INDUSTRIAL MANAGERS' ACCEPTANCE AND USE OF BUDGETARY CONTROL TECHNIQUES: AN EMPIRICAL APPROACH

VOLUME I

by

ALI MAHMOUD ABDEL RAHIM

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TO MY PARENTS

ABSTRACT

The theory of budgetary control has been challenged and its validity in practice has been in doubt. Moreover, although the literature is scarce it seems to present a confusion about the theory, since on the one hand accountants think very highly of budgetary control whereas management researchers do not show the same enthusiasm for the theory.

The preliminary field work, undertaken to clarify the situation, proved that the main factor which affects the relevance of the theory in practice is whether the executive managers do in fact use their budgetary information.

The study was therefore confined to find out the factors or reasons behind managers' use or otherwise of budgetary information.

Eight factories were studied, four of them intensively, which resulted in four case studies; 'A', 'B', 'C' and 'D', and another four factories, 'E', 'F', 'G' and 'H' were studied intensively in one department in order to cross-check the results obtained from the four case studies.

The findings show that only 55% of managers in the factories studied use their budgetary information with only 14% using it in accordance with the theory and 41% use it in a limited sense.

Furthermore, it has been ascertained that managers use their budgetary information mainly as a result of senior management's follow up, or as a result of a high degree of appreciation of budgets through high education, or as a result of both factors - high education and follow up. It was also found that education results in use being in accordance with the theory, whereas follow up results in limited use.

It has also been ascertained that factors which support use are : education, training in budgets, having long experience in budgets,

participation or consultation in budget-setting, senior management's follow up and accountant's role as an interpreter. Moreover, managers tend to use the most relevant budgets only and that they use those parts of the information which are followed up by their senior managers.

It was also found that factors which hinder use are : poor education, lack of training in budgets, short experience in budgets, non-consultation in budget setting, non-follow up, non-provision of the information, non-provision of the interpretation service by the accountant, and having long experience without budgets. Moreover, regarding the information as irrelevant by managers results in its non-use.

The thesis is presented in two volumes. Volume One presents the text in three parts :

Part I presents an introduction to the theory and to the object, methods and scope of the study.

Part II presents the evidence and results of the empirical study; the case studies and the limited investigations with each case study presented in a separate chapter, and each of the four factories of the limited investigation presented separately in the appendices. This part also presents a summary of the findings of the case studies and the limited investigations.

Part III presents the findings and conclusions of the study and suggestions for further research.

Volume Two presents the appendices which include the limited investigations, the interview guide questions, tabulated answers of managers, a detailed analysis of managers' use of budgetary information, the calculation of the relationships between managers' use of budgetary information and the different factors which affect it, and finally the sources of evidence in each factory.

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ABOUT THE RESEARCH WORKER

Born in October, 1938, he obtained his first degree in Commerce B.Com.Hons. (Accountancy Section) University of Cairo, June, 1959.

Since that time he was appointed as Assistant Lecturer in the Department of Accounting, Faculty of Commerce, in the University of Cairo. At the same time he carried out post-graduate studies for the Degree of M.Com. for one year.

In 1960 he was granted a Scholarship to study in the United Kingdom. He worked as an Articled Clerk to a Chartered Accountant in Manchester for one year. In July, 1963, he obtained the B.A. Com.Degree (Accountancy Section) from the University of Manchester.

Since October, 1963, he registered as a research student for the degree of M.Sc. in the Department of Management Sciences of the University of Manchester Institute of Science and Technology, carrying out the present research work, and in October 1964, his research work was upgraded to Ph.D. level.

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PART ONE

I N T R O D U C T I O N

The object of this Part is to introduce the study.

This part is divided into three Chapters, as follows :

CHAPTER I: presents a General Introduction to the Study.

CHAPTER II: presents an Introduction to the theory of Budgetary Control, and

CHAPTER III: presents the objectives, methods and limitations of the study.

