mathematical expressions that will help to solve the problem of determining optimal allocation of firms scarce resources.

It is quite notable in the fields of both finance and Economics, that renounced Economists like Boan, Wicksell and Irwin Fisher have laid some theoretical foundations for analyzing investment decision in a more systematic and economical manner.

It is certain that in business decisions; capital budgeting which is a part, involves the application of large initial Capital (cash outflow), which in the mind of the investor, are inflows of cash, which are always uncertain.

Since large sums of money are always committed for long periods of time, it is expected that firms need to be more careful in identifying projects and selecting the more viable ones which, they can undertake. Infact the selection is very necessary, since the firm may have financial constraints.

This selection is done through the application of the various appraisal methods of capital budgeting.

This project work is aimed at studying the capital budgeting decision of Nigerian Tobacco Company (NTC), to ascertain whether its. (CB) application in the company conforms with the theoretical standards, as it is expected in an ideal situation.

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CHAPTER ONE

1.1 INTRODUCTION

Efficient allocation of capital is one of the most important functions of financial management in modern times. This function involves the firm's decision to commit it's funds in long term assets and other profitable activities. The firm's decisions to invest funds in the long term assets are of considerable significance since they tend to influence the firm's wealth, determine it's size, set the pace and direction of it's growth and affect it's business risk.

The investment decisions of the firm exceeding one year are commonly known as capital budgeting or capital expenditure decisions. Therefore capital budgeting decision may be defined as "the firm's decision to invest it's current funds most efficiently in long-term activities in anticipation of an expected flow of future benefits over a series of years. Generally, the firm's capital budgeting decisions will include addition, disposition, modification and replacement of long-time, or fixed assets e.g.mechanisation of a process, choosing between alternative machines expanding the business, introducing a new product etc.

Since capital budgeting decisions are among the most crucial and critical business decisions, special attention is given to them because:

i. They have long-term implication for the firm and influence it's risk complexion.

ii. They involve commitment of large amount of funds.

iii. They are irreversible decisions.

iv. They are among the most difficult decisions.

Good capital budgeting will improve the timing of asset acquisitions and the quality of assets purchased. The important steps involved in capital budgeting process are:

a. Project generation

b. Project evaluation

c. Project selection

d. Project execution.

These steps are important, and to make the process more effective, a budget constraint has to be imposed on the execution of projects and a system of following up the results of completed projects may be established. The nature of the formal system for the capital budgeting process will depend on the size of the firm and nature of projects, and their number, complexity and diversity.

The capital budgeting decision is characterised by costs and benefits that are spread out over several time periods. This then calls for the consideration of time value of money in order to evaluate the alternatives correctly. The usual thing is to consider risk as well as time value of money or at the sametime, projects can be evaluated under a situation of certainty - i.e. costs and benefits are known, though it is difficult to consider time value of money without incorporating risk factors.

Because the capital budgeting process is long term in nature, there is always the need to develop a methodology for translating in future inflows to the present. Therefore in capital budgeting, the following areas usually form the basis for the capital budgeting decision:

a. Time value of money - where an understanding of a compound sum, present value, annuities and yield help us to determine the present and future value of our investments.

b. Valuation of sources of financing - i.e. determination of required rate of return and current value for bonds, preferred stocks and common stock -i.e considering what the organisation pays for the use of these funds.

c. The capital asset pricing model - where individual asset returns are related to market returns.

e. Risk in capital budgeting.

Since the objective of financial management is to maximise the market value of the firm and the wealth of the share holders, it is proper that we determine the appropriate mix of profitability and risk in order to achieve this objective.

The techniques or criteria available for the valuation of projects are principally of two types:

1. Traditional criteria - which may include:
   i. Pay back period (PB)
   ii. Accounting rate of return (ARR)

2. Discounted cash flow (DCF) criteria - which include:

   i. Net present value (NPV)

   ii. Internal rate of Return (IRR)

   iii. Profitability index or Benefit - cost return ratio (PI).

Infact different firms may use different methods (ones listed above), but which method is appropriate for a particular purpose of the firm will depend upon the circumstances. A large company may use more than one techniques to appraise each of it's investment while a small firm may contend with - only one technique which involves minimum funds and time. Though the appraisal techniques will help management in making decisions objectively it must still exercise - it's common sense and judgement in making the decisions.

Despite the increasing importance of capital budgeting solutions to some of its problems are still proving difficult. Dominant among the problems is the lack of a sound theoretical or sustainable operational way of handling the problem of uncertainfy. This problem is still being encountered, even though prediction and measurements of receipts and costs have been made easier by advances in economic forecasting, econometrics and budgetary control.

Therefore, this research work is limited in scope to finding out how the company, chosen as the case study, keeps itself abreast of the capital budgeting techniques

that are used in evaluating investment proposals. Whether or not the company employs the budgeting techniques, and how generally it is able to deal with its problems of uncertainty.

1.2 STATEMENT OF THE RESEARCH PROBLEM

As already highlighted in the introduction, capital budgeting is aimed at increasing the wealth of the firms. Put in another way, it means increasing the market value of the firm's shares through efficient allocation of resources, or strictly in this case the capital. It is of considerable importance or significance since it tends to determine it size, set the pace and direction of its growth and affect its business risk.

Though there is global acceptance of its objectives, the techniques used in arriving at these decisions have continued to change over time. Significantly, the most fundamental change has been the tendency to progressively tap the benefits of capital budgeting.

The dynamism of these techniques has been necessitated by the phenomenal growth in the size of business enterprises, improved and efficient method of operations, the advent of computers and to some extent the number of capital budgeting decisions made in any given period under consideration.

Profoundly, this is basically clear and simple, since accurate budgeting decisions will mean rise in the market value of the firm's shares, all things being equal -

which is the ultimate goal of every firm, investors, the public and other interested parties. Strictly speaking, because of anxiety and doubt, one may wonder what constitute capital budgeting principles and to what extent are these principles being practised in Nigerian companies? Do the companies leave things to chance or do they really employ the budgeting techniques to appraise their capital expenditure programmes, and how often do they do so? Is there any sustainable success in the application of the techniques? These questions essentially constitute the research problem.

1.3 AIMS AND OBJECTIVES OF THE STUDY

Presenting the process and techniques of capital budgeting in its theoretical frame work as can be expected in an ideal situation will form the base for evaluating or ascertaining the process and techniques of capital budgeting as practised in the Nigeria Tobacco Company (PLC) Zaria.

Therefore the principal objective of this research work is to find out whether the process and techniques of capital budgeting practised in the company under study do conform with the theoretical standards. It is my desire and hope also, that, the study will go along way to throw more light or in sight on the true nature of the problems faced in capital budgeting decisions. It is expected that suggestions to be made later will be of help not only to the company, but the public in general.

1.4 SCOPE OF THE STUDY

The research work covers discussions on the theoretical aspects (frame work) of capital Budgeting ranging from the basic capital Budgeting process and concepts to the applications of the preferred techniques to specific investment projects. Areas of concern about the applicability of capital budgeting techniques in the Nigeria Tobacco Company include methods like the payback method, internal rate of return, net present value and profitability index. The policies of the company on capital budgeting and problems encountered in their capital budgeting decisions also form part of the study.

1.5 SIGNIFICANCE OF THE STUDY

Since investments in fixed assets have long term duration, it is expected that, that could determine the future growth and prosperity of the firms. Investment in fixed assets means tiding up funds which cannot be used to finance other projects of short duration or the general day to day administration of the firm. It is a fact that business has a lot of risks which can plunder a firm into serious business misfortune or failure that can lead to bankruptcy and even eventual folding up for a wrong investment decision.

Funds used by firms are either borrowed on interest, or provided by owners as capital investment or retained earnings. Since investment proposals will usually require large capital outlays, it is then desirable to have an optimal approach to capital budgeting decisions.

Hence capital budgeting techniques are designed so as to aid management in making rational economic decisions in determining the profitability of investments and also, based on sound judgement, choice is made from among alternative investments. For companies to be able to avail themselves of the use and importance of these tools, they must have firm knowledge and discipline on the budgeting techniques, so as to ensure that they make reasonable investments to maximise the wealth of share holders, fulfil obligations to creditors, and justify the use of funds borrowed.

1.6 RESEARCH METHODOLOGY:

The procedure used in the collection of data include in the first instance, the use of text books, and journals, documentary records of the company, the use of questionnaires and personal interview of officers responsible for budgeting decisions and operations in the Nigeria Tobacco Company (PLC).

1.7 DELIMITATIONS.

All the Nigerian Tobacco Companies at different locations in Nigeria can be a subject of study in this research project, at least to broaden knowledge. But all could not be contacted because of their number and the fact that they are located at different locations, which further compounded transportation and other attendant costs that would be incurred if all companies were to be visited.

1.8 LIMITATIONS OF THE STUDY.

Some of the limitations or problems encountered in this research work include:

i. Obtaining the data - this was anticipated and it turned out to be so, because of the usual "Secrecy" syndrone, especially on matters that concern finances.

ii. It was difficult in making contacts with officers which I had made previous appointments with them. Similarly the questionnaires administered were not filled and returned in good time and some were not filled at all.

iii. Truly speaking I hadly could finish the research work because of time constraint and financial problem.

iv. Accurate results for the final analysis made depended largely on the degree of accuracy and reliability of the persons who recorded the historical data. More so the data analysis was based also on my knowledge and understanding of the subject matter and methods of collecting of data which are subject to human error.

v. More partinently, I could not lay hand on Nigerian authored text books on the subject matter.

CHAPTER TWO

LITERATURE REVIEW

The idea of capital Budgeting became more real and challenging when in 1951 two books were published, one written by Joel Dean and one by Friedrick and Vera Lutz. These two books stirred up people to start thinking about investment decisions, and as a result many started writing papers and articles on the subject. At the time of publication of the textbooks, many of the largest firms in U.S.A. were using a mixture of payback method.

Dean (1951) in his book "Capital Budgeting" measuring the productivity of Capital", recommended the use of the Internal Rate of Return method. The method rapidly became accepted by a wide range of industrial firms in U.S.A., especially the chemical and oil firms.

Though there was confusion about the relative merits of the internal rate of return and Net present value method, Lorie and Savage (1955) in their article "Three problems of Capital Rationing" summarised difficulties associated with the internal rate of return method in evaluating mutually exclusive investments, and in other situations where investments had to be compared.

The confusion continued until Jack Hirchliefer's publication in the Journal of Political Economy (1958) in which he drew heavily on the classic book by Irwin Fisher (1930) and laid sound foundation for understanding the similarities and differences between the two methods.

After that, then Bierman and Smidt (1975) published the "The capital Budgeting Decision".

Similarly, William Sharpe (1964) published a paper introducing the Capital Asset Pricing Model, after which many scholars like Fama (1968) Hamada (1969), Lintner (1965), Mossin (1965) and Stapleton (1971) have attempted to link that model to the Capital budgeting decision problem.

Long before these developments, it is more than a generation now, finance academics have taught the net present value method as the correct procedure to use in making capital budgeting decisions. However, recent survey statistics have shown that in practice, majority of corporations now use some version of the discounted cash flow analysis (e.g. IRR & PI) to evaluate their projects.

A great deal of the research work on capital Budgeting was conducted in developed Countries, notably among them are Canada and the United States. Though related research work was also carried out in Nigeria, the volume and dept of the work is far less than the contributions made by researchers in the developed nations.

Notably among the researchers on the subject matter is James C.T. Mao (1970), whose work was specifically on "Survey of Capital Budgeting: Theory & Practice". In his survey work he interviewed eight medium and large Canadian firms which were in the Electronics, Aerospace,

Petroleum household and office Equipment industries, based on his realisation that these firms favoured some investment criteria. The study revealed their predominant use of the payback period (PB) and Accounting Rate of Return (ARR) but however, made use of the Internal Rate of Return (IRR) method in combination with the payback period. He also discovered that such firms considered risk in their capital budgeting decisions through the use of the risk-adjusted discount rate approach.

In a similar study of 100 large Canadian firms, C.G. Hoskins and J. Duan (1962-1972), investigated the adoption of discounting and non-discounting appraisal methods. The result of the study indicated increased adoption of the discounting methods as the percentage of firms using these methods rose from 35% in 1962 to 79% in 1972. The study also revealed that firms mostly accounted for risk by adjusting the required rate of return and by the use of sensitivity analysis techniques.

Accordingly, Thomas Klammer (1972) studied 369 large U.S. firms, where his findings indicated that the use of the discounting techniques rose from 19% in 1959 to 59% in 1970. This indicated the increased acceptance or adoption of the discounting techniques among the large U.S. firms, and the declining tendency to use the non-discounting appraisal method.

Furthermore, Klammer and Hakka etal (1985) hailed

that there is no correlation between the adoption of sophisticated investment appraisal techniques and corporate performance. According to them, the influencing factors are more likely to be the size of the business and the degree of uncertainty in the environment. This means larger businesses are more inclined to use formal sophisticated methods, while smaller firms will prefer the simple methods or heuristics. Also, firms may be encouraged to use multiple methods of appraisal, including simpler ones because of uncertainty.

According to Pike (1982), the preferred method in U.K. appears to be the payback because of its simplicity of calculation and comprehension, but it is more than likely that multiple methods are used including IRR and NPV.

To overcome the problem of uncertainty, Hertz and Thomas (1993), proposed the use of probability distribution using NPV and IRR methods to estimate the resulting cash streams of an investment proposal. The probability distributions are applied to the estimated cash flows to arrive at the expected value. In place of obtaining probability distributions, the adjustments of the discount rate is used to reflect management's attitude to risk. THis method is known as risk discounting. The Capital Asset Pricing Model (CAMP) can be used to establish the appropriate rate of discount.

Hespo and Strassman (1965), proposed the use of

stochastic decision trees as an alternative to the risk analysis. Similarly, Markowitz (1959), proposed the use of portfolio analysis as this may be appropriate for decisions in which projects are not mutually exclusive and form part of the overall corporate strategy.

It is appropriate to mention at this point that information theory would guide us to seek more information, whether perfect or not, to improve our position in the face of uncertainty.

In another study of 268 large U.S. firms, Lawrence J. Gitman and John R. Forrester Jr. (1976), in a "Survey of Capital Budgeting Techniques used by major U.S. firms". Confirmed the use of the non-discounting techniques which complemented the discounting techniques. The study also revealed the fact that Capital rationing in the firms became obvious because of the limit on the capital expenditure imposed by management. To account for risk the firms would always increase the minimum rate of return.

?More interesting also is the study carried out by SCHALL, SUNDEN and WILLIAMS R. GEIJBREK JR. (1978), involving 424 large firms, 86% of the firms used more than one Budgeting Techniques, more than 86% used the discounting techniques. 36% of the firms used a quantitative assessment of individual project risk, 4% did not assess risks, while the other 60% assessed risk only subjectively. In assigning projects to risk classes, only 23% did so, while 77% did not assign

projects to risk classes. Of the firms, 19% used different capital budgeting techniques for different risk classes, while the other 81% used the same capital budgeting techniques for all projects. In assessing individual project risk by using probability distribution of cash flows, only 25% of the firms used that. Most of the firms (78%) did not take risk into account for risk adjustment. 78% of the firms employed either the payback period or the discount rate method as their basis.

Following similar researches made in Nigeria, Francis O. Okafor (1983), surveyed 40 Nigerian firms comprising of quoted and non-quoted companies drawn from various industries. The study revealed equal adoption of both the discounted and non-discounted capital budgeting techniques by the respondent firms. The study further revealed that the market research and Research and Development departments were responsible for initiating new projects. His findings indicated that firms lacked a proper understanding of what constituted a cash flow and there was a wide spread misconception about the cost of capital to be used in evaluating investments. Majority of the sampled firms (83%) used project appraisal techniques for selecting from among mutually exclusive4 projects; 97% of the firms indicated that they encountered business risk and the predominant methods of adjusting, risk was by raising the required rate of return and by shortening the payback period, while a few firms do not take risk into consideration.

The major cause of internal capital Rationing among the firms was the limit of CApital expenditure imposed by management; 68% of the firms abandoned projects during Capital rationing; while most of the non-quoted firms preferred seeking for financing partners rather than abandoned projects. Most of the firms account for inflation by incorporating inflationary rates into their calculations and a few firms claimed they do not account for inflation. The study also showed that 76% of the firms do not abandon projects, for whatever implications they later on discovered, when the project has been started.

Despite the importance of the discounted cash flow techniques, the techniques have sharply been criticised, especially by those in business policy and strategy.

According to Hayes and Garvin (1982), the discounted cash flow methods cause a systematic under evaluation of projects because, among other reasons, the strategic value of project is ignored. As an alternative, they suggested that major investment decisions be made simply on the basis of judgement and strategic considerations, without subjecting them to "the distortions" of quantitative methods.