CHAPTER I

INTRODUCTION

The progress of the industrial society depends largely on the competence of industrial managers. In the way that managers assume their task, the concept of the 'plan' or budget is assuming overriding importance. This seems to be the case not only at the industrial organisation level, but also at the national economy level.

The importance of the budget in business is shown to be evident by the development in accounting practice from the historical approach of recording and ascertaining actual results to the more constructive approach of helping management to forecast and plan the future activities of the business. It also helps management to evaluate performance in comparison with the plan and to take corrective action with the aim of achieving the objectives of the enterprise integrated in the plan.

The theory and practice of budgetary control is the focus of such development, since it enables the objectives of the enterprise to be translated into a comprehensive plan, called the budget.

Through responsibility budgeting, each manager is assigned a target which is a part of the plan. Through comparative periodic reports the principle of management by exception can be implemented; thus helping managers to concentrate on the main and significant problem areas.

However, the advantages of the theory as a control model can be gained only if managers use their budgetary periodic information for only then can managers achieve the objectives of the enterprise through achieving the plan. On the other hand, if managers choose not to use the system, it means that the enterprise has paid its cost in full and has not received its money's worth, controlwise. Thus the main condition of the theory is managers' use of their budgets and periodic information.

The application of this theory seems to be widespread in the industry. A recent research proved that "the use of operating budgets is widespread and of increasing importance in the British Industry".[1] Evidently the budgetary system is useful as a control model only if in fact it is used by the executive managers.

The central problem with which this thesis is concerned is to identify the reasons or factors which affect managers' use or otherwise of their budgetary information.[2] As such, the object of this study stems from the theory of budgetary control as a control model since it attempts to find out the factors which affect the main conditions of the theory.

The importance of this problem seems to be suggested by the increasing significance attached to budgetary control in practice. However, although there is evidence to suggest that the application of budgetary control is widespread in the British industry, other research reports[3] suggest that it is not vigorous enough and that British management on the whole is not as aware of the need for budgeting as American management. Thus, the application of the theory in the British industry, although widespread, is not as effective as that of the American industry.

The key element that affects the effectiveness of the application of the theory is the use of the budgetary information by the executive managers. While the accountant develops theories and systems, it is the manager and not the accountant who makes the application of such theories and systems effective or not since inevitably and organisationally he is the one who makes the decisions. Thus, unless the accountant has the backing of the manager, for his system, in the sense that the manager uses the

(1) J.Perrin, Budgetary Planning and Control in the British Industry, unpublished Ph.D.Thesis, University of London, 1958, p.320.

(2) The term budgetary information is used throughout the text to denote any information whether actual or forecasted which is related or compared with the budget, or based thereupon and is provided to a senior or a shop floor manager.

(3) Anglo American Productivity Council, Management Accounting, London, 1950, Graham Hutton, We Too Can Prosper, London: Allen & Unwin, 1953, and McGivering & Others, Management in Britain, University of Liverpool, 1960.

budgetary information, it is evident that the system would never be effectively useful controlwise.

In fact, this has also been ascertained in practice. The step taken, after setting the original object of the study, which was to try to prove the validity of the theory in practice from management's point of view, was to investigate in a number of factories whether budgetary control works in practice or not. If so, to what extent, and if not, why not?

In order to achieve the object of the study, the first step taken was to select a number of factories which would cooperate in the study, and would satisfy certain conditions to enable the research worker to carry out the field work. First, one of the most important factors is the willingness of the factories' management to provide the research worker with the case study facilities, without interfering with his conclusions.

Second, the factories selected must have a budgetary control system and the accounting theory at the very least must have already been developed. This means that the factories concerned must have highly qualified accountants.

Third, the factories concerned must be big enough in size to warrant the installation of a budgetary control system. This means on the one hand that the factories need not be too big in order not to complicate the study, and on the other hand, they need not be too small to render budgetary control irrelevant. Thus, the most suited size to this type of study is the medium sized factory which would need a budgetary control system and enable the research worker to study the whole control process in a reasonable length of time.

Fourth, the factories need to be in a competitive environment so that this would further the need for an effective control system.

As a result of preliminary enquiries, the research worker was fortunately able to find such a group of factories. The factories, whose names are withheld deliberately, are named A, B, C and D, for the purpose of the study. They are situated in different parts of the United Kingdom and are engaged in different technologies, but all are associated with the paper industry. This industry, apart from being competitive, is expanding, a favourable environment for budgetary control since prices and cost matter a great deal. Moreover, the group chosen is typicalof the British industrial organisational unit since it is a public company with a substantial family interest moving from the traditional climate of family business to the modern climate of professional management.

However, although the four factories are in the ownership of a holding company, they are completely different since they belong to different industries and have different products, sizes, budgetary systems, and management. In fact, the group follows a pattern of decentralisation with its geographical, product and managerial aspects.

Furthermore, the group has a decentralised accounting function which is under the direction of highly qualified accountants. As a result of this, it has been found that the theory is well understood and serious efforts were exerted in its application. Thus, the first group of factories studied corresponded to the conditions of the study. Moreover, the field work was completed in eighteen months and resulted in four case studies.

The empirical study in these four factories followed the logical sequence of the requirements of the theory of budgetary control.

First, the theory requires a clear cut organisation in which the authority and responsibility of managers are well defined. The first step in the empirical analysis was to study the organisation in order to see whether the organisation as such supports or hinders managers' use of the budgetary information. The study proved that although the organisation is not as perfect as the theory, there are no major obstacles which may hinder managers' use of budgetary information.

Second, the theory requires an accurate basis for the budget standards. This does not necessarily require the implementation of scientific standards, although it is claimed that the application of scientific standards would enhance the value of budgetary control. The second step in the empirical analysis was to study the process of developing scientific standards. The study proved that the implementation of scientific standards in the group studied on the whole is a clear application of the principles of scientific management. Thus, scientific standards do not represent a major obstacle which hinders managers' use of their budgetary information. On the contrary, scientific standards were found to provide a favourable environment for the development of budgetary control.

Third, the theory necessitates that its application should consider the objectives, problems and the circumstances of the factory concerned. These have been studied. As a result it has been found in each case that the objectives, problems and environmental circumstances do not hinder managers' use of budgetary information. On the contrary, these problems necessitate the application and use of budgetary control.

Fourth, the theory requires the implementation of a reasonable system of budgetary planning and control. These have also been studied and although not found as perfect as the theory, in most cases the study proved that the systems did not have any

major obstacles which may hinder managers' use of the budgetary information.

The research worker then, looked at the managers themselves, taking each as a case study, and through comparing managers it was found that managers' use or otherwise of the budgetary information is related to internal factors which concern the manager himself, such as his education, experience, training, participation in budget-setting, accountant's role as an interpreter and senior manager's follow up.

The next step was to cross-check the findings of the case studies in a completely different number of factories, in order to ensure that the factors identified do not belong to a certain set-up, and that they did not come up by chance. The factories chosen were identified as E, F, G and H. They were completely different in almost all aspects from the case studies, since they had different sizes, technologies, products, ownership, and management. Moreover, they had different systems of budgetary control. The study was concentrated on one department only and the field work was completed in six months. On the whole, the evidence confirmed the findings of the case studies. As a result, the field work was concluded.

However, it is difficult in this kind of study to be very precise about the evidence because all the circumstances are changing all the time in the factories. As such it is almost impossible to identify all the possible factors which may affect managers' use of their budgetary information at all times. But, the evidence seems to be fairly conclusive in suggesting that only 55% of managers in the factories studied use their budgetary information, with only 14% using it in accordance with the theory and 41% using it only in a limited sense.

Moreover, managers use their budgets and information mainly as a result of senior manager's follow up or as a result of high degree of appreciation of budgets through high education, or as a result of both high education and follow-up.