But as Altman and Subrahmanyam (1984) in "Recent Advances in Corporate Finance", would argue it, they contend that such failures, when they occur, only reflect the shortcomings of the particular evaluation technique used and not the quantitative approach itself.

Generally, the flexibility of a project undertaken by whatever class of industry needs to be given serious attention. Such flexibility of a project seems to be nothing (or less) than a description of the options made available to management as part of the project.

The contingent claims Analysis Approach, which seems to have a clue on the analysis of very complex investment projects (e.g. oil exploration) as put forward by Altman and Subrahmanyamn (1984) emphasised much on the need to consider the options available to a firm. Mason and Ruback (1983) call such options "Operating Options" which, essentially portray the fact that management of a firm has the option to select between any alternatives by weighing the value of the options (e.g. the use of oil or coal) in capital budgeting considerations. The value of an option is an increasing function of both the duration of the option and the amount of uncertainty surrounding the future value of the underlying asset. But as a practical matter, however, the option values are rarely incorporated into Capital Budgeting process, except, perhaps in a quantitative fashion.

According to PADDOCK SIEGEL AND SMITH (1982) a firm can choose when to initiate a project. According to them, such option can be evaluated, particularly in the area of leases and exploration. The value of such option (exploration) was analysed by TOURINHO (1979) using the BLACK SCHOLES option pricing model. According to him, natural resource companies can produce even in areas they

estimate development and extration costs to exceed the expected future price at which the resource can be sold, because they can choose when to initiate such development. As he put it, "it may pay to explore in high production cost areas in order to gain the option to produce if the price of the resource at some later date is higher than was expected".

According to MYERS (1977) option analysis is important to the proper evaluation of a firm's "growth opportunities". His analysis support the discounting of future net cash flows of a project to the present value. The methodology simply assumes that the firm is committed to under take the project before the implementation date, and not to go forward if conditions change before the implementation date.

While considering the fact that a firm could continue with its project up to the last year of its economic life, it sometimes becomes obvious for a firm to abandon a project at the conception of the idea or even when it has been started. To support the view of project abandonment, MYERS AND MAJD (1983) provided a quantitative analysis on the option to abandon a project. According to them, abandonment becomes obvious in large capital intensive projects like nuclear power plants which have long construction periods. Also, the idea of project abandonment is important in new products where their acceptance in the market is uncertain.

In conclusion, it should be understood that the

interactive effects between financial and operating flexibility can be quite strong for major long-term investment investment projects involving considerable uncertainty.

And although ignoring any single option may not introduce an important error in a project's evaluation, the cumulative error of ignoring all the operating options embedded in that project can cause a significant under estimate of its value. This is not, however, to say that standard techniques systematically and significantly undervalue all types of projects.

Many classes of projects provide few, if any, operating options and, for others, the cumulative value of all such options will be small. By neglecting the option components these techniques may overestimate the values of some projects by failing to recognize the losses in flexibility to the firm caused by their implementation.

CHAPTER THREE

THEORETICAL FRAMEWORK TO CAPITAL BUDGETING

3.1 Meaning of Capital Budgeting:

The firm's investment decisions may be for short-term or long-term. It is the long-term investment decisions that are referred to as capital budgeting or capital expenditure. Therefore, capital budgeting is the process of planning expenditures, committing of funds and executing long-term projects whose stream of economic benefits is expected to accrue over a period greater than one accounting period or one year. The capital projects would include land purchases, machinery, plant and operational equipment, a sales promotion campaign, acquiring of stocks in another company, all of which have long-term implications for the firm in terms of expenditures and benefits. Generally, the capital budgeting decisions usually involve addition, disposition, modification and replacement of the long-term or fixed assets.

Although, capital expenditure is incurred with the sole aim of reaping future benefits in terms of profits however, not all projects are designed or embarked upon to earn profits. This is typical of Government projects which are usually embarked upon for developmental purposes, some of which aid the profit oriented businesses indirectly, in executing their projects. Examples here may include, road construction, the

building of medical centres, the establishment of industrial estates, electricity projects, water projects etc.

The capital budgeting decision is not only concerned with the acquisition of the projects but even timings of estimated cost and cash flows of each project.

As already mentioned above, the capital budgets have long-term implications for the firm, and the projects for which the budgets are made usually required large sums of funds. The capital budgets are difficult to prepare because estimates of the cash flows over a long period have to be made and this involves a great degree of uncertainty.

In the capital budgeting, the profitability of each project has to be evaluated by using various techniques, the use of which should be free from biases and capable of clearly indicating whether the project should be accepted or not.

The unique characteristics of capital budgeting are:

1. The exchange of current funds for future benefits.
2. The investment of funds in long-term activities.
3. The accrual of potentially large anticipated benefits to the firm over a series of years. and;
4. The relatively high degree of risk involved.

In the investment decisions, it is cash flow (outflow and inflow) which is important and not the earnings determined in accordance with the accrual concepts of accounting.

3.2 IMPORTANCE OF CAPITAL BUDGETING

Capital budgeting involves the entire process of planning expenditures whose returns are expected beyond one year. The capital budgeting decisions are among the most crucial and critical business decisions in a firm. Because of their importance, special care needs to be taken in order to avoid costly decisions. They are especially importance because of the following reasons which have already been highlighted in the introductory part of the write-up.

Firstly, they have long-term implications for the firm. This can be advised to the fact that the effects of capital budgeting decisions extend into the future, and therefore will have to be endured for a longer period than the consequences of current operating expenditure. The firm's decision to invest in long term assets has a serious influence on the rate and direction of its growth. This pre-supposes the fact that a wrong decision proves disastrous for the long term survival of the firm. Unwanted expansion of assets will result in unnecessary heavy operating costs to the firm. Conversely, inadequate investment in assets would make it difficult for the firm to complete favourably with its competitors, and avoid the loss of a portion of its share of the market to rival firms.

Secondly, the need for large amounts of funds for capital budgeting makes it imperative for the firm to plan its investment programmes very carefully, and to

make advance arrangements for procuring funds. Therefore, a firm contemplating a major capital expenditure programme, may need to arrange its financing several years in advance to be sure of having the funds required for the expansion.

The capital budgeting decisions are also important because they are more difficult to make. The decisions require proper assessment of future events which are very much uncertain, it is very difficult to estimate the future benefits and costs of projects correctly in quantitative terms because of economic, political, social and technological forces.

3.3 RATIONALE FOR CAPITAL BUDGETING

In capital budgeting, cash forecasts are made, and the essence is to try as much as possible to determine the levels of cash disbursements and the cash inflows in any viable projects. Such forecasts could also help sometimes to avoid or eliminate some costs - which a firm may be incurring in the form of repairs to an equipment currently in service. Instead, the firm could invest the funds in a new equipment which can be economically better than continuing with the repairs of the old equipment.

Capital budgeting assists in formulating a sound depreciation and asset replacement policy. Thus assets or equipments which are wearing away or stand the danger of becoming obsolete are replaced from time to time. Since such equipments usually cost large sum of money, their replacement has to be through long-term planning

for the availability of funds their procurement.

Sometimes it becomes obvious to replace manual work with machinery and expand production facilities in order to cover sales. The replacement or expansion are only possible through good capital budgeting which improves the timing of asset acquisition and the quantity of assets purchased.

The capital budgeting decision enables management in a decentralised company to liaise properly with the plans and operating targets of divisions or plants.

It also helps to eliminate duplication of projects among divisions and plants. Through it a firm can forecast its future cash requirement and select profitable projects in which funds can be invested.

3.4 PHASE OF CAPITAL BUDGETING

The principal steps in the capital budgeting process include:

1. Project generation and cash flow estimation;
2. Financial analysis and project selection;
3. Project implementation or execution; and
4. Project review.

Project Generation and Cashflow Estimation:

There are hardly any hard and fast rules about the origination of investment proposals in an organisation. The proposals can originate at any level in a systematic or haphazard manner. The investment proposals may fall into one of the following categories:

a. Consideration of a new project or venture to determine its viability and profitability through a long-term cost/benefit analysis.

b. Replacement of an old asset with a modern and more efficient one

c. Expanding operational capacity through the addition of new production capacity - plant, equipment, buildings.

d. Expanding operational capacity through addition of new product lines in the company's product mix.

e. Improving corporate image as well as the employee work environment through the introduction of pollution control equipment, recreational facilities and medical facilities.

f. Proposals designated to reduce costs in the output of existing products without altering the scale of production.

Where cash flows are expected from an investment proposal there is the need for proper estimation of benefits to be derived and costs to be incurred on the project, and these are measured in terms of the cash flows. The estimation of cash flows is a formidable task because the future is full of uncertainties.

Financial Analysis and Project Selection:

Financial evaluation entails:

a. The development of predetermined financial standard (rate of return) or minimum profit goals for the

company against which individual projects can be judged.

b. The use of mathematical techniques to rate and rank individual projects in terms of their profitability and relative acceptability and desirability. The evaluation of projects should be handled by an impartial group of people who have no personal motive to fulfil. More so, the criterion chosen to judge the desirability of projects must be one that is consistent with the firm's objective of maximising its market value and it should rank projects correctly.

What follows after the evaluation is the selection of those projects that are considered to be most desirable and profitable. Project approval is bound to be different from one firm to the other, since each may have different screening and selection procedures. Therefore, a project deemed desirable in one firm may be undesirable in another firm. Ideally, projects are screened at the multiple levels, while the residual functions of approving a project lies with the top management. Sometimes, it becomes obvious for the top management to delegate authority for the approval of a category of investment proposals, but with strict control through limiting the amount of cash outlay, prescribing the selection criteria and holding the lower level management accountable for results.

Project Implementation or Execution:

At the implementation stage, funds are appropriated for the execution of the selected investment proposals. The formal plan for the appropriation of funds is referred to as the capital budget. When funds have been appropriated, it is now the responsibility of the project committee or the top management to ensure that funds are spent strictly in accordance with appropriations made in the budget. Therefore expenditures on project execution should be duly authorised.

Project Review

In order to ensure successful execution and also avoid serious losses, it is important for a firm to develop some procedures for monitoring the on-going projects. This will entail periodic checking and re-evaluation of the performance of projects during their life and after completion. Through this process, a firm will be able to know when to alter, suspend or terminate and salvage the project. This follow-up comparison of actual performance with original estimates not only ensures better forecasting but also helps to sharpen the techniques for improving future forecasts.

5 ESTIMATING CASH FLOWS

Estimation of future cash flows is an important task in CApital Budgeting. Information on the cash flows helps to ease the analysis of investment proposals, since

that will reveal the future benefits and costs of the project. The important determining factor for estimating cash flows is the receipt and disbursement of cash. The prime aim of receipts and disbursements forecasts is to summarise the flows. A cash flow stream is a series of cash receipts and expenditures over the life of the investment project. The estimates are made on differential or incremental basis. The differential or incremental cash flow is the difference between the cash outlay and the cash inflows on a project in a given period.

Cash Outlay

The initial cash outlay on a project is referred to as its cash outlay, and this includes the original cost of purchase and installation costs, insurance premium, repair and maintenance charges, depreciation, and property and income taxes. Cash disbursed for interest and debt payment to finance the project is excluded from the cash flow analysis of investment projects, since the inclusion of the amount in the computation will result in double counting. Therefore, the interest factor is properly taken care of in the calculation of the present value of the project.

Cash outlays included in the computation of net cash flows are the outlays incurred by the firm whether or not the investment proposal is accepted, and this should not be charged to a particular investment project. Therefore, it is not obscured to allocate a share of

general overhead to a new project on the basis of some arbitrary measures, such as direct labour hours or a portion of net sales, unless it is expected that general overhead will actually increase, if the project is accepted or rejected.

Opportunity cost of investment projects which involve the cost of using firm's scarce resources, such as valuable floor space or the time of the key executive personnel are charged to such investment. Such costs are measured by estimating how much the resources of the (key executive personnel or the flow space) would earn for the company if the investment under consideration were rejected.

The term, capital outlay, is also applied to a transaction in which an asset is acquired by incurring a long-term debt or by issuing stock. Although such transactions may involve no explicit borrowing, receipt or disbursement of cash, they are assumed to occur when an asset is acquired for a promise in some future time. The transaction is treated as though there has been a cash outlay as well as a source of new capital.

Cash Inflow

The cash inflow elements comprise of:

a. Earnings produced over time by the assets purchased;
b. Salvage value which result from depreciating assets more rapidly than they lose market value or;
c. Investment in assets which will have a residual market value even when they are depreciated at

precisely the current rate.

Cash inflows result from increase in cash revenues and/or cash savings through a reduction in operating costs. Net cash flows are estimated on an after-tax basis since tax payment is an outflow of cash. Since depreciation is a non-tax expense and is considered a deductible expenses for computing taxes, it serves to reduce the tax liability of the firm and its results in less outflow, will be equal to gross cash proceeds of the investment minus cash expenses of operation and taxes, i.e., after-tax cash flow proceeds = REVENUES - EXPENSES OTHER THAN DEPRECIATION INCOME TAX (1)

The income tax liability is computed by applying the income tax rate to the additional taxable income. Depreciation is deducted for tax purposes. Therefore,

INCOME TAX = (TAX RATE) X TAXABLE INCOME (2)

OR

INCOME TAX = (TAX RATE) X (REVENUES - EXPENSES OTHER THAN DEPRECIATION - DEPRECIATION) (3)

Substituting in equation (2) and simplifying gives equation (4)

AFTER-TAX PROCEEDS = (1-TAX RATE) X (REVENUE - EXPENSES OTHER THAN DEPRECIATION - DEPRECIATION) + DEPRECIATION(4)

Depreciation Procedures

Assets are depreciated by using straight line depreciation method; sum of the year's digits or the declining balancing method. The depreciation method used will certainly affect the profitability of an investment.

The best depreciation method for a firm will depend upon the discount rate, the life span of the investment and the expected value. To determine the best depreciation method, there is the need to compute the present value of the tax saving resulting from the use of each possible depreciation method.

Conventional and Non-Conventional Cash Flow

A cash flow stream could be conventional or non-conventional. It is termed conventional when an initial cash outlay is followed by cash inflows. Conventional cash flows have only one change in signs:

For example - + + + +;

where

- = Outflow.

+ = Inflow.

Projects with such cash flow are known as Conventional projects.

A non-conventional cash flow is one when the cash outflows are not restricted to the initial period, but are interspersed with cash inflows throughout the life of the project. The non-conventional cash flow has more than one changes in signs of cash flows:- - ++ + - ++. Projects with such cash flows are referred to as non-conventional projects.

3.6 COST OF CAPITAL

Cost of Capital is used as a decision criterion in making capital Budgeting decisions, as it serves as the

cut-off or the target or hurdle rate for accepting investments. The cost of capital is thus, the minimum rate of return required on an investment project in order to keep the market value per share at its current level (or unchanged).

The variety of ways of obtaining funds, by a firm to finance its project proposals may include borrowing from banks, selling marketable securities, selling other assets or part of the business and committing funds generated from operations. The Capital mix of a firm will depend largely upon its financial policy.

The use of Weighted Average Cost of Capital (WACC) in determining the cost of capital is most relevant in the capital budgeting decisions. "The WEight for each type of capital is the ratio of the market value of the securities representing that source of capital to the market value of all securities issued by the company". The Weighted Average Cost of Capital (WACC) is based on:

a. The firm's financing plans for the future - i.e., the volume of funds to be committed to investment and the type of finance to be used and;

b. The cost of each type of finance.

The Weighted Average Cost of Capital is calculated using the following general formula:

$$Ka = P_1K_1 + P_2K_2 + \cdots + P_nK_n$$

Where Ka = Weighted Average Cost of Capital (WACC)

P = The proportion of each component and

K = The cost of each component.

A firm's cost of capital may change from time to time. This may happen because the cost of capital of a firm depends on the conditions in the capital market (Reflected in part by the level of interest rates) and the amount of capital the firm plans to raise during the budget period. However, if the firm does not seek additional funds, and the future is certain (i.e. not uncertain) the cost of capital may remain fairly constant for a period.

The cost of capital is calculated on an after-tax basis, and as a result of that, after-tax are used to measure the Weighted Average Cost of Capital (WACC).

3.7 CAPITAL BUDGETING TECHNIQUES

There are a number of techniques whose application in capital budgeting differ from one firm to the other. As pointed out in the introductory part of this write-up, large companies may use more than one technique to appraise their projects, while small companies may use only one technique. The number of techniques used here is largely determined by the volume of activities of the firms. Capital budgeting techniques available for evaluation of projects are principally of two types:

1. The non-discounted cash flow techniques.
2. The discounted cash flow techniques.

Non-Discounted Cash Flow Techniques

These techniques are also referred to as the

traditional, conventional or unsophisticated methods, and they tend to ignore risk as an important factor in the investment decision problem. The methods are:

a. Pay back period (PB)

b. Accounting Rate of Return or Average Rate of Return (ARR).

a. **Pay-back Period**

The payback period is the number of years it takes a firm to recover its original investment from net cash flows. In other words, the number of years it will take to return the original outlay on a project. Or the length of time required for the stream of cash proceeds produced by an investment to equal the original cash outlay required by the investment.