It was also found that factors which support managers' use of their budgets and information are - education, training in budgets, having long experience in budgets, participation or consultation in budget-setting, senior manager's follow-up, accountant's role as an interpreter, and regarding the budget as practical. Moreover, it has been found that managers tend to use the most relevant budgets and that they tend to use those parts of the information which are followed-up by their senior manager.

As to factors which hinder or limit use, these are poor education, lack of training, non-consultation in budget-setting, non follow-up, non provision of the information, non-provision of the interpretation service by the accountant, having long experience without budgets, and regarding the information as irrelevant.

The thesis is presented in two volumes. Volume one presents the evidence and the results of the study, whereas volume two presents the appendices which contain the details of the evidence and the results. Volume one presents the text of the thesis in three parts. Part One presents an introduction to the theory in Chapter II, and the research objectives, methods, and limitations in Chapter III.

In Part Two the research worker was then concerned sequentially to consider each of the following which may affect managers' use of their budgetary information: organisation, standards, the environmental circumstances and problem areas, the budgetary planning system and the budgetary control

system for each of the first four factories. These were considered one by one in order to see whether there are any major obstacles in these factors which may prevent managers from using their budgets and information.

However, as the first four factories studied are all in the ownership of a holding company, Chapter IV considers the organisational implications and the process of scientific standards in these four factories together before considering each factory separately.

Chapter V presents the findings of the study in Factory 'A' in four sections. Section one presents the environments of the budgetary system. Section two presents the budgetary planning system and section three presents the budgetary control system. As a result of looking at the findings from a different angle through taking each manager as a case study, the factors which affect use were identified. Section four presents these findings. Thereafter, the same method is adopted for Factory 'B', 'C' and 'D' which are presented in Chapters VI, VII and VIII respectively.

The findings of these four factories were then collated, summarised and cross-checked in Factories 'E', 'F', 'G' and 'H'. Chapter IX presents the findings of the case studies and the result of cross-checking them in the other four factories.

Part Three of this thesis presents the findings and conclusions of the study. These are presented in Chapter X under the findings based on cross-checked opinions and facts and findings based on managers' opinions only, the implications of the findings on the theory of budgetary control and on the theories of management and suggestions for future research.

Before presenting the scope, evidence and results of this study, it may be advisable to present briefly the theory of budgetary control, and the controversy about the theory in recent literature and research reports. Chapter II provides such discussion.

CHAPTER II

AN INTRODUCTION TO BUDGETARY CONTROL

A Historical Background of Budgetary Control

The idea of budgetary control is very old.

> "Budgeting in the sense of forecasting and acting on forecast is a very old practice. Joseph, in Egypt, made a budget of corn supplies and planned Pharaoh's investment and consumption policy in the light of it". (1)

However, the business world of today owes its historical debt for the term budget to the old French language (bougette, a small bag) and to the British Parliament in which expression "opening the budget" evolved at the end of the eighteenth century to describe the Chancellor of the Exchequer's presentation of his financial plans to Parliament for adoption and control (he brought his papers to the House in a traditional leather bag; the bougette). (2)

> "The technical application of the word to the accounts of the Government in England can be traced back as far as 1733 and it has spread to most countries of the world. The younger Pitt is always regarded as the father of the budget, because during the Napoleonic Wars he attempted to ensure that Parliament should review simultaneously the total income and expenditure of the National Government". (3)

> "In Great Britain the practice of drawing up a Government budget each year is about 200 years old. In the United States, it dates back only some 30 years." (4)

Subsequently the increasing size and complexity of business organisations led to the adoption of budgetary control in industry and commerce.

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(1) A paper by D.Solomons, "The Historical Development of Costing - Studies in Costing", Edited by D.Solomons, London: Sweet & Maxwell Limited, 1952. p.45.

(2) J.Perrin, op. cit., p. 6, and Chamber's Encyclopedia, New Edition, Vol. II, p.646.

(3) Chamber's Encyclopedia, p.646.