If the investment generates constant annual cash flows, the payback can be computed, dividing net cash investment by the annual cash inflow.

That is:

$$\text{Payback period} = \frac{\text{Net Investment}}{\text{Annual Cash Inflow}}$$

Thus, a project with an outlay of ₦20,000 and is expected to produce annual cash inflow of ₦5,000 for five years, would have a payback period of four years or ₦20,000 divide by ₦5,000. But in a situation whereby the future stream of benefits from a project are not constant over its life span, the payback period is arrived at by adding up the expected benefits in the successive years until the total is equal to the original cost (outlay) of

the project. If in the example given above, the expected benefits for the five years are ₦8,000; ₦6,000; ₦4,000; ₦2,000 and ₦3,000 respectively, the payback period will still be four years, i.e., 8000 + 6000 + 4000 + 2000 = ₦20,000 (obtained at the 4th year).

Decision Rule

If the payback period calculated for a project is less than the maximum (Pb) period set up by the management, it would be accepted, if not, it would be rejected. As a ranking method, it gives the highest ranking to the project which has the shortest (Pb) period. Thus, if a firm has to choose between mutually exclusive projects, the project which has the shorter (Pb) period will be selected.

Merits and Demerits of the Method

The merits of payback method are:-

i. The most significant virtue of payback method is that it is simple to understand and easy to calculate, hence the heavy reliance on it by the business executives.

ii. It costs less than the other techniques which require lot of analyst's time and the use of computers.

iii. Firms use the method in combination with one of the discounted cash flow methods, since the payback serves as a risk indicator. That is, it shows how long the initial investment will be at risks, whether the payback period is long or short. Hence

it tackles the riskiness of a project.

Demerits

i. It does not take into account time distribution of the cash flows.

ii. It ignores all cash flows after the break-even date is reached.

iii. It may lead a firm to choose highly risky projects for which it is not prepared.

iv. Administrative difficulties may be faced in determining the maximum payback period, since it is usually a subjective decision.

v. The method is not consistent with the objective of maximising the market value of a firm's shares.

vi. It is not appropriate for measuring the profitability of a project since it does not consider the pattern of cash flows.

b. **Accounting Rate of Return or Average Rate of Return (ARR)**

This is also known as return on investment analysis, rate of return analysis or the average profit method. The method uses accounting information as provided by financial statements to establish the profitability of investment projects. The ARR is calculated by dividing the average income after-taxed by average investment. The average investments would be equal to the original investment plus salvage value (if any) divided by two. Hence ARR is determined as follows:

$$ARR = \frac{\text{Average Income}}{\text{Average Investment}}$$

Average income is found by adding up the after-tax profit expected for each year of the project's life and divide the result by the number of years (i.e., the project's life span).

Decision Rule

An investment is worthwhile when the ARR is higher than the minimum standard rate established by management, but is however, rejected if the ARR is less than the minimum rate.

Evaluation of ARR

The merits of the ARR method are:-

i. It is a simple calculation based on figures available from accounting data.
ii. It uses the entire stream of income in calculating the accounting rate.
iii. It is very simple to understand and use.

Demerits ARe:

i. It ignores the time value of money.
ii. It uses accounting profits and not cash flows in appraising projects.
iii. It is biased by the depreciation method used.
iv. It ignores the fact of reinvestment of earnings.
v. It does not consider the lengths of projects lives.
vi. It is incompatible with the firm's objective of maximizing the market value of shares, since share values do not depend on accounting rates.
vii. It does not take into account uncertainty which is

inherent in real world situations.

The Discounted Cash Flow (DCF) Techniques

It is very clear that the foregoing two methods do not take into consideration the entire life span of an investment, neither do they give serious attention to the timing of future cash flows. However, the discounted cash flow methods allow for the timing of cash receipts and outlays over the life span of the project. Also in this method, the future cash receipts of a project can be compared directly with cash receipts today, allowing for the fact that the proceeds can be re-invested cumulatively for the entire life of the project. The discounted cash flow methods provide a more objective basis for evaluating and selecting investment proposals. The methods take into consideration, the time value of money and their focus is on the cash inflows and outflows and not the net incomes or profits. The techniques under consideration here are:

a. Net present value (NPV)

b. Internal Rate of Return (IRR)

c. Profitability Index (PI) or Cost Benefit Ratio.

Net Present Value Method (NPV)

The net present value method is the classic economic method of evaluating investment proposals. It is probably the most commonly-used sophisticated capital budgeting technique which takes into account time value of money. Moreso, it correctly postulates that cash flows arising at different time periods differ in value

and are comparable only when their equivalent present values are found out. Therefore, with the approach, all cash flows are discounted to present value using the required rate of return.

The steps involved in the NPV method are:

i. Selecting an appropriate rate of interest with which to discount cash flows.

ii. Present value of cash inflows and cash outflows should be determined using the cost of capital as the discounting rate.

iii. Determination (or calculation) or the NPV, which involves the subtraction of the present value of cash outflows from the PV of cash inflows.

i.e. NPV = GPV - Co

where

GPV = Gross present value

Co = Cash outflow assumed to have been made at the beginning of the year.

A more complete and general formula for calculating the NPV is as follows:

$$NPV = \left[\frac{F1}{(1+K)1} + \frac{F2}{(1+K)2} + - - - + \frac{FN}{(1+K)N}\right] - C_o$$

$$= \sum_{t=I}^{N} \frac{Ft}{(1+K)t} - Co$$

where Ft = Net cash inflow in the year t or n

K = The firm's cost of capital

Co = Initial cost of the project.

The cost of capital K, is assumed to be known, otherwise the NPV cannot be calculated.

Therefore, the NPV is simply a process where by the present value (PV) of cash flows (Inflows and Outflows) of a projects, are calculated, using the cost of capital K, as the appropriate discounting rate, and the net present value is obtained by subtracting the PV of cash outflows from the PV of each inflows.

Decision Rule

In using the NPV method, investment projects can either be accepted or rejected, and alternatively, they are ranked based on the size of the NPV.

Therefore, a project proposal is accepted when the NPV is positive (i.e NPV > O) and rejected if NPV is negative (i.e NPV < O). A project's NPV is considered to be positive when the cash inflows exceeds the cash outflows or is equal to the outflows, and negative when the cash inflow is less than the cash outflows.

When NPV = O it means the firm will only break even and his choice of the project will depend on other factors other than profitability.

Where there are mutually exclusive projects, the choice is made based on the size of the NPV - i.e. project with the highest NPV.

Merits and Demerits of NPV Method:

The merits of the NPV method are:

i. The method takes into account time value of money.

ii. It considers all cash flows over the life span of an investment.

iii. It is consistent with the objective of maximising the welfare of the owners.

iv. It represents real increase in consumption, made possible by the project's acceptance.

v. It allows for recouping of the initial investment without the need to adjust cash cashflows for depreciation.

vi. It correctly runs projects with unequal cash outflows of lives provided capital markets are perfect.

The demerits of the NPV Method are:

i. The method ignores investors consumption pattern over time.

ii. It only produces optimal solutions under conditions of certainty and perfect knowledge.

iii. It is difficult to calculate and use.

Internal Rate of Return (IRR)

This is another discounted cash flow (DCF) technique. It is similar to the NPV since it uses the same variables as the NPV. It is the rate of return or interest rate that equates the present value of the stream of earnings from a project to

the initial outlay of the project. In other words, it is the rate at which the net present value of the investment is zero. It is called the internal rate because it depends entirely on the outlay and proceeds associated with the project and not any rate determined outside the investment. It is calculated thus:

$$C = \frac{A1}{(1+r)1} + \frac{A2}{(1+r)2} + \frac{A3}{(1+r)3} + - - - - - + \frac{An}{(1+r)^n}$$

$$C = \sum_{t-1}^{n} \frac{At}{(1+r)t}$$

$$IRR = \sum_{t=1}^{n} \frac{At}{(1+r)+} - C = 0$$

where r = rate of return

c = Cost of the project

At = Net cash flow in time t or n.

This can be presented differently in the following manner:

$$\sum_{n=0}^{n=\infty} \frac{In}{(1+r)n} = \sum_{n=0}^{n=} \frac{In}{(1+r)n}$$

The left hand side of the equation represents the discounted values of the investment outlays for the project made at any time from the beginning of the year until infi nity. Similarly the right handside stands for the discounted value of the projects net inflows over the

same period. The rate of interest which equates the two side of the equations is represented by "r" and it is called the projects (IRR). The determination of the IRR is in most cases done by trial and error method. If the calculated present value of the expected cash inflows is low than the present value of cash outflows, a lower rate is tried. However, a higher rate is tried if the present value of inflows is higher than the present value of outflows. The process is repeated over and over (depending on whether the (PV) is increasing or reducing) until the net present value becomes zero.

The internal rate of return technique is used with wide application in security markets in evaluating the yields of bonds debenture and other debt instruments.

Decision Rule:

Projects are selected by comparing the IRR with some required rate of return known as the cut off or hurdle rate.

An investment is accepted if the (IRR) is higher than or equal to the minimum required rate of return set by the management (i.e r > K). The investment proposal is rejected if the internal rate of return is lower than the firm's cost of capital (i.e r < K).

Generally the required internal rate of return is the cost of the firm to finance the proposed project.

Merits and Demerits of IRR Method

The merits of the IRR method are:

i. It considers the time value of money

ii. It considers cash flows over the entire life of the project.

iii. It is more easily understood by the business community;

iv. It is consistent with the objective of maximising owners welfare;

v. It is break even discount rate below which investment is unprofitable;

vi. It has psychological appeal to users because it is calculated in per centage.

The Demerits of the Method are:

i. It is difficult to understand, because of the calculations involved;

ii. Calculation of the cost of capital is not a pre-condition for its use.

iii. It is unreliable as a ranking device for projects which have different outlays or different time patterns of cash flows.

iv. It may lead to non uniqueness of (multiple solutions) or non-real solutions.

v. It implies that intermediate cash inflows are reinvested at the internal rate of return of the project, whereas the (NPV) method postulates that cash inflows are reinvested at the firm's cost of capital, which seems to be more appropriate.

PROFITABILITY INDEX (PI) OR BENEFIT-COST RATIO

This is another time adjusted method of evaluating investment proposals, which is defined as the ratio of the present value of future cash benefits, at the required rate of return to the initial cash outflow of the investment. It can be expressed as follows:

$$PI = \frac{\text{Present value of Cash inflows}}{\text{Initial cash outlay.}}$$

$$\text{PI/B/C Ratio} = \sum_{t=1}^{n} \frac{At}{(1+K)t}$$

$$\frac{t = 1}{C}$$

When ever two or more projects of vastly different outlays and economic lives are being compared, the profitability index (PI) proves a very useful tool since it compares the present value of the inflows from a project with the outlays of the project.

Decision Rule

For this method, a project is accepted if the profitability index (PI) is greater than one (i.e. PI > 1).

However, a project is rejected if the (PI) is less than one (i.e. PI < 1).

In terms of ranking, projects with the highest indices are preferred first.

Evaluation of PI Method:

The profitability index method is a sound method of appraising investment projects. It gives due

consideration to the time value of money. The method can be used to choose between mutually exclusive projects by calculating the incremental benefit-cost ratio, and projects are then ranked in accordance with their PI.

NET PRESENT VALUE (NPV) VERSUS PROFITABILITY INDEX (PI)

For any given project, the NPV and the PI methods give the same accept - reject signals. This is because profitability index can be greater than one only when the project's net present value is positive. In the case of marginal projects, both the net present value and the profitability index will be equal to zero.

But if a choice is to be made between mutually exclusive projects, the net present value measure is preferred. This is because the net present value expresses in absolute terms the expected economic contribution of the project, while the profitability index expresses only the relative profitability.

NET PRESENT VALUE INTERNAL RATE OF RETURN

The net present value and the internal rate of return give the same accept reject signals. That is, they often present similar decisions. But when a choice is to be made between investment projects which are mutually exclusive, the two methods may lead to different rankings decisions. That is they can rank projects differently. The different rankings can occur when:

1. The cost of one project is larger than the other;
2. The timing of the projects cash flows differs. For instance, Cash flows of one project may increase over time, while those of the other decrease.
3. The projects have different expected lives.

Their difference becomes obvious because of their different assumptions regarding the reinvestment rates at which cash generated by the projects will be invested. While the internal rate of return method assumes that cash inflows generated by the project can be reinvested at its internal rate of return, the net present value method assumes that the cash inflows can be reinvested at the firm's cost of capital, i.e. the required rate of return.

Where the use of the two methods will lead to different judgements in selecting an investment proposal, decisions based on the NPV results are more reasonable. This is because the net present value method expresses in absolute terms, the expected economic contribution of the projects, while the profitability index expresses only the relative profitability. The NPV method is simple to operate and unlike the internal rate of return method, it does not suffer from the problem of multiple rates. It takes into account differences in the scale of investments and gives consistently correct solutions to the problems of investment analysis.

Although the net present value method may seem to be theoretically preferable, yet the use of the internal rate of return is advocated based on its merits already highlighted above. Moreso, it is felt that, in the absence of the cost of capital, it gives a fairly good idea of the projects profitability. Therefore, it is considered a more meaningful measure of profitability

since it relates return to risk in the dimension of time and quantity. It is also seen as a good method which may be utilised without deciding on a minimum acceptable discount rate, whereas the net present value method requires that the rate be incorporated into the computation. The internal rate of return is preferred in the evaluation of risky projects, since the minimum required rate of return (i.e. Cost of Capital) for each project need not be varied. The internal rate of return method has the advantage of being looked on as the maximum rate of return and depending on the risk perception of the decision maker, a particular project may be accepted or rejected on the basis of its internal rate.

When there is conflict in the choice of two mutually exclusive projects, and management is seeking to maximise the value of the firm, the correct decision is to select the project with the higher NPV, since the net present value method measures the projects contribution to the value of the firm.

This line of reasoning leads to the conclusion that firms should, in general, use the NPV method for evaluating capital investment proposals[14].

It is apparently clear that both the traditional and discounted cash flow investment criteria lay serious emphasis on when original investment is re-couped, and, the amount of proceeds to be realised if a project is undertaken. Such emphasis is in order, but reality

explains the fact that in real business situations, most investments are not easily re-couped due to reasons that range from size of investment to high rate of technical and product obsolescence occasioned by rapid technological advancement.

3.8 CAPITAL-ASSET PRICING MODEL AND CAPITAL BUDGETING

The Capital-Asset pricing model is used to measure the expected rate of return of securities in the capital market. The expected return on a security j for instance, is expressed as:

$$Rj = i + (Rm - i)\,Bj$$

where i = risk-free rate

Rm = expected rate of return on the market portfolio of risky assets

Bj = Beta Coefficient or Systematic risk, of the stock.

This framework may be applied to capital budgeting projects. If all the assumptions of the capital-asset pricing model hold, then, the projects are judged in relation to their systematic risk, i.e. the undiversified risk. Therefore, using the model for capital budgeting, suppose we have a project K, the discount rate for this project is represented thus:

$$Rk = i + (Rm - i)Bk$$

where Rk = Required return for project K

Bk = Slope of the characteristic line that describes the relationship between

expected excess market rates of return for the project and expected excess returns for the market portfolio.

In this approach, the diversification of assets by a firm is not considered to be of any value, and the impact of the project on the firm's total variability of returns is ignored. Instead, only the project's systematic risk is important, and it is completely divorced from the present risk complexion of the firm.

With this approach, a project is accepted when the expected return exceeds the required return Rk. That is, firms search for investment opportunities that will yield excess returns, in the case of this model, those projects with expected internal rates of return lying above the security market line. These projects are considered to be viable projects.

Unlike the CAPM which is a single period in time frame, the capital budgeting involves a number of years. Hence, different betas and discount rates can be used for future periods, since some projects are riskier initially, then become safer as uncertainty is revealed with time, while other projects become riskier with time.

What is worth noting in the use of capital-asset pricing model in evaluating risky investments is that, the required rate of return for the project does not depend on the company undertaking the investment. By implication, it means the required rate on the project is the same for any firm that might invest in it. Or stated

differently, the systematic risk of a project is the same for all firms, hence the project's required return is also the same.

However, this does not mean the project is equally valuable to all firms. Some firms may derive greater incremental cash flows from it than will others, and because of differences in expertise, management efficiency, synergism, etc, the expected return will certainly vary among firms.

Consequently, the project will be more valuable to some firms than others, but the acceptance standard will be the same for all the firms considering the project.

3.9 CAPITAL RATIONING

When a firm has more productive investment proposals than the limited budget can support, it must engage in capital rationing, which is a process of allocating a limited amount of funds for investment. Therefore, Capital Rationing occurs when there is a budget ceiling or constraint on the amount of funds that can be invested during a specific period of time, such as a year. Such constraints are prevalent in those firms that have a policy of financing all capital expenditures internally. Also, capital rationing could occur when in a large company a division is allowed to make capital expenditures only up to a specified budget ceiling, over which the division usually has no control.

With the capital rationing constraint, the firm is able to select the combination of investment proposals

that will provide the greatest profitability - i.e. the highest net present value for the period. The sole objective in capital rationing is to choose projects in such a way that the sum of their NPV is optimised. Though opinions differ as to which ranking techniques is most appropriate in appraising projects under capital rationing, the NPV and IRR appear to be the best. Thus, all projects are ranked by their IRR in descending order until the budget is exhausted.

Therefore, in capital rationing, though a firm may have several projects that are desirable, it selects only a few because of insufficient funds to finance all the profitable projects. Constraints on the firm to get funds to finance all profitable projects may be external or self-imposed. Therefore, capital rationing may arise due to:

1. External factors
2. Internal constraints imposed by management.

EXTERNAL CAPITAL RATIONING

External capital rationing becomes obvious because of the imperfections of capital markets. The imperfections may be caused by deficiencies in market information, by rigidities that prevent the free-flow of capital between firms and by a difference between the borrowing rate and the lending rate which are aggravated by the transaction costs. These imperfections make it difficult for a firm to obtain necessary capital to finance its viable investment opportunities.

INTERNAL CAPITAL RATIONING

Internal capital rationing is caused by self-imposed restriction by management. The restrictions may, among others, include:

i. Management's refusal to obtain additional capital through debt financing.

ii. Fixing an arbitrary limit to the amount of funds to be invested by divisional managers.

iii. Resorting to capital rationing by requiring a minimum rate of return higher than the cost of capital.

A firm having a budget ceiling means, it has to incur an opportunity cost by foregoing the next most viable investment after the budget's cut-off point. In such a situation, the required rate of return is not necessarily the acceptance criterion but serves as a lower limit of acceptance. Instead, it is the budget constraint that determines which projects should be accepted. Therefore, capital rationing usually results in an investment policy that is less than optimal as it may reject projects that would provide returns substantially in excess of the required rate.

As already highlighted above, the selection process under capital rationing involves ranking projects according to some measure of profitability and selecting them in the descending order of profitability until the funds are exhausted.

It is advisable that firms engaging themselves in

capital rationing, should not remain rigid, but should provide some flexibility. Also, when capital is rationed, management should consider more than one period in the allocation of limited capital to investment projects, since some projects provide relatively high net cash flows in the early years. These cash flows can serve to reduce the budget constraints in the early years by using them to finance other investment projects.

3.10 RISK AND UNCERTAINTY IN CAPITAL BUDGETING

All investment decisions are taken under conditions of risk because human activity which is full of uncertainties makes all decisions risky, and as a result, expected returns or earnings from a project over its economic life are mere probabilities of occurrence of these returns. Hence the risk associated with a project is the likely variability of the expected returns from the project. Strictly speaking, the variability in the expected future returns of an investment is caused by a wide range of factors which may, among others, include the entire economy, economic factors peculiar to investment, competition, technological development, political labour conditions, consumer preferences and other factors that pose a big problem in saying with certainty what the future would be like. This explains the reason why the revenues, costs and economic life of a project are always uncertain.

The business operations of all firms are subject to

both business and financial risks. Business risk is the uncertainty of income flows caused by the nature of the firm's business, while financial risk is caused by uncertainty introduced by the method of financing a project.

Techniques to Handle Risk

The techniques for handling risk include:

1. Payback period
2. Risk Adjusted Discount Rate
3. Certainty Equivalent
4. Statistical techniques, etc.

Payback Period

This is a common technique used for recognising risk associated with an investment proposal. It is a method that allows for risk in capital budgeting decision rather than measuring profitability of a project. It is essentially suited to the assessment of risks of time nature. Business firms using this method prefer shorter payback to longer ones. Guidelines are often established specifying the maximum payback period for which an investment can be accepted and above which it should be rejected.

In addition to the merits of the method, already discussed in the foregoing pages, it makes allowance for risk by:

i. Focusing attention on quick recovery of capital thereby emphasising the liquidity of a firm.
ii. Favouring short-term projects over riskier longer

term projects.

Its setbacks may include:

i. Ignoring the time value of cash flows.

ii. Not making any allowance for the time pattern of the initial capital recovery.

Risk-Adjusted Discount Rate:

This is a method which allows for risk by incorporating a risk premium into the capital budgeting analysis through the risk-free discount rate. Such a composition discount rate allows for both time preference and risk preference and, is a sum of the risk-free rate and the risk premium rate, reflecting the investor's attitude towards risk. The risk adjusted-discount rate method is expressed as:

$$NPV = \left[\sum_{t=I}^{n} \frac{Ft}{(I+K^*)t} \right]$$

where K^* = risk-adjusted discount rate

That is $K^* = 1 + 0$

where i = the risk-free rate

0 = the risk premium.

In practice, companies could use different rates of discount for different projects. In other words, the risk-adjusted discount rate accounts for risk by varying the discount rate.

Merits of the Method

i. It is easy to understand

ii. It incorporates a risk averse attitude towards

uncertainty.

iii. It has intuitive appeal for risk averse businessman.

However, the method has the following limitations:

i. Deriving a risk adjusted discount rate is not always easy.

ii. It is based on the assumption that investors are risk-averse.

Certainty Equivalent

In this method, the risk factor is taken into consideration by reducing the forecasts of cash flows to some conservative level. That is, the approach recognises risk in capital budgeting analysis by subjectively adjusting estimated cash flows and employs risk-free rate to discount the adjusted cash flows. The method is expressed as:

$$NPV = \sum_{t=1}^{n} \frac{\& t \; Ft}{(1+i)t}$$

where Ft = the forecast of cash flow without risk-adjustment.

&t = the risk-adjusted factor or the certainty-equivalent Coefficient.

i. = Risk-free rate, assumed to be constant for all periods.

The certainty-equivalent coefficient is a ratio of certain cash flows and the risky cash flows and is represented by the formula:

$$\&t = \frac{Ft}{F^*t} = \frac{\text{Certainty Cash Flow}}{\text{Risky Cash Flow}}$$

The coefficients are assumed by the decision-maker, where a higher &t is used if lower risk is anticipated and a lower &t is used when high risk is anticipated.

Merits and Demerits of the Approach

The method recognises the risk factor, but the procedure for reducing the forecasts of cash flow is implied and could be inconsistent from investment to investment. A Forecaster in a large enterprise, who is expecting a reduction in his forecast figures, may inflate them in anticipation. At the same time if the forecasts will pass through several layers of management, the tendency is to exaggerate the original forecast or to be as conservative as possible. By focusing so much on the gloom outcomes gives high probability of by passing some good investments.

Statistical Techniques:

The payback, risk-adjusted discount rate and the Certainty equivalent methods which are all considered to be simplified approaches, contain assumptions which are not so clearly understood, and could lead decision makers to a decision at odds with their own preferences. To have critical analysis of the risk investments, certain analytical tools which help in deriving more relevant information in the analysis are used. These techniques measure risk in more precise terms. The statistical tools are:

1. Sensitivity analysis
2. Assignment of probability
3. Standard deviation
4. Coefficient of variation

3.11 CAPITAL BUDGETING AND INFLATION

An inflationary economy distorts capital budgeting decisions. This is because depreciation charges are based on original than replacement costs, and as income grows with inflation, an increasing portion is taxed, with the result that real cash flows do not keep up with inflation. This results in a very wide gap between the nominal and real future cash flows as the purchasing power of the monetary units is reduced considerable. Hence the presence of inflation results in lower real rates of return and less incentive for firms to undertake capital investments. Since money cash flows have to be deflated by the inflation rate to get the real cash flows, as the real cash flows decline with inflation. Firms invest less, seek investments with faster paybacks, and become less capital intensive. Selecting an appropriate discount rate becomes difficult as costs rise differently some much faster than others. The expected inflation affects the NPV of a project by altering both expected cash flows and the discount rate.

Therefore, it becomes imperative for the modification of the traditional capital budgeting procedures to avoid inefficient allocation of capital. This calls for the adoption of certain methods in which inflation can be

incorporated in investment appraisal. Some of the methods may include :

1. Estimating cash flows at present day price;
2. Incorporating inflation rates into an investment cash flows;
3. Incorporating inflation rates and conducting a sensitivity analysis to cash flows;
4. Determination of real rate of interest and using that to discount the real returns.

In estimating cash flows, it is important for firms to take into account expected future inflation and not to assume that price levels will remain unchanged throughout the life of the project. The anticipated inflation could be estimated by averaging published inflation forecasts of economic and/or econometric models. Estimation can also be made by employing extrapolation techniques or more sophisticated forecasting procedures, using data available on price increases, particularly consumer and the weighted averages of price in aggtegate, by products, commodities and average wage increases.

3.12 PROJECT ABANDONMENT

Sometimes it becomes obvious for a firm to abandon a project though its economic life is not over. Such decision may enhance the projects expected return and also make it less risk, rather than ignoring the abandoned value. *The main rationale behind abandonment* is that funds should be removed from a project or disinvested, whenever the project does not economically

justify the use of these funds. A project should be abandoned when its abandonment value exceeds the present value of the projects subsequent future cash flows - i.e the discounted future cash flows from the continuing project are less than the proceeds of abandonment.

The abandonment value is assumed to represent its disposal value which would become available to the firm, either in cash or in cash savings. However, it should be noted that an asset does not actually have to be sold to be abandoned, rather it may simply be employed in another area of the firm, since the abandonment value can be estimated.

To have an optimal timing of the abandonment option, Dyle and Long (1969) proposed an abandonment decision rule which serves as a pointer or guide on the abandonment decision - whether to hold the project for its entire life, to abandon now; or to hold now, and abandon later in the future at the end of the project's life. The rule which is a composite of four steps, can be expressed as:

1. Compute the present value of the sum of cash flows expected to be generated from the project and the expected abandonment value at the end of the holding period. There is the possibility of having 'n' years remaining in the life of the project at the time of abandonment. Therefore, the following formula is used:

$$PVra = \sum_{t=r+I}^{a} \frac{Ft}{(I+K)^{(t-r)}} + \frac{Fva}{(I+K)^{(a-r)}}$$

where PVra = present value at time r of expected future net cash flows through a period a, plus the present value of the expected abandonment value at the end of the period a.

a = period in which the project is abandoned.

Ft = Expected net cash flow of the project in period t.

K = required rate of return

FVa = expected abandonment value at the end of period a.

2. Where a = n, we have to compute PVra. If PVrn is greater than the current abandonment value, FVr, we continue to hold the project and evaluate it at time r + 1, based on our expectations at that time.

3. If PVrn is less than or equal to FVr, we compute PVra for a = n - 1. However, if PVrn is greater than FVr, we continue to hold the project as in step (2). If PVrn - 1 $\leq$ FVr, we compute PVra for a = n - 2 and then compare it with FVr. With these computations we can decide on whether to hold the project or not or that a = r + 1.

4. If PVra $\leq$ FVr, for all r + 1 $\leq$ a $\leq$ n, then we would abandoned the project at time r.

With these steps, it becomes clear that a project is abandoned only if the present value of possible benefits is less than the current abandonment value and if it appears better to abandon now than in the future.

The consideration of abandonment value when evaluating investment proposals is very import. This is because funds committed to some proposals are relatively flexible, whereas others are not. For if capital is to be allocated optimally, we must take into account possible differences in the future mobility of funds, when evaluating investment proposals. The consideration of abandonment value is relevant to both new project proposals and existing investment projects.

Even though the project is profitable, it may make sense to abandon it if the abandonment value is sufficiently high. That is to say, the optional time to abandon is the point where the combination of expected future cash flow and future abandonment value has the highest present value.

With this continual assessment of projects, a firm is able to weed out those that are no longer economically viable.

SUMMARY

The chapter essential discusses the theoretical frame work to capital budgeting which forms the bed rock for any capital budgetign decisions. Capital Budgeting helps in making cash forecast, to determine the levels of cash disbursements and the cash inflows in any viable projects, and to eliminate some costs which a firm may incur.

The capital budgeting process involves four principal steps which include:

1. Project generation and cash flow estimation;
2. Financial analysis and Project selection;
3. *Project implementation or Execution and;*
4. Project review.

For any capital Budgeting considerations, techniques used for evaluating project proposals may include:

a. Payback period (PB)
b. Accounting Rate of Return (ARR)
c. Net Present Value (NPV)
d. Internal Rate of Return(IRR)
e. Profitability Index (PI)

While considering the viability of a project in each of these methods, it some times becomes obvious to ration capital when a firm is faced with financial constraints. In Capital budgeting, there is the need for a firm to be concious of future inflationary trends. It is also advisable to abandon a project when it is realised that its abandonment value exceeds the present value of the project's subsequent future cash flows - i.e the

discounted cash flows from the continuing project are less than the proceeds of abandonment.

CHAPTER FOUR

ORIGIN, ORGANISATION AND ACTIVITIES OF NIGERIAN TOBACCO COMPANY (NTC)

INTRODUCTION:

Since the main focus of attention in this research work is on the Nigerian Tobacco Company, I found it difficult to give historical origination of tobacco and the establishment of all tobacco companies, either in the third word countries or the entire world, as doing so would mean overstepping my bounds (i.e scope of study) and because of anticipated difficulties which would render the work a fruitless one in the end. Therefore, historical background given here, relates specifically to the origination of the Nigerian Tobacco Company (NTC).

However, I did not hesitate to put down any brief material information related to tobacco production, or the activities of tobacco companies outside Nigeria, especially the United States, which I got during the research.

4.1 THE BRITISH AMERICAN TOBACCO INDUSTRIES

The British American Tobacco (B.A.T.) Company which was established in 1902, is one of the most active multinational companies, one of the UK's largest business enterprises. It is the world's most international tobacco manufacturer and a leading provider of personal financial and insurance services in the UK and North America. The Group Companies operate in more than 80 Countries and has a staff strength of well over 200,000

people.

The group has subsidiaries which produce tobacco and those which offer financial services. Among those that manufacture cigarettes are:

i. Brown and Williamson - the third largest tobacco company in the U.S.A.

ii. British-American Tobacco (BATCO) - A producer of cigarettes in 40 countries. It manufactures in the U.K., but does not sell on the U.K domestic market.

iii. BAT cigarettenfabriken (BATCF) - a leading cigarette manufacturer in Germany.

iv. Souza Crux - Brazils dominant cigarette producer with a large leaf tobacco export business.

On the other hand, subsidiaries which offer financial services are:

i. Farmers Group - the sixth largest general insurer in the U.S.A;

ii. Eagle Star - a leading U.K. life and general insurer, active in more than 30 countries;

iii. Allied Dunbar - the U.K.'s leading unit - linked life assurance and pensions company.

The B.A.T. Industries has also got itself involved consciously in the field of sustaining and enhancing the communities in which it operates. Some of the areas in which the Group helps in Societal, development include education, vocational training, job creation Urban and Rural regeneration, welfare and the arts, and these programmes cover the United Kingdom, Europe, North

America, South America, Asia and Africa. At present, the two main goals of B.A.T. Industries Community policy in the UK are to provide support to small Businesses and to enable young people receive high quality, productive education.

It should not be forgotten that the Nigerian Tobacco Company (NTC) is an off shoot of this B.A.T. which still renders services in the form of finance, Research and Development (R & D) training and development etc, to the NTC.

4.2 HISTORICAL BACKGROUND OF NIGERIAN TOBACCO COMPANY

The development of Nigeria's tobacco industry has its origination from import trading by which cigarettes were exported to the West African Countries through trading companies like the Royal Niger Company - and many others. This continued from the early days of the twentieth century up to 1912. In this year, things took a different shape, when the British-American Tobacco Company (BAT) decided to establish a depot and a sales organisation in Nigeria to handle the distribution of its own products. On seeing the high sales made from the sales of cigarettes and the bright prospects that lie ahead, the company decided in 1933 to set up a pilot factory at Oshogbo manufacturing cigarettes from imported leaf, and, by 1937, the first full scale factory was opened at Ibadan.