(4) D. Solomons, op. cit., p. 45.

"Even in the humbler sphere of business, budgeting is of respectable antiquity. De Gazaux is the first writer to show an interest in accounting for the future as well as for the past, and in the 1825 edition of his book he devotes a chapter to budgeting. "Future conduct", he says, "is to be traced from an account of successes and failures of the past. Thus one can determine one's needs in the coming year and can compare them with the resources one will have. This statement of resources and needs is called a budget" (1) He then goes on to explain that it is desirable to foresee not only what demands on one's resources will be encountered but also exactly when these demands will arise.

"Hence the necessity to establish monthly budgets: elements of the general or annual budget". (2)

However,

"De Gazaux's budget is a combined business and family budget ---- it is of course not quite typical of business budgets as we now know them ---- The incorporation of budgets into the cost records for the purpose of controlling expenditure has developed early in the present century ---- from about 1912 onwards ---- we find a growing volume of criticism of retrospective costing; and the change of emphasis from the ascertainment of what it cost to make something to the control of what it costs to carry out an industrial process or function can be seen developing". (3)

Throughout the present century the idea of budgetary control has developed greatly. In recent years, it developed from the narrow and confined area of cost control to the broad and more constructive area of helping management plan and control the business' activities.

What is Budgetary Control?

Budgetary control is a technique or a tool of management, as such it is not an alternative or substitute to management. As Heiser (4) states:

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(1) Ibid, p. 45.

(2) Ibid, p.46.

(3) Ibid, p.47.

(4) Heiser, Budgeting Practice and Principles, Accountants Cost Handbook, Edited by Robert I.Dickey; the Ronald Press, 1960. pp. 20.8 and 20.9

"A budget is not designed to reduce the managerial function to a formula. It is a managerial tool".

Perhaps the most precise description of the technique is managerial planning and control through the budget. Thus, it is not the budget which plans or controls, it is the manager who plans and controls through experience, budgets or any other media, as he is inevitably and organisationally the one who takes the decisions.

"Budgets, comparative accounts and costs are not control, they are part of the means for control ---- I have found it convenient to think of control as a process in management - to say that control is a function of management ---- The controller's job is not to control, except in so far as his defined executive activities are concerned, so much as to provide the means for control, for use by others in so far as their defined executive activities are concerned ---- Control, the process in management can operate successfully only through an accepted organisation structure". (1)

"A control system, whatever form it may take, is a process in management ---- However, budgets do not serve as a system of control, they merely form a part of the device for control". (2)

Thus, budgetary control is a means of control and not a control in itself. Moreover, budgeting is a means to formulate approved plans whereas budgetary control is a means to control business operations to achieve these plans. As R.Sidebotham put it (3)

"Budgeting is the preparation of forward plans of industrial operations. Budgetary control is the direction of actual events to ensure that the budget is fulfilled".

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(1) J.Maddock, Costing, Budgetary Control and Management, Series of Monographs on Higher Management, No.22, Department of Industrial Administration, Manchester Municipal College of Technology, 1950, pp.7-9.

(2) Y.Adjepong-Boateng, Application of Budgetary Control in Industry; A Tool of Management. Unpublished M.Sc. Dissertation, Manchester University, 1965, p.7.

(3) R.Sidebotham, Accounting for Industrial Management, Oxford: Pergamon Press Ltd., 1964, p.153.

As defined by an International Conference on budgetary control held in Geneva [1]

"Budgeting is not merely control; it is not merely forecasting; it is an exact and rigorous analysis of the past and the probable and desired future experience with a view to substituting considered intention for opportunities in management".

Maddock [2] states :

"Budgets are an expression of the objects of a business, and budgetary control is the control of the operations of the business towards the achievement of the objects.

Edey [3] stresses :

"The budgets, and the standards that they incorporate, can be regarded as the economic expression of hypotheses or 'theories' concerning the future behaviour of the business ---- Budgets can be used to assist in the economic control of business through the process of what is sometimes called "budgetary control", that is the constant checking of the actual accounting results against the original budgets with the object of detecting to what extent errors have been made, controlling the work of different members of the organisation, and providing materials for further forecasts about the future".

R. Edwards [4] adds :

"Much of what is called budgetary control is inherent in every action which affects the future . Before entering into any business or other transaction, we consider its effects in the context of the evidence available. We are constantly choosing between alternatives and exercising our preferences, although no conscious effort may be required. Perhaps we could say that budgetary control is an attempt to force heads of departments to state coherently the guesses they are making with reference to the future of their business, and the data on which those guesses are based, and at the end of the period to compare in detail the guesses and the actual results achieved. Thus, the budget is a symposium of all our business plans and their expected results expressed in financial terms".

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(1) A paper by Ronald S.Edwards; The Approach to Budgetary Control, Studies in Costing, Edited by D.Solomons, 1952, p.366.

(2) J.Maddock, op.cit., p.12.

(3) Harold C.Edey, Business Budgets and Accounts, London, Hutchinson & Co., (publishers) Limited, 1964, p.19.

(4) Ronald S.Edwards, op.cit., p.365.

Moreover, he adds [1]:

> "It is notoriously difficult to give precise definition to much of the terminology of business. In this respect, budgetary control is no exception..... It is unfortunate, however, that many writers attempt to give a pseudo-scientific precision to their descriptions of the various types of control exercised over a business... "

Although it is difficult to define budgets and budgetary control, it is relatively easier to describe what the term denotes. The budget is an approved plan of action, based on certain assumptions related to the enterprise's objectives, to deal with a given future period.

As such, it is a plan of what may happen. Moreover, it is an approved plan, approved by all levels of management who are directly involved or responsible for its achievement, and as such it represents an intended programme of action. Thus, it necessitates a forecasting process and a choice between alternatives. The forecasting process involves a critical evaluation of the past and a look ahead to the future; to provide assumptions or hypotheses about what may happen whereas the choice process involves the process of choosing which assumptions, plans and course of action are to be adopted.

All this by definition necessitates the active participation of different levels of management who are directly responsible for achieving the budget. It is not an accountant's job to formulate plans, approve of it, provide assumptions, choose alternatives, and plan courses of action. Indeed, this is all part of the management function and as such are decisions which ought to be taken or approved by the manager himself and not the accountant.

The accountant can help in providing past information, in explaining the financial implications of actual results, and in coordinating all the forecasts together to calculate the master and balance sheet forecasts.

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(1) Ibid, p.366.

The budget is a translation of the objectives of the enterprise. As such it is a plan which integrates the objectives and provides a programme of action to achieve them.

Finally, unlike the account, the budget deals with the future. Indeed, Edey (1) put it :

> "A budget is a statement about what is expected or planned to happen; an account is a statement about what has happened. A budget may therefore be regarded as an estimate or forecast of an account..."

Budgets may be classified as operational and capital budgets. Operational budgets are those which are concerned with the day to day operations of the business, such as sales, production, material, labour and overhead budgets.

Thus they are budgets of revenue, cost and expense relative to current operations and as such are budgeted items of the revenue account.

Capital or financial budgets, on the other hand, are those concerned with capital expenditure or budget items of the balance sheet, such as the cash, fixed and current assets budgets.

Budgets may also be classified into programme and responsibility budgets.

> "The programme budget sets forth plans in terms of the major programmes the company plans to undertake... The responsibility budget sets forth plans in terms of the persons responsible for carrying them out". (2)

Budgetary control, on the other hand, is the process of management control through the budget and the periodic information. As such it is management who controls and not the budget. Therefore, there is no such thing as budgetary control if it is to be taken literally, on the other hand, if the term is to be taken

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(1) Harold C.Edey, op.cit., p.9.