In March 1951, Nigerian Tobacco Company PLC (NTC) was incorporated as the successor of B.A.T. but it was not

until 1960 when NTC became a public company, fully quoted on the stock exchange, and by May of that year, BAT offered for sale to the public in Nigeria some of the ordinary stock of NTC; more shares were sold in 1964. By 1980, the number of shareholders stood at about Fifty Thousand. The company's present issued and paid-capital is ₦100 Million.

As a reflection of the company's capital structure, the Annual Reports and Accounts of 1992 shows that British-America Tobacco Company as a single investor, controls 59.86% (59.86m Shares) of the share holding, Nigerians as a whole have 40% (40m shares) interest while 0.14% goes to other unspecified bodies.

The company has three modern factories situated at different locations in Nigeria, and all were opened on different dates. The factory at Ibadan was the first to be established in 1937, followed by the one opened in 1956 at Port Harcourt and lastly the Zaria factory which was opened in 1959. In 1973, the factory in Zaria was completely modernized and to meet demands for the company's product, a leaf threshing plant for processing leaf tobacco was installed there.

4.3 OBJECTIVES OF NIGERIAN TOBACCO COMPANY.

Some of the objectives of NTCE are:

1. To ensure production and purchase of sufficient locally grown tobacco for uninterrupted manufacture of cigarettes.
2. To play a part in making education more relevant and effective.

3. To encourage employees to contribute to charities by matching their giving.

4. Recruitment/Employment of interested farmers to grow tobacco.

5. To ensure the supply of crop inputs to farmers.

6. To ensure the safety of its employees at work places.

7. To contribute to both economic and social development of the entire Nigerian society.

8. To always sustain and improve the quality work life of its employees etc.

4.4 ORGANISATIONAL STRUCTURE OF THE COMPANY

The company has a Unique organisational structure. It is headed by Managing Director and directly reporting to him are Directors and Head of Departments of the Legal/Secretarial, Production, Corporate Affairs, Personnel, Marketing, Purchasing Traffic, leaf and Finance - who have status and all resident in Lagos.

Each of the three factories in Ibadan, Port Harcourt and Zaria is headed by a branch Manager who reports directly to the Managing Director at Headquarters in Lagos. The factories also have factory Managers, who report to the production manager at the Headquarters. Under the branch and factory Managers are functional heads who report administratively to the branch and factory Manager, but, functionally, they report to their directors at Headquarters. See Appendix B: for the company's unified organogram.

Only some of the departments are discussed below, as the researcher could not get material-information on all departments.

Leaf Department:

What is discussed here specifically relates to the North. Historically, tobacco growing in Northern Region dates back to 1935 when the first commercial production was started around Maigana (a village along Jos road about 24 Kilometres from Zaria). Leaf is grown in two major states namely Sokoto and Kaduna. However, few farmers still grow on a small scale in Rigim Kano State, and also in Bauchi.

The leaf department is responsible for the production of leaf and the purchases of some from farmers. The company's system of growing tobacco involves the use of extension service through its employees servicing approximately 10,000 farmers in the North, with a production of 3.2million Kgs of leaf annually. This extension covers all aspects of tobacco growing from the initial seedbeds and land preparation, through the application of fertilizer, pesticides and cultivation to the harvesting, curing, transportation and purchasing. Not only do the leaf instructors guide the farmers on tobacco growing, but they also assist them in planting their food crops.

All inputs are given to the farmers as interest free loans during the growing season. In addition, loans, major capital outlays which include barn construction for

tobacco curing and tractors are provided to farmers as loans over four or five years. The company deals directly with the farmers particularly in Zaria division so as to ensure proper accountability. However, because of Government legislation, contact with farmers in Sokoto State is made through co-operative societies.

Leaf Types

Generally, the company through the leaf Department grows the following categories of Tobacco leaves:

1. NFC - (Nigerian Flue Cured Tobacco)
2. SND - (Southern Nigeria Dark)
3. ZAB - (Zaria Air Bright)
4. NNB - (Northern Nigeria Bright).

Broadly speaking, there are only two (two) classes of tobacco i.e. Flue Cured and Air Cured.

The Zaria Air Bright, as the name implies is grown in the Zaria division, where above 3,000 farmers spread in more than 160 villages are involved in the production. Farmers are given a commission of 15% based on the total production, while leaders for operational convenience in a locality are given 50% bonus for their leadership role.

The Northern Nigerian Bright is grown in the "Fadama" (marshy areas) in areas like Sokoto, Shinkafi, Sabon Birni all in Sokoto division (Sokoto State).

The Company has also started the production of a tobacco crop called 'Burley' which is meant for export only.

Tobacco Price:

To create confidence in the minds of all NTC Tobacco Growers, the company agrees with the farmers on the price of the tobacco before the growing season commences. By that, one of the main uncertainties for the farmer is removed and he can plan more efficiently.

Also it is the company's policy to always review prices annually prior to the growing season.

Production Department:

The production department is the section of the company in which the actual manufacture of the cigarettes takes place. See Appendix C: for the Organogram.

The leaf warehouse is under the production department, and leaf houses are located in Zaria, Gusau, Jos, Maigana and Ogbomosho (for export). Leaf meant for primary production of cigarettes in the company are received on first in first out (FIFO) method. Other sections of the production department include the primary manufacturing section, the Wrapping material store, the filter Rod making section, the cigarette making section, the cigarette packing section, the engineering services section and the Health and safety unit.

All these sections perform different functions which sustain the existence of the company and help also to ensure the safety and quality of work life of the company's workers.

It is worth noting that the company has production machines mark 8D PA8 (Double Knife), mark 88M PA7RD, Mark

8D plain and mark 88M plain which can produce 2,700 2,500 and 2,000 (the last 2) sticks of cigarettes per minute respectively.

The company, at present produces the following brands of cigarettes: Benson and Hedges special filters, Benson and Hedges Luxury Methol, State Express 555 filter Kings John Players Golf Leaf, Varsity, Sportsman, Embassy, Sweet Menthol, High Society, Bicycle, Three Rings, Mass and Trend.

The company accords the greatest priority to Health and Safety in its operations. As a result of that, Health and Safety Committees exist at all levels of the company and in all its locations and have as their cardinal aim to make the company in all its ramifications totally accident-free and a safe place to work in.

As Safety Measures:

i. Safety training's are conducted to increase employees awareness of potentially unsafe working conditions and to pro-actively seek to eliminate them.

ii. A comprehensive safety manual is issued to each employee of the company. Farmers also have their own safety guide lines in Hausa, Yoruba and Igbo. Contractors of the company are given separate instructions and are required to enter into an undertaking to observe such instructions at all times.

iii. Protective clothing and equipment are provided for employees and the use of the protective equipment is mandatory in designated areas in the factories.

iv. Clinics exist in factory locations and medical retainers are maintained in all towns in which the company has offices. Four Hospitals/Clinics have retainership with NTC in Zaria viz:

a. Ladiya Clinic

b. Nana Clinic

c. Wusasa (St. Lukes Anglican Hospital) and

d. Mayfair Hospital.

Personnel Department

The personnel department is one of the service departments charged with the responsibilities of recruitment, training/Motivation, discipline and general welfare of all management and staff of the company. Some of the welfare schemes the company has for its employees are canteen services, medical services, tailors/laundry services, recreation facilities, long service awards adult education classes, scholarship award, "employee of the quarter" etc. All these are meant to boost the morale of the workers. See Appendix D: for the Organogram.

Finance Department

The accounting department within the frame-work of the company's general objectives is meant to plan the financial policies for the maximum benefit of the stock holders in consonance with the general objectives of the

company. The department tries to conserve the company's assets, control costs, and maintain effective internal communication throughout the company. Some of the objectives of the department include the following:

1. Ensure that adequate books and records are maintained by the company so that accurate financial statements may be prepared for both management and stockholders; so as to safeguard its assets and to control its revenue and expenditure.
2. Provide the management of all departments with adequate financial information to enable them to assess past performance and to formulate future policies.
3. The financial implications of both existing and proposed Board policies and continuously consider whether the assets of the company are being used to full advantage.
4. Ensure that all Government legislation affecting the company's activities is strictly adhered to, and that adequate returns for taxation and excise are made to the appropriate government department.
5. Ensure the profitability of all proposed brands and blends.
6. Introduce and maintain accounting systems which will prevent loss by fraud or wastages in any sphere of the company's activities.
7. Ensure that periodic forecasts of the company's profitability and cash position are drawn up.

8. Prepare half yearly and annual accounts in the form required by the principal stock holders and prepare the annual report and accounts for publication to all stockholders.

9. Appraise the profitability and feasibility of all major capital investments.

10. Ensure that up-to-date standing instructions are available to all members of management.

The department is divided into the following sections which also have sub-units within the sections. viz:

1. Financial Accounts Section: which is also subdivided into Financial Accounts and Salaries and Wages.

2. Factory Accounts Section: which is also sub-divided into Factory Records, Production Costing Repairs and Renewal Stores (R & Rs).

3. Leaf Accounting Section which keeps the value of leaf operations from growing to manufacture into cigarettes.

All these sections work hand in hand so as to enable the department achieve its objectives. See Appendix E: for the Organogram.

4.5 Performance

The Company's performance here covers a period of Seven (7) years, from 1986 to 1992, and it is specifically on:

i. Profit before tax

ii. Profit after tax

iii. Turnover

iv. Earnings per share

v. Dividend per share

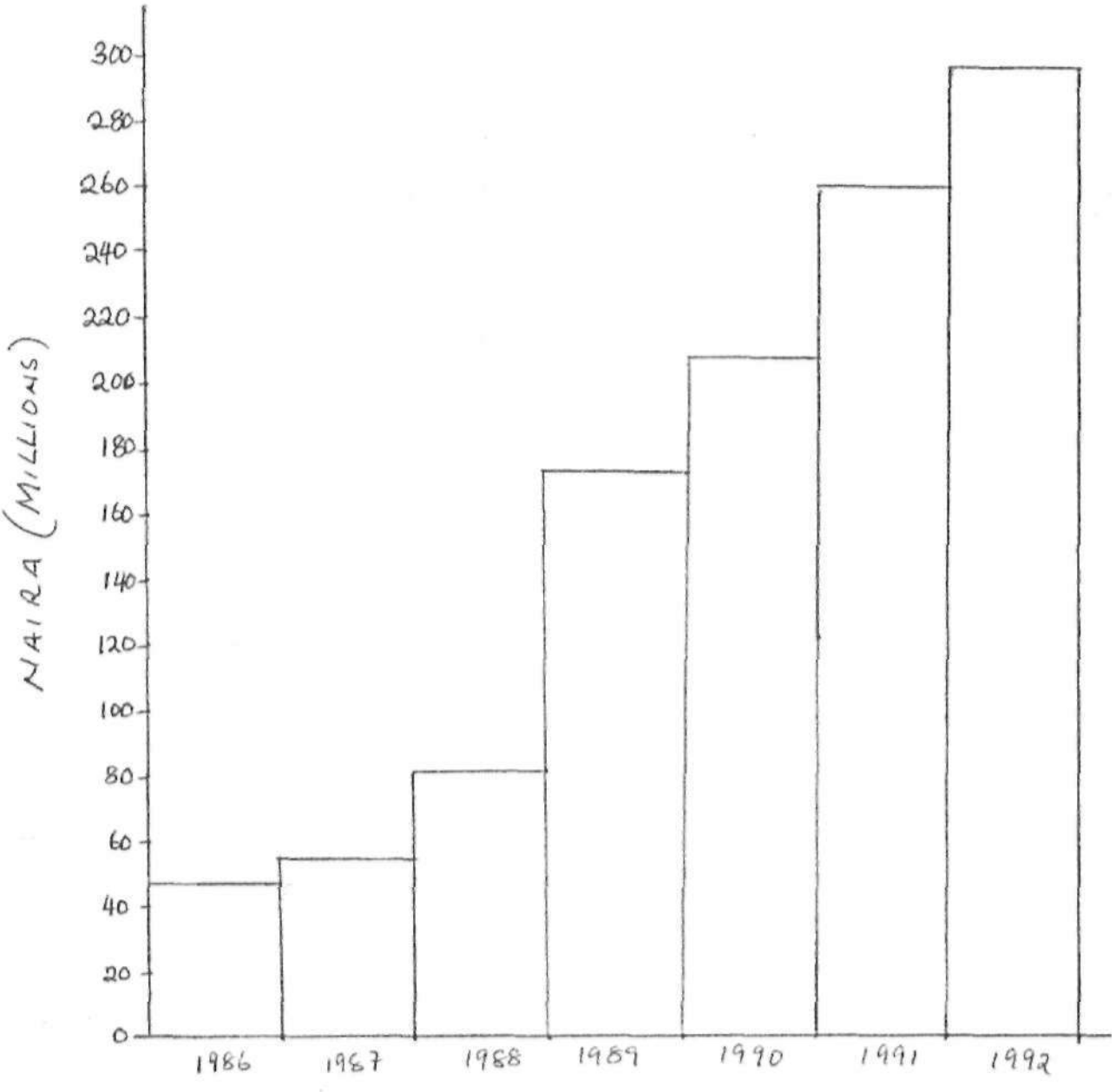
vi. Payment to Government.

See Appendix F: Mention is made also on the company's contribution to National Development.

From the charts and graphs (fg 1 - 4) evidence is shown that there was a steady increase in the indicators stated above for the period involved, except the payment as percentage of turnover which reached 58% and 45% in 1991 and 1992 respectively. See figure 2.

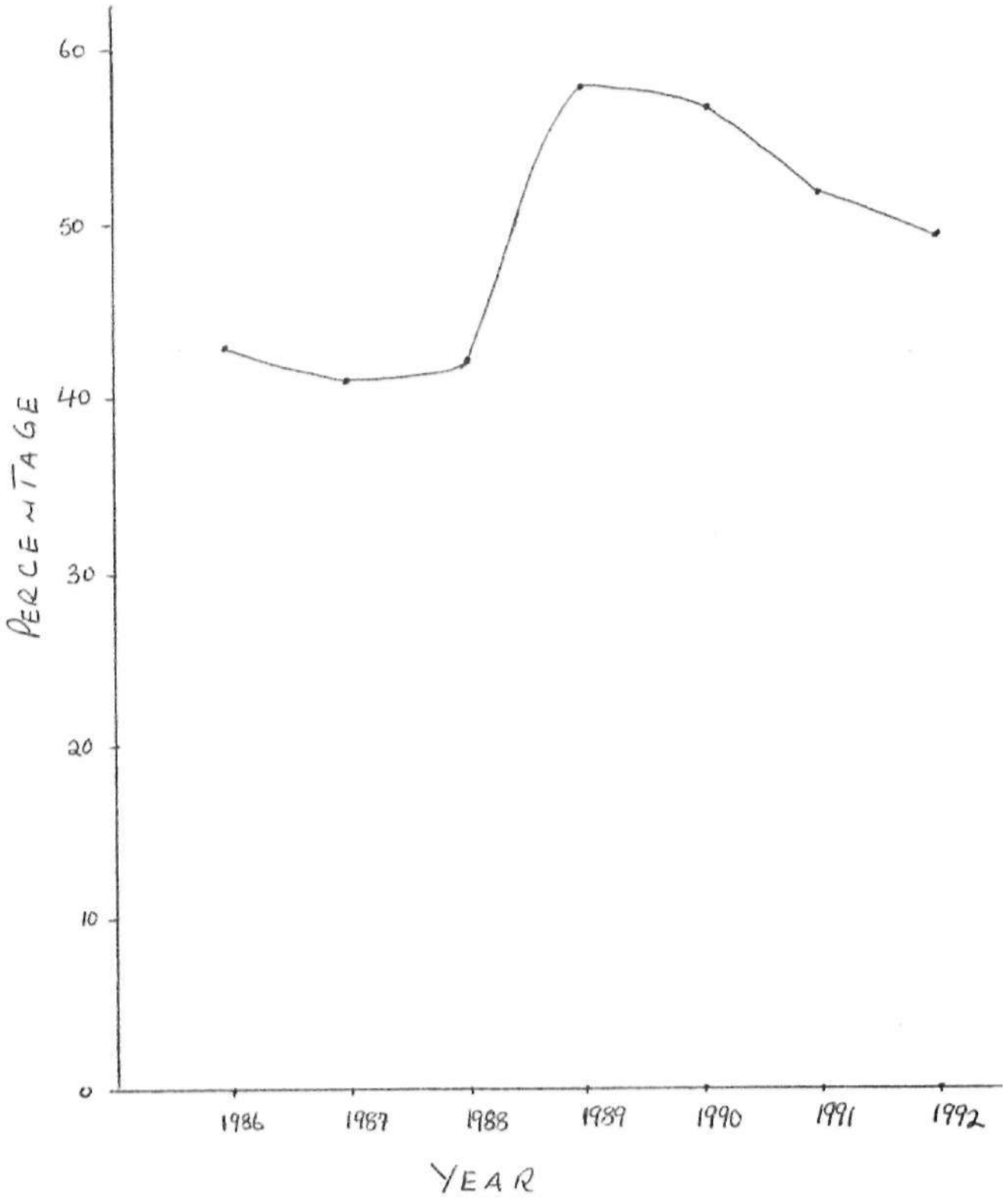
Similarly, earnings per share and dividend per share reached 79,3K and 66k respectively in 1990 but the earnings per share dropped to 59.1K in 1991 and rose again to 62K in 1992. The dividend remained at 44K per share for both 1991 and 1992. See figure 4.

FIGURE 1



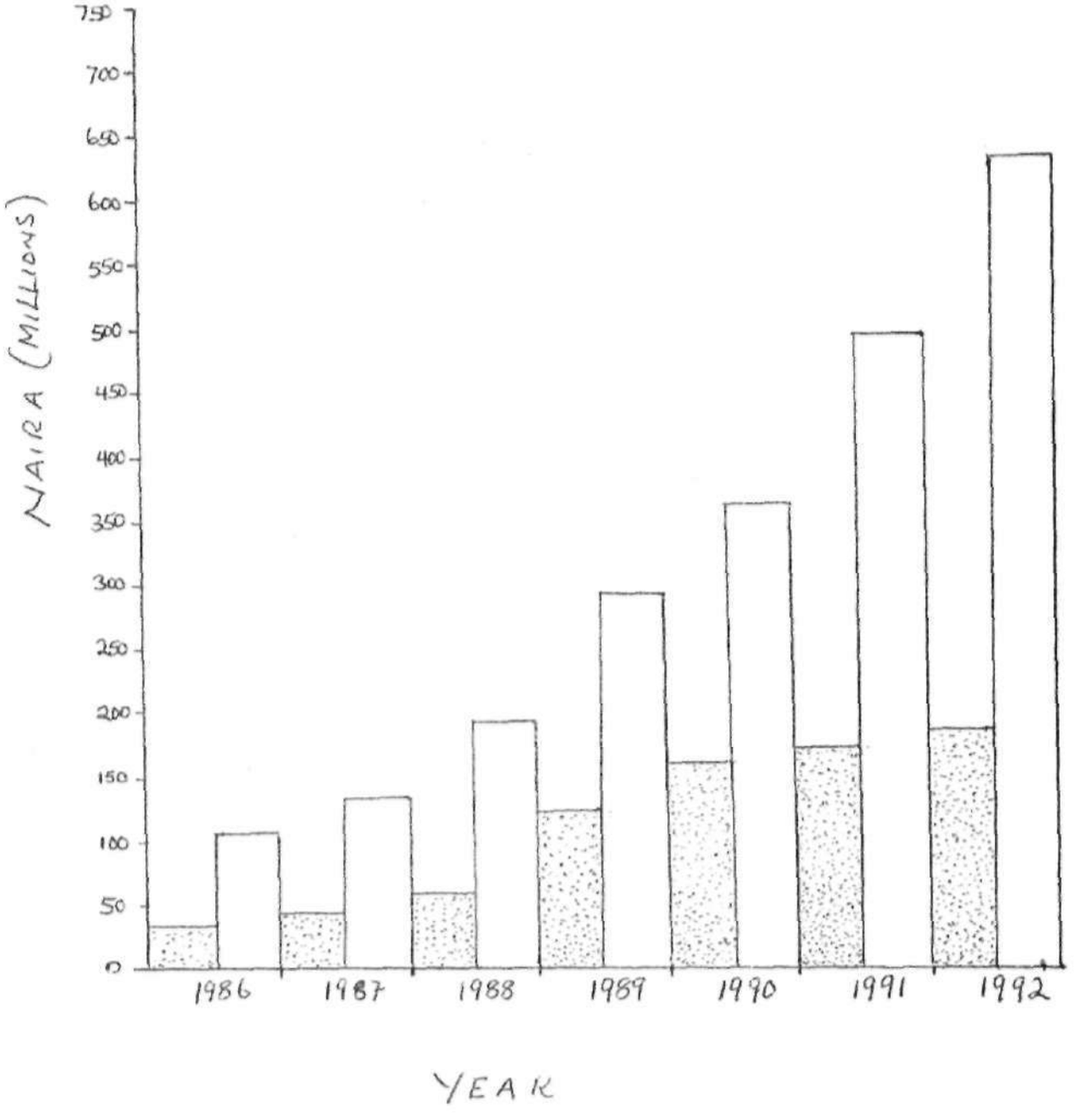
TOTAL PAYMENT TO GOVERNMENT.

FIGURE 2



PAYMENTS AS PERCENTAGE OF TURNOVER

FIGURE 3



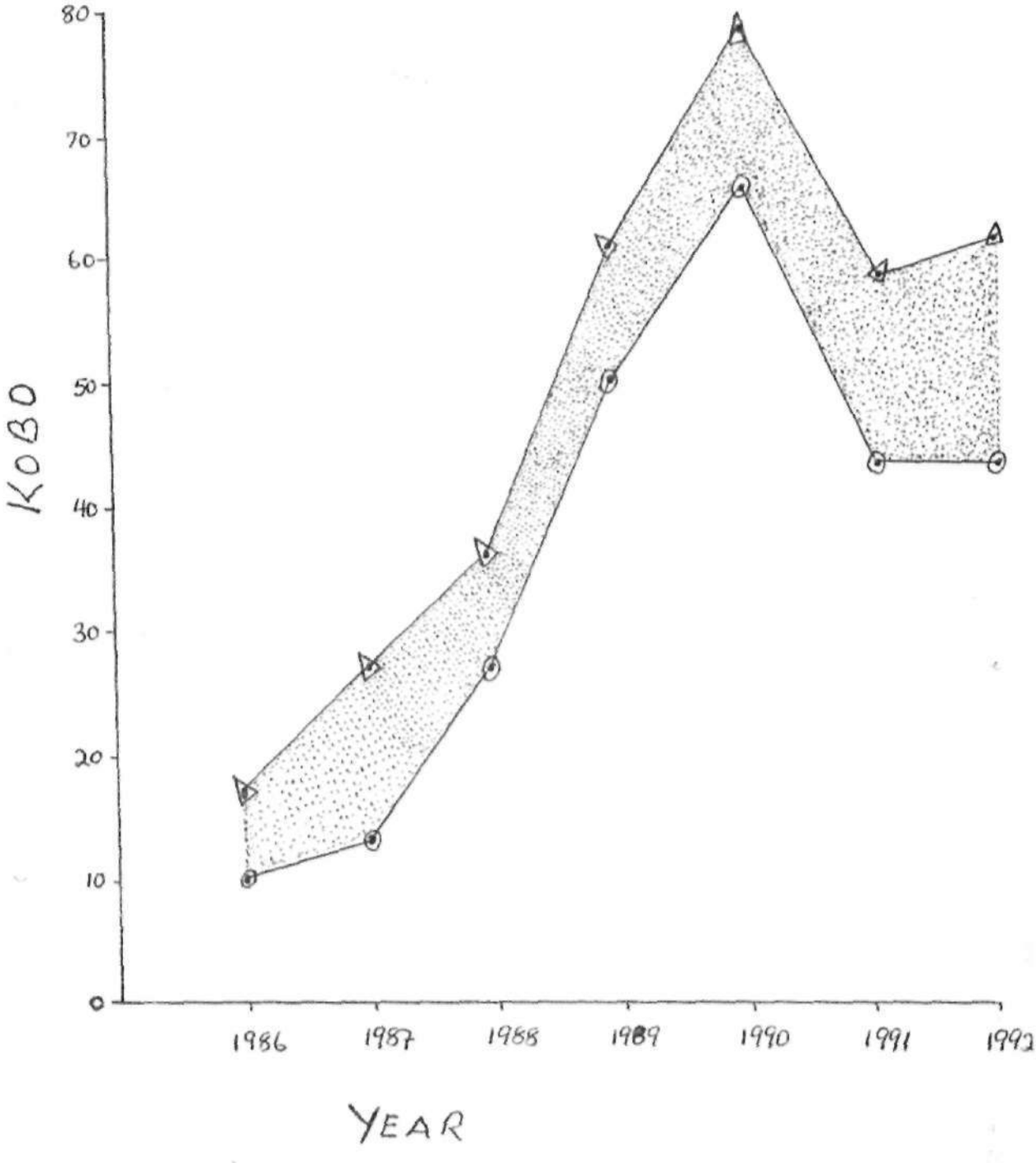
TURNOVER AND PROFIT BEFORE TAX.

KEY

PROFIT BEFORE TAX

TURNOVER

FIGURE 1



EARNINGS PER SHARE

DIVIDEND PER SHARE

KEY

△ EARNINGS PER SHARE

⊙ DIVIDEND PER SHARE

▨ EARNINGS RETAINED FOR GROW

THE COMPANY'S CONTRIBUTION TO NATIONAL DEVELOPMENT.

The company has been contributing in no small measure to National development. Its contribution has been in such areas as agriculture, industrial expansion, National revenue and Social development in the various communities in which it operates.

The company is involved in tobacco and food crop production. This has been introduced to farmers in different parts of the Country, such as Sokoto, Kano, Oyo, Kaduna, Plateau, Benue, Bendel and Enugu States. The company provides the farmers with all the crop imputs and its trained staff live on the spot to help and advise the farmer.

To facilitate the production of both tobacco and other crops, the company has established two training centres known as the Young Farmers Training Centres (Y.F.T.C.). The training centre which is also known as Demonstration and Training Centre is a section of the leaf Department. The two centres are located in Iseyin (Oyo State) and Maigana (Kaduna State). The centres are charged with the responsibilities of training independent young farmers to take farming as a career and also in Training the company's staff. In these centres seed multiplication, experiments and trials on tobacco and other crops/animals are made with a view of enhancing greater productivity. That is the instruction at this centre covers crop growing, afforestation, orchard farming, elementary building methods, tractor operation

and relevant financial skills. This programme of developing the domestic leaf crop has been so successful that 95 percent of the tobacco used by the company is grown by these independent farmers, with the balance imported only for blending purposes in international brands like Benson and Hedges. The company, through its extension services has well over 17,000 farmers growing tobacco which is graded and bought it at the harvest period.

Though the continued development of tobacco as a cash crop is still the company's primary agricultural aim, it has for long introduced a system whereby farmers grow certain food and cash crops in rotation with their tobacco. The crops grown include: Maize, Guinea corn, Cassava, Yam, Sorghum Cow-peas, Groundnut and Soya-beans.

The company has also helped in the industrial expansion of Nigeria. The factories built in different parts of the country offer ample job opportunities to thousands of Nigerians. The company also helps in the development of manpower by providing training for its employed workers. The company attaches great importance to training and development and has been in the fore-front of management development in Nigeria for which reason it has been nicknamed, "Nigerian Training Company". The company's Training and Development Centre is in Ibadan, where most grades of staff are trained, and some times, international courses, seminars and work shops for associated companies in Africa are also hosted.

Government-approved adult literacy classes are run by the company to enable certain of its employees to acquire basic educational qualifications. For the more advanced and specialised training, the company's managers are sometimes sent overseas, either to B.A.T. Group Training Centre in England, or on attachment to associated companies in other countries where the group operates. Through the company's close association with the Research and Technological Centre in the United Kingdom (U.K.), and various other companies within the B.A.T. group, it has been able to keep itself abreast of modern technological developments and techniques which make its product competitive with other brands on the markets.

The company has been contributing to the national revenue by way of import duty on materials, excise duty on the finished product, and tax on the company's profits. See Appendix: F (item No. 1a & b) for the company's contribution to national revenue through taxation and excise, from 1986 to 1992.

The company has not relented its effort in the past in contributing to social development of the entire country, particularly in those areas in which it operates. Sports promotion, participation in community affairs and award of scholarships have remained its areas of concerned in uplifting the educational and social well being of the Nigerian Citizenry. Notably among its contributions in the past are the donation of a pathological laboratory to the college of Medicine of the

Lagos University Teaching Hospital, the donation of a demonstration farm, complete with an irrigation dam, to the institute of Agriculture, Ahmadu Bell University, Zaria etc.

Today, the company also contribute generally in sporting activities like athletics, golf, horse racing, polo and lawn tennis.

CHAPTER FIVE

CAPITAL BUDGETING IN NIGERIAN TOBACCO COMPANY (PLC)

Data Presentation and Analysis:

The preceding chapters have no bearing on the organisation chosen as the case study, except chapter four which discusses the historical background of the organisation, its organisational structure, performance and contribution to the National Economic Development of Nigeria. These areas discussed about the organisation have little or no bearing at all with the main focus of attention in this project.

Therefore, this chapter presents the crux of the matter about the organisation.

5.1 PROJECT GENERATION AND ANALYSIS

a. Project Generation:

Based on the questionnaires served and discussions held with the corporate affairs Manager, the Assistant Chief Account (Operations) and other Senior Management Officials, the idea for new project generation is strictly the responsibility of the Board of Management Committee.

b. Project Review Committee:

The Company has a Central Review Committee for project appraisals. This committee reviews all major projects undertaken by the company. At the factory level, there are no project Review

Committees. This is because projects are initiated centrally and once approved, the three factories only ensure the execution of the projects.

The Review Committee is made up of staff specialists who are drawn from the three factories, including the Head Quarters. The committee is equipped with such specialists so as to take care of the technological, commercial and market uncertainties, coupled with social, economic and political vagaries that are usually associated with project execution.

Though the company (Zaria) makes use of committees to facilitate cross fertilization of ideas, the committees focus their attention on other operational matters of the company, and have little or nothing to do with the Central Review Committee.

c. Average Size of Project for Formal Analysis:

According to the response received from the filled questionnaires, projects requiring an outlay of at least ₦20,000 are formally analysed.

d. Acceptance of Formally Analysed Projects:

The company was asked to indicate what percentage of projects subjected to analysis are usually accepted. Findings indicate that at least (¾) of such projects are normally accepted by the company.

e. Responsibility for Project Analysis:

Seeking to know which division (s) are responsible for analysing investment projects, the company

indicated that the finance division alone is responsible for such analysis.

f. Stages of Capital Budgeting Process:

Here it was sought to know from the company which stage of the budgeting process proves the most difficult to it (see page 24 for the stages).

The response Received here shows that the Nigerian Tobacco Company (NTC) considers project definition and cash flow estimation to be the most difficult state because of uncertainty in the economic environment.

5.2. CAPITAL BUDGETING TECHNIQUES:

The company was asked to indicate which techniques it uses as its primary and secondary tools.

Response from the respondents indicates that the company uses profitability Index (PI) or Benefit-Cost Ratio as its primary tool, while Internal Rate of Return (IRR) method is used as the Secondary tool in project appraisals.

The company prefers the PI method which is similar to the NPV because it measures the relative present value return per Naira invested - i.e the naira return for each naira invested. And more so it is simple to calculate. (See page 33 for the techniques).

5.3. RISK AND UNCERTAINTY:

Generally firms are usually faced or troubled by both business and financial risks which are caused by constant changes in the environment, particularly the

economic environment.

In seeking to know the types of risk the company encounters in its business undertakings and the degree of importance it attaches to such risks, the following results were obtained:

1. Unfavourable economy 60%
2. Business Risk 25%
3. Financial Risk 15%

By these findings, it appears the company is bothered more about the general economic environment in which it operates, since its performance is determined to a greater extent by the general trend of the economic environment. The financial risk which can affect its ability to meet its financial commitment is given little emphasis.

In seeking to know whether the company considers risk and uncertainty in capital budgeting, the response was in the affirmative. Meaning the company explicitly takes risk and uncertainty into consideration in capital budgeting decisions.

In response to the question on classification of projects into risk classes, and whether different capital budgeting techniques are used for projects in different classes, the company indicated that such classifications are made but declines to use different capital budgeting techniques for different classes of risks. This means that the company uses the same capital budgeting techniques for all classes of risks.

Adjusting Risk and Uncertainty:

In seeking to know which techniques the company uses to adjust for risk situations, the company indicated that it uses sensitivity analysis method to adjust for risk and uncertainty where situation are considered to be either pessimistic, most likely or optimistic. (See the techniques in page 56 ---).

5.4. **COST OF CAPITAL:**

Here, the questions asked were meant to test whether the company has a thorough knowledge of the concept of cost of capital.

The first question sought to know what the company regards (or considers) as its Cost of Capital or financial, while evaluating projects.

No response was received with regard to this question, and it is rather difficult to make assumption as to why the company did not answer the question.

However, it should be understood that the basis for determining the cost of capital, should be the Weighted Average Cost of Capital (WACC), which comprises the cost of the various components of financing, weighted in the proportions they occur in the firm's capital structure. Even if additional funds are raised through Debentures to finance a project, the cost of capital should be one based on the marginal cost, which is the average cost of new or incremental funds raised by a firm.