(2) Robert N.Anthony, Management Accounting, Text and Cases. Homewood, Illinois; Richard D.Irwin, Inc., 1964, p.393.

to mean the process of managerial control through the budget, then and only then there is such a thing called budgetary control.

It is only within this context that budgetary control is a means of managerial control. As such it is not a control but a means of control provided to the manager who, if chooses, may use it for control or indeed may not, as he may use his experience or any other media as an alternative for control. The difference between using budgetary control or not is simply the difference between using the scientific method or experience.

All the scientific method does is to utilise experience in a systematic way rather than the haphazard way of experience or past performance. As such, although it is in a sense an alternative to experience, it does not disregard it altogether, but utilises it in a systematic and rigorous way.

Budgetary control as a process of management control involves two stages of planning and control. As such, it involves the formulation of approved plans; the formulation of a budget as a first step in control.

> "Budgetary control begins with the formalisation into a written scheme of all projects and ideas of the executive team. Once the budget has been determined, its achievement becomes the purpose of management, whilst discovering, analysing and reporting the variance of actual events from the budget is the job of the accountant". (1)

It presupposes a clear organisation structure which defines precisely the functions and responsibilities of each manager in order to enable pinpointing responsibilities for deviations from the approved plan.

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(1) R. Sidebotham, op.cit., p.152.

Moreover, it assumes a clear communication and understanding of the implications of the budgets by the managers concerned. This is an accountant's responsibility. As such he is not working as a manager, but in his capacity as an interpreter of the implications of the budget.

Logically, if a manager is to be held responsible to achieve a certain target, plan, or budget, he must understand the implications of such budget in his own language. The manager concerned must understand what he is to do to achieve the budget; the effort involved in achieving it.

Moreover, he must accept the budget as practical, reasonably achievable. For, if he does not, it is hardly logical that he would try to achieve it or that he would be responsible for deviations.

Also, the fact that the budget is a plan or an approved forecast based on assumptions which stem from the objectives of the enterprise and is related to the future means that the budget is at best an estimate and as such carries a certain amount of inaccuracy.

These inaccuracies are inherited in the forecasting process, for whatever technique is used there are bound to be inaccuracies as nobody knows the future and businessmen can only assume that it would take one pattern or another. Even the more sophisticated techniques only limit the extent of such inaccuracies but do not prevent them altogether.

This necessitates that the budget should not be taken as a rigid model, but rather instituting a degree of flexibility through tolerance bands or limits. These help in two ways; first by taking care of inaccuracies in budget, and second as an objective criteria to measure deviations and to see whether they are significant in extent.

The next step in the control process is that managers use their budgets; in the sense that they try to achieve it and do not ignore it. Moreover, they should try to achieve the object integrated in the budget rather than the details of the budget in a rigid way.

For if the budget as a plan does not achieve the original objectives integrated in it, there is no use in achieving this plan literally. The logical improvement would be to adjust the plan to suit the objectives rather than to try to achieve the plan even so it does not achieve the objectives. Moreover, the assumptions or hypotheses of the budget may prove to be unrealistic, so achieving the original budget would also be unrealistic.

Therefore, the logical development here would be to adjust the plan to take care of the change in assumptions. Thus, control necessitates a degree of flexibility and continuous adjustments .

At periodic intervals, reports of actual performance as compared with the budget should be provided to the managers concerned. This apparently is an accountant's responsibility. Moreover, the accountant must make sure that the message he has communicated is the same one which has been received by the manager at the other end. This again necessitates the interpretation of the implications of the information to the managers concerned in their language; another responsibility of the accountant.

It is then the responsibility of the manager to use the information in order to evaluate the efforts he has exerted to achieve his budget. Thus, this stage of use of the information is an evaluation of the first stage of using the budget; trying to achieve it.

However, a distinction must be drawn here between managers and senior managers. The manager in this thesis is the lowest level of management who is directly involved in the budgetary process; i.e. responsible for an area, section or department, whereas a senior manager is the manager who is directly involved in the budgetary process but is responsible for a group of sections, areas, or departments. Thus, the person responsible for the production department is a manager whereas the person responsible for all the production departments is a senior manager.