The company was also asked if it has a fixed cost of capital serving as a cut-off point for project

acceptance.

The response received here is negative. Why the company gave such a negative response is difficult to understand, however, we might presume that the respondents probably do not have a clear concept of what the cost of capital is all about.

The cost of capital, being a cut-off or the target, or the hurdle rate, is considered the minimum rate of return required on investment projects. A project is accepted when the rate of return is greater than the cost of capital, meaning the value of the company will increase.

It essentially helps in appraising projects, designing the firm's capital structure, deciding the method of financing at a given time and can be used to evaluate the financial performance of top management, by making a comparison of actual profitabilities of the projects undertaken with the projected overall cost of capital, and an appraisal of the actual costs incurred in raising the required funds.

5.5. CAPITAL RATIONING

Here two questions were asked with a view to find out if it sometimes becomes obvious for the company to ration its capital and, what usually calls for such rationing.

According to the response received, the company postpones the execution of its projects to a time it is financially convenient for it. The response shows the company probably did not understand the question or that

the company is always interested in executing all its viable projects.

When the company was asked what it considers to be the major reasons for its capital rationing, it indicated that the limit placed on borrowing by internal management is one basic and fundamental reason for capital rationing within the organisation. (See reasons for capital rationing on page 53).

5.6. **INFLATION**

Because of the impact of inflation on Capital budgeting decisions and the need to always give it a serious attention, the company was asked if it accounts for inflation while considering investment projects.

The response received shows that the company accounts for inflation in its capital budgeting decisions. This is done by estimating the inflation rate which is built into the impending projects. That is to say the company estimates the cash flows at present day prices.

5.7. **PROJECT ABANDONMENT:**

Sometimes it becomes obvious for a firm to abandon a project even when it has been started. This may be as a result of insufficient funds, economic depressions making it difficult for the firm to get inputs for the completion of the project, unviability of the project in the long run etc.

As part of the research questions asked, the company was made to indicate whether it has ever started a project which it late on abandoned.

The company responded it has never ever abandoned any project.

Its response to one of the questions on project abandonment shows that as from 1987 to 1992, the company embarked on four (4) projects, which included the purchase of new machinery and the building of leave Warehouses, e.g. the acquisition of a high speed cigarettes making and packing machinery at the cost of ₦89 million and ₦75 million respectively. These were obtained from a consortium of 8 banks.

5.8. PROBLEMS ENCOUNTERED BY (NTC) IN CAPITAL BUDGETING

There is hardly any organisation that does not encounter one problem or the other in capital budgeting. This is because the capital budgeting programmes always have alot of financial, social economic and political implications, so much such that embarking on them requires extra care.

The Nigerian Tobacco Company (NTC) is not an exception to this common phenomenon. From the response received in the questionnaires and the verbal discussions had with some of the top management officials at the Zaria factory, the common problems the company faces include the following:

1. **Financial Constraints:**

   The devaluation of the Naira, especially in 1992 as lamented by the Assistant Chief Account (Operations), resulted in very steep increases in the cost of imputs - whether imported or local.

Devaluation also pushed interest rates up, thus compounding the inflationary trends already bedevilling the Nigerian economy.

2. Getting foreign exchange became difficult because of the documentary requirements by the Central Bank. More so, funds are raised at exhorbitant lending/borrowing rates.

3. **Infrastructural Facilities:**

This problem entails the lack, insufficient or ineffective supply of such basic public utilities like electricity, water, Telecommunication, transportation etc. within the Country. Particularly, the constant stoppages of electricity supply affects the company's production greatly.

4. **Raw Materials:**

In the area of raw materials, the company can be said to be the only one that has the highest dependability on local sourcing of its needed raw material, though little content comes from overseas. Despite that, the company will some times face the problem of obtaining its raw materials, especially from abroad, though the local sourcing sometimes pose problems also, especially during bad seasons when low production of the tobacco leaves and other material are made.

5. **Centralisation of Decision Making**

The factories hardly have any autonomy in initiating and executing projects on their own. Everything is

centrally done at the head quarters. Thus the factories always have the problem of getting proposals approved at the Head quarters. As contained in the company's policy concerning capital expenditure or major repairs to fixed Assets of the company, any such expenditure that requires money over ₦200 has to be referred to Head quarters for approval. Permission for incurring such expenditure is sought by filling a Capital Expenditure Authority (C.E.A) form, where justification for the cost is also specified by the officer making the proposal.

6. Like any other organisation, the company finds it difficult to estimate the inflation rates, risk and uncertainty in its capital budgeting decisions.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

SUMMARY:

The main focus of this research work is on the application of capital budgeting techniques in appraising investment projects. It is therefore, necessary to give summary of the theoretical framework and any other aspects discussed so far. The Capital Budgeting is seen as the process of planning expenditures, committing of funds and executing long-term projects whose stream of economic benefits is expected to accrue over a period greater than one accounting period or one year. Or in other words, Capital Budgeting is the decision area in financial management which establishes goals and criteria for investing resources in long-term projects, with the view of reaping future benefits. Such investments are usually associated with high degree of risk which needs to be handled with seriousness in capital budgeting.

The Capital Budgeting decisions are important because of their long-term implication for the firm, since huge amount of money is involved and they are difficult to make.

Capital budgeting helps in making cash forecast, to determine the levels of cash disbursements and the cash inflows in any viable projects, and to eliminate some costs which a firm may incur. With the capital budgeting, Management in decentralised companies can

liaise properly with the plans and operating targets of divisions or plants.

The Capital budgeting process involves four principal steps which include:

1. Project generation and cash flow estimation
2. Financial analysis and Project Selection
3. Project Implementation or Execution and
4. Project review.

In capital budgeting, there is the need for estimation of cash flow which serve as the basis for analysing the future benefits for any investment proposal. For clearity, it should be understood once again, that the initial cash outlay on a project includes the original cost of purchase and installation costs, insurance premium, repair and maintenance charges, depreciation and property and income taxes. Also the capital outlay could be applied to a transaction in which an asset is acquired by incurring a long-term debt or by issuing stock.

The cash inflow expected from projects usually result from increase in cash revenue and/or cash saving through a reduction in operating costs. Net cash flows are estimated on an after-tax basis, since tax payment is an outflow of cash.

Very important too in capital budgeting is the consideration on depreciation and cost of capital of the project. In depreciating any asset, the straight line method, sum of the year's digits or declining balance

methods are used. The cost of capital serves as the cut-off or the target or hurdle rate for accepting investments. It is thus the minimum rate of return required on an investment project in order to keep the market value per share at its current level.

For any capital budgeting considerations, techniques used for evaluating project proposals may include:

a. Payback period (PB)

b. Accounting Rate of Return (ARR)

c. Net Present Value (NPV)

q. Internal Rate of Return (IRR)

e. profitability Index (PI)

Projects are compared and selected in each of the methods by using some decision criteria. Whichever method ranks the best has its merits and demerits also.

When Sharpe (1994) introduced the capital Asset ?pricing Model, it was linked to the capital budgeting decision problem. That is the model can be applied in capital budgeting also. In using the model, only the project's systematic risk is important, and a project is accepted when the expected return is more than the required return RK - i.e those projects with expected internal rates of return lying above the security market line.

Under capital budgeting it sometimes becomes necessary to ration capital. Though a firm may have several viable projects, it selects only a few because of insufficient funds to finance all the profitable projects. The capital rationing may arise due to;

Internal constraints imposed by management and external factors - imperfections in market information, high lending and borrowing rates, transaction costs etc.

As already pointed out above, investment decisions are associated with a lot of business and financial risks. Techniques used in handling risk may include:

i. Pay back Period

ii. Risk Adjusted Discount Rate

iii. Certainty Equivalent

iv. Statistical Techniques etc.

It should not be forgotten that capital budgeting in an inflationary economy poses a lot of problem. Principally, there is usually a wide gap between the norminal and real future cash flows as the purchasing power of the monetary unit is reduced considerably. The real cash flows decline with inflation and as a result, firms invest less, seek investment with faster payments, and become less capital intensive. Therefore in estimating cash flows, it is important for firms to take into account expected future inflation.

At the end of it all, a project can be abandoned though its economic life is not over, when it is realised that its abandonment value exceeds the present value of the projects subsequent future cash flows -i.e the discounted future cash flows from the continuing project are less than the proceeds of abandonment.

From the findings made, it is understood that in the course of its capital budgeting decisions, the Nigerian Tobacco Company (NTC) uses a central Review Committee for review of its major projects. Formal analysis of project propals is made for an outlay of at least ₦200,000.

In appraising the viability of projects, the company uses techniques like the profitability index (PI) or Benefit Cost Ratio and the Internal Rate of Return (IRR) method.

While doing so, risk and uncertainty are adjusted by using the sensitivity analysis method, and more importantly too, inflation rates are always adjusted and built into the projects.

CONCLUSION

Investment decisions are strategic. Future success depends on the investment decisions made today. This explains why important investment decisions must be approved by the chief operating executive or the board of directors.

Inspite of this fact, the procedures to help management make investment decisions are frequently almost unbelievably primitive as firms would sign a long-term contract for supplies of an important raw material without carefully investigating the various sources of supply and considering the relative advantages of each in terms of price, service, and quality. Some times investments are approved without consideration of alternatives. Even when there is an investigation of alternatives, the information obtained is generally not used in a manner likely to lead to effective final decisions. Management sometimes do not do a better job of making the crucial investment decisions, because they frequently do not know how to organise the relevant information in a way that will effectively help them make better decisions.

Pertaining to the application of the investment techniques, it would be understood that various executives faced with the same set of investment possibilities, but using different measure of investment worth, will tend to make dissimilar investment decisions.

And since investment proposals are rarely accepted by top management solely on the basis of analysis made in each technique, it may be argued that the choice of method is of little importance to them, because the decision is likely to be influenced by many different factors. Primarily it will be of importance if the executives making the final decision are intimately familiar with the proposals, aware of the risks involved, know the possible technical or operating problems that may be encountered and realize the potential erosion of earnings resulting from competitive action or changing technology.

However, to make reasonable choices in Weighing alternative investments, it is absolutely necessary that various proposals be evaluated as nearly as possible on some uniform comparable basis.

From the finding made so far, it appears the Nigerian Tobacco Company (NTC) is not doing so bad in the application of the budgeting techniques, for we have mentioned earlier in the preceeding chapters that the choice of method(s) of project appraisal by a firm will depend on the circumstances surrounding the organisation. Whatever method(s) the company has chosen is probably based on the adaptability, simplicity and convenience of the method(s) to it.

SUGGESTIONS AND RECOMMENDATIONS

In a write-up like this, it is always good to lay down some suggestions and recommendations which, it is hoped would help to throw more light or solve problems and strengthen ideas discussed in the main text. Essentially, the few recommendations proffered are based on the difficulties encountered during capital budgeting and lapses found in the capital budgeting practices of the company.

1. As discovered, just like any other business organisation, the company's operations and decisions are subjected to environmental variables which include changes in the economy, Competitions, technological changes, and governmental interferences, all of which could serve as opportunities and constraints for the company.

Since the environmental variables are beyond the control of the company, its continuity depends largely on its ability to make long-range forecast of these variables in order to reduce the impact of risk and uncertainty on its operations.

Therefore to combat these challenges, it will do the company a good deal if it can use the forecasting techniques of input-out-put analysis.

2. While a company is faced with external constraints, it should not be forgotten that it has internal constraints also. For proper and successful project execution, there is the need for adequate reassessment of

the internal resources at the company's disposal. Thus the company needs to assess its financial, knowledge/skills, manpower, facilities and management ability to handle the proposed project.

3. The company should see it as a point of duty to properly appraise and keep its staff (specialists and others alike) abreast of the principal capital budgeting processes and the techniques used in appraising projects, by conducting in-house workshops, Seminars, Conferences, and where training is required, the company should not hesitate to make adequate sponsorship.

4. The capital expenditure ceiling of ₦200 should be reviewed. Factories should be given a free hand to make repairs, replacements or additions to fixed assets up to the tune of ₦1,000, at least to take care of emergency situations, so as to avoid unnecessary stop-pages in production. For proper accountability, the Area Accountants should be given the mandate to monitor such expenditures which should be fully receipted and, the Head quarters should be served with details monthly.

5. The company should consider the weighted Average Cost of Capital (WACC) in its capital budgeting decisions. Doing so, the financial manager should use the incremental weights which are supposed to be the estimates of the proportion or new capital to be raised over the planning period. The cost of capital should be determined at an after tax basis.

6. The company should employ the use of a cut-off, or target rate or the hurdle rate as a guide and, where degree of risk increases, the rate could be raised also to combat the risky situations.

7. Since different projects have different types of risk, it is advisable to classify projects into risk classes and for project acceptance, the hurdle rate should be varied with different degree of risk.

8. In its effort to incorporate or build inflation rates into the project investments, the company should in addition to other(s) use averages of published forecasts of economists. Also extrapolation techniques or more sophisticated forecasting procedures could be employed using data available on price increases (Consumer and whole sale prices in aggregate, by products and commodities, and average wage increases).

9. a. Where there are mutually exclusive projects the company should select a combination of the most should select a combination of the the most profitable projects, rather than embarking on projects on the basis of priority, for that will only lead to sub-optimal investment decision.

b. It will do the company a good deal if it can ration its capital appropriately where it has many profitable projects, rather than postponing the execution of even the most profitable ones until it is financially convenient for it to embark on the execution of the whole projects.

10. Though the company has not abandoned any projects, presumably during the period of study only, it is advisable for the the company to incorporate the abandonment option in the capital budgeting process, as this will ensure that capital is optimally allocated within the company. Those projects that have been started and are not justifying their continuity, the company should abandon them and withdraw funds for investment in those projects that justify the use of more funds on them.

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APPENDIX A:

DEPARTMENT OF BUSINESS ADMINISTRATION
AHMADU BELLO UNIVERSITY, ZARIA

QUESTIONNAIRE

1. Please tick in the box provided for any chosen response or answer.
2. You may write an extra sheet if the space provided is not sufficient enough.

PART A:

1. Name of Company:----------
2. Year of Incorporation:----------
3. Registered Office: ----------
4. What is the authorised share capital of the company?

PART B.

5. How is the idea for new projects developed?
   a. Recommendation of Research and Development ☐
   b. Management Consultant Recommendation ☐
   c. Board of Management Suggestion ☐
   d. Through the Market Research Department ☐
   e. Through a Special Committee ☐
6. Does your company have a Central Review Committee for project appraisal? ☐ Yes ☐ No
7. What is the average size of projects that need to be formally analysed?
   a. Above ₦20,000,00 ☐

b. Above ₦50,000.00 ☐

c. Above ₦100,000.00 ☐

d. Above ₦500,000. ☐

8. What percentage of the formally analysed projects is accepted?

a. Less than 10% ☐

b. 10% to 25% ☐

c. 25% to 50% ☐

d. 50% to 75% ☐

e. 75% to 90% ☐

f. More than 90% ☐

9. Which Division (s) has the responsibility for analysing capital projects?

a. Finance ☐

b. Commercial ☐

c. Personnel/Administration ☐

d. Industrial/Local Content ☐

e. Others (specify) ----------

10. Which stage of the capital budgeting proves the most difficult?

a. Project definition and cash flow estimation ☐

b. Financial analysis and project selection ☐

c. Project Implementation ☐

d. Project Execution and Review ☐

11. Please state briefly what causes the difficult: ---

---

12. Of the following capital budgeting techniques, please "A" by the primary techniques and "B" by the secondary techniques you currently use.

a. Accounting rate of return ☐

b. Pay back period ☐

c. Internal rate of return ☐

d. Net present value ☐

e. Profitability index ☐

f. Others (specify):----------

PART C:

13. Do you consider risk and uncertainty in the analysis of capital projects? ☐ Yes ☐ No

14. Do you classify projects into risk classes?

Yes ☐ No ☐

15. Do you use different types of capital budgeting techniques for different classes of risk? ☐ Yes ☐ No.

16. Which of the following methods do you use to adjust for risk and uncertainty?

a. Increase the required rate of return ☐

b. Decrease pay back period ☐

c. Certainty equivalent ☐

d. Use sensitivity analysis ☐

e. Others (specify) ----------

PART D.

17. What do you regard as your cost of capital or financial?

a. Weighted Average Cost of Capital ☐

b. Interest on loan ☐

c. Opportunity Cost ☐

d. Cost of Equity ☐

e. Others (Specify) ☐

18. While evaluating projects for acceptance, do you have a fixed cost of capital serving as a cut-off point? Yes No

19. What do you do when you have many viable and profitable projects, but do not have enough funds to execute all of them?----------

---

20. What do you consider to be the major reasons for capital rationing in your company?

a. Debt limit imposed by an outside agreement ☐

b. Limit placed on management external to the company ☐

c. Limit placed on borrowing by internal management ☐

d. Restrictive policy imposed on retained earnings for dividend pay out ☐

e. Maintenance of a target earnings per shares ☐

f. Others (specify) ----------

PART E.

21. Do you consider inflation when analysing projects?

☐ Yes ☐ No

22. If yes, how do you account for inflation in that respect? ----------

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23. Have you ever started projects, which you later abandoned? ☐ Yes ☐ No

24. If yes, why? ----------

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25. Do you later continue with such projects? ☐ Yes ☐ No

26. If yes, how do you evaluate the projects? ----------

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27. What difficulties does your company encounter during capital budgeting decisions? ----------

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28. As from 1987 to 1992 how many project proposals did your company make, selected, executed, abandoned and later continued with?

a. No of project proposals ☐

b. No of profitable projects selected ☐

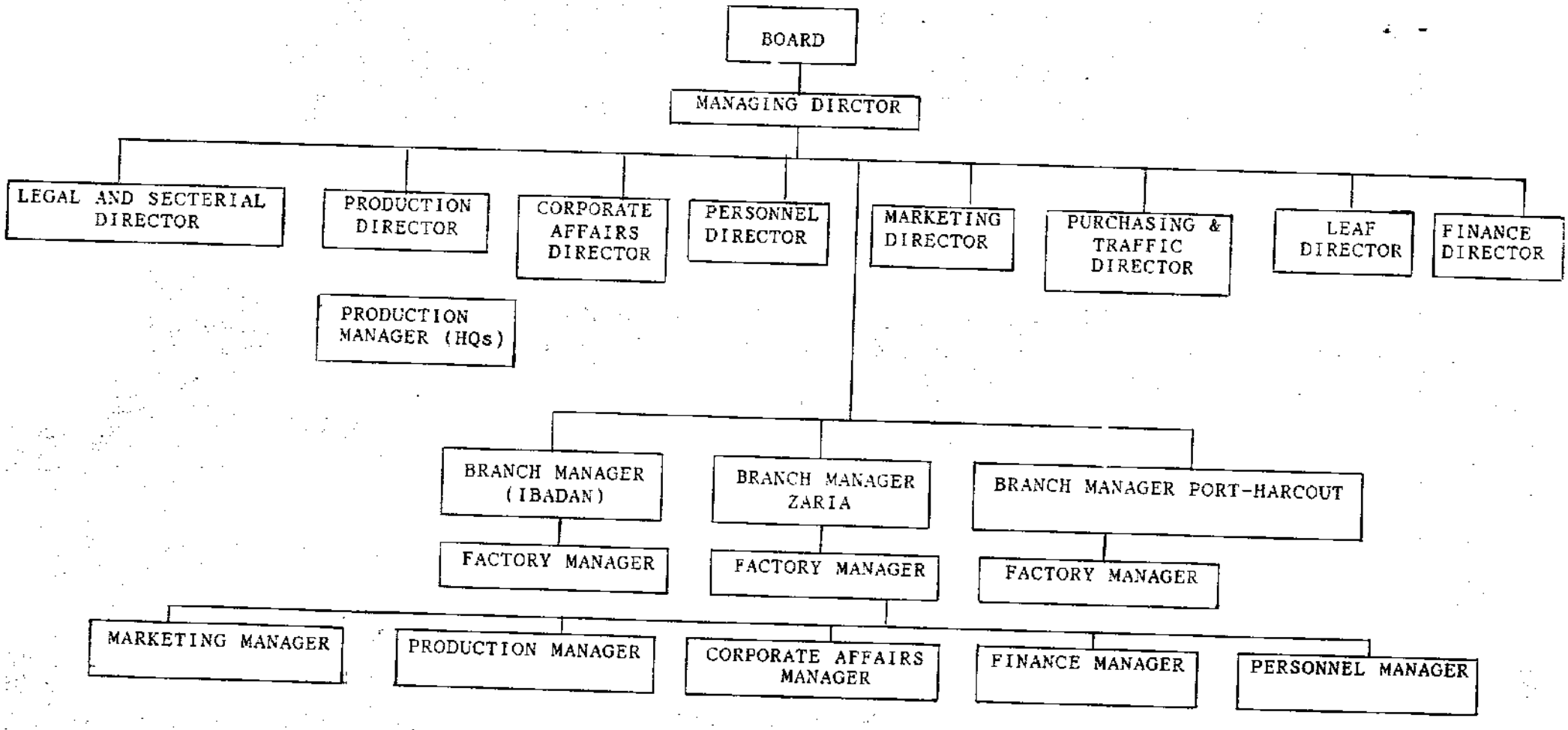
c. No of projects executed ☐

d. No of projects abandoned ☐

e. No of abandoned projects later continued with. ☐

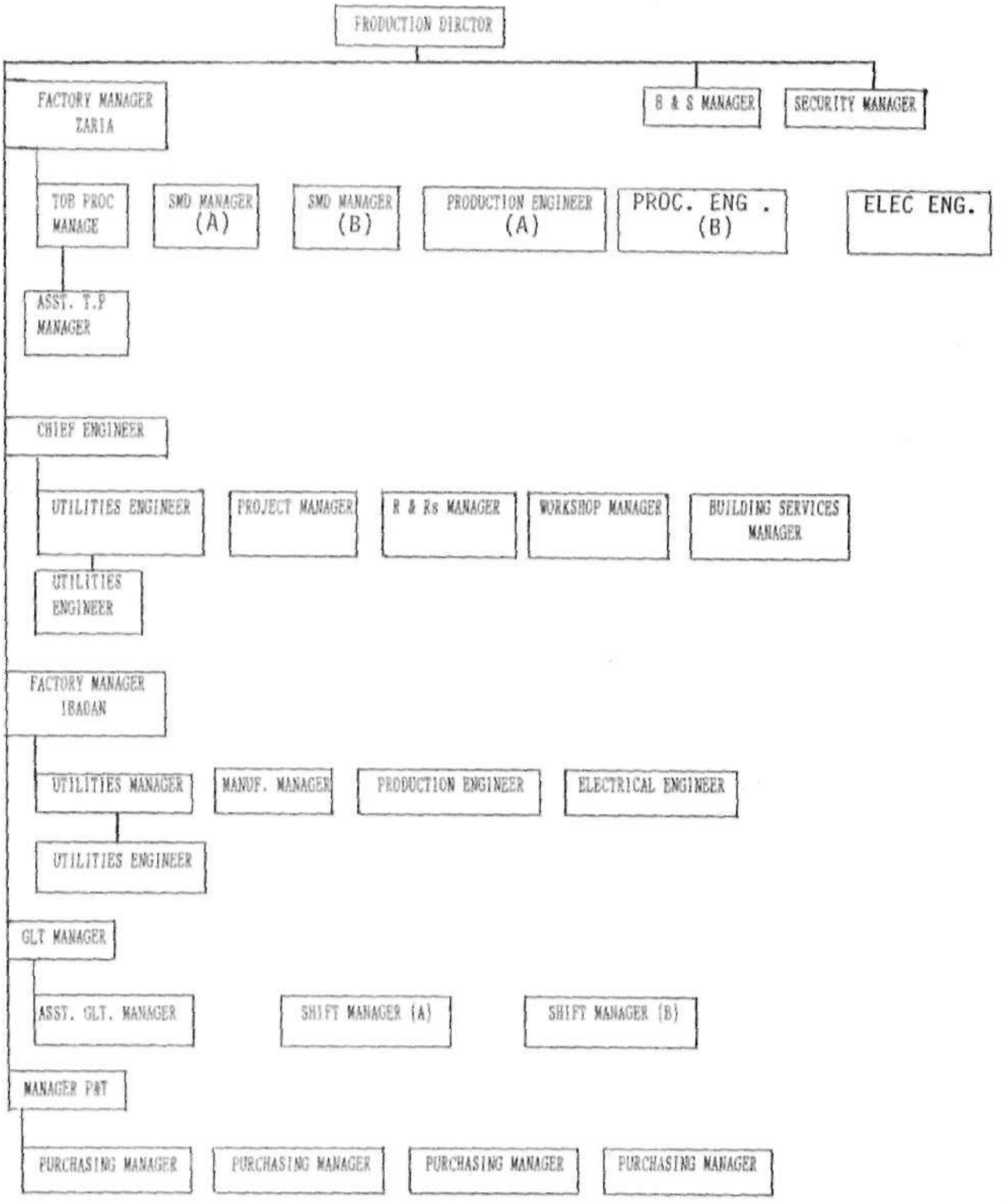
NTC UNIFIED ORGANOGRAM

APPENDIX B:



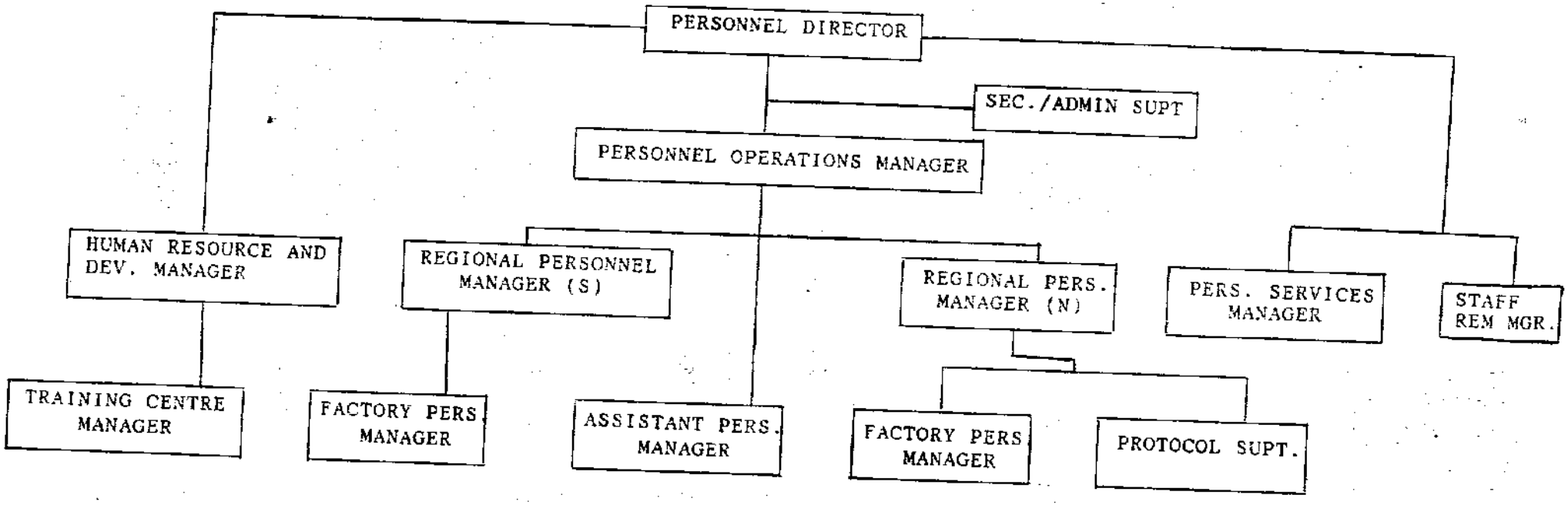
APPENDIX C:

PRODUCTION DEPARTMENT



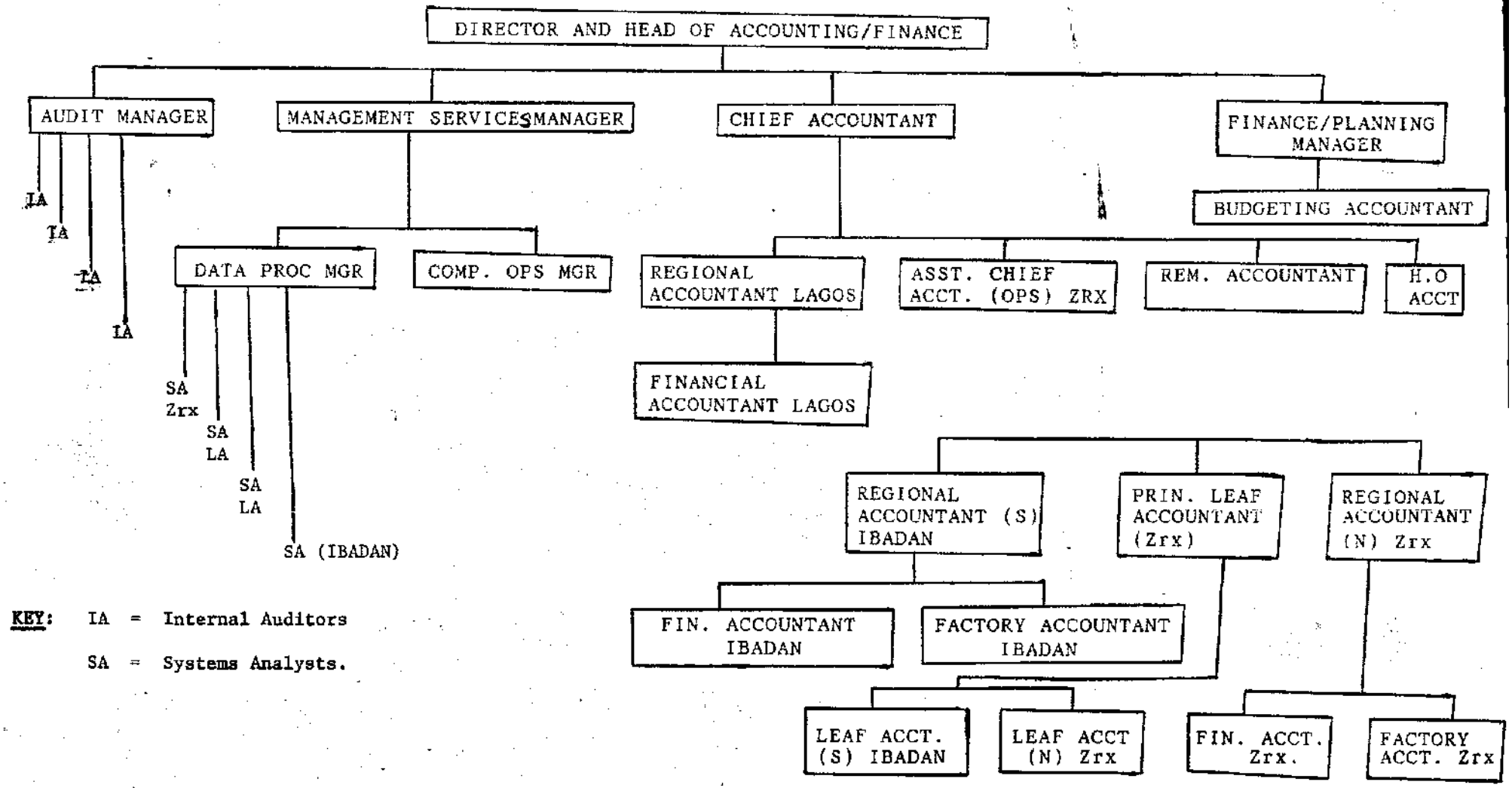
APPENDIX D:

PERSONNEL DEPARTMENT



APPEDIX E

FINANCE DEPARTMENT



KEY: IA = Internal Auditors

SA = Systems Analysts.

APPENDIX F:

N T C PERFORMANCE INDICATORS

	ITEM/YEAR	1986	1987	1988	1989	1990	1991	1992
1.	Payment to Govt.: a. Company tax	14,100	15,246	23,614	60,233	63,150	61,572	61,882
	b. Excise	32,208	39,939	56,920	112,215	144,113	197,567	232,874
	Total Payment	46,308	55,185	80,534	172,448	207,263	259,139	294,756
2.	Turnover	107,458	133,627	190,475	295,766	361,473	496,735	635,846
	Payment as Percentage of Turnover	43.09%	41.30 %	42.28%	58.30%	57.34%	52.16%	46.36%
3.	Profit before Tax	31,348	42,900	59,931	121,322	160,496	179,830	186,389
4.	Profit after Tax	17,248	27,654	36,317	61,089	79,292	118,258	124,507
5.	Dividends	10,000	13,500	27,000	50,000	66,000	88,000	88,000
6.	Earnings/Share	17.2K	27.7K	36.3K	61K	79.3K	59.1K	62.0K
7.	Dividends/Share	10.0K	13.5K	27.0K	50K	66.0K	44.0K	44.0K
8.	Retained Earnings	7,248	14,265	9,409	11,089	13,292	30,258	36,507

NOTE: Exraordinary item (1987) - ₦111,000

Extraodinary item (1988) - ₦92,000

Source: NTC Annual Reports and Accounts of 1986 - 1992.