The manager could only use his budget to try to achieve it, whereas he uses his information to evaluate the effect of the efforts exerted in the first stage of use; trying to achieve his budget.

A senior manager, on the other hand, could mainly use his information rather than his budget. He could use the information in order to identify significant deviations, pinpoint the responsible manager and follow him up to help him achieve better performance. A senior manager cannot literally use the budget, he can only help, guide and direct his managers to achieve their budget.

Managers' and senior managers' use of the budget and the information should result in a corrective action which does not merely achieve the budget but rather the objectives integrated in it. Indeed, a corrective action may be the adjustment or change of the original budget in order to achieve the original objectives. Furthermore, the system in each factory must suit the circumstances and problems of the industry; the factory and the managers who run it.

All these steps and stages are part of the process of budgetary control or rather managerial control through the budget. Presenting budgetary control in this way, one appreciates that it is very difficult to provide a precise scientific definition , rather a broad description has been attempted.

Relation of Budgetary Control to Cost Control

Cost control is one part or area of budgetary control, for budgetary control, as mentioned earlier, helps management to plan, coordinate and control the business activities whereas cost control helps management to control cost, only one area of business activities.

> "---- there is no fundamental difference between cost control and budgetary control. Such difference as there is comes from variations in the application of the same principles of measurement and comparison. Cost control expresses these elements of cost in relation to units of production or service or process; budgetary control expresses them in relation to expense headings arranged to correspond with authority and responsibility in an accepted structure of organisation. Cost Control supports budgetary control, if you like it is the detail of budgetary control". (1)

Moreover, it is possible to have a budgetary control without having cost control, or to have cost control without budgetary control.

> "There is a tendency for some people to regard budgetary control as a form of cost control. This is not at all correct, they are two different exercises." (2)

Thus, cost control is complementary to budgetary control, in that it is a means to control cost, one of the many areas that may be controlled through budgetary control. Unlike J.Maddock's (3) differentiation, budgetary control does not deal only with expenses, rather with all other activities of the business; sales, production, material, labour, overheads, capital expenditure, and so on.

Thus, to conclude, cost control is related to budgetary control in the sense that it is only one of the areas which could be controlled through budgetary control.

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(1) J.Maddock, op.cit., p.89.

(2) Y.Adjepong-Boateng, op.cit., p.16.

(3) J.Maddock. op.cit., p. 89.

Relation of Budgetary Control to Standard Costing.

Standard costing involves the comparison of actual costs for each department, process, operation, product, or service with certain standard theoretical costs. As such standard costing represents a development over actual costs for control.

> "Actual costs suffered from two important drawbacks; namely that being prepared sometime after the event they did not supply the management with information for day to day control and they did not provide standard for measurement ... Cost accounting which does not embody reliable standards of measurement cannot provide a complete view of the information which ought to be taken into account in judging efficiency and in determining policy". (1)

On the face of it, this represents a confusion between budgetary control and standard costing, since both include certain basic principles of establishing standards, measuring deviations, and taking corrective action.

However, the standards used for budgetary control differ from standard costs in several respects. First, they embrace revenue as well as costs and expenses. Secondly, they relate primarily to the responsibilities of individuals, whereas standard costs usually relate to operations, processes, products, or services. Even when the standards coincide the emphasis in budgetary control is on the manager and his responsibility to deviations, not upon inanimate objects or services as in standard costing. Finally, the standards set for budgetary control are usually more flexible than standard costs.

> "Like tailor-made suits, the budgetary standards are cut to fit the particular company, the particular items, and the particular conditions of operations". (2)

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(1) Standard Costing. The Institute of Chartered Accountants. The Taxation and Research Committee, London, 1956, p.5.

(2) Robert P. Eastwood; Sales Control by Quantitative Methods. Published Ph.D. thesis, Columbia University Press, 1940.

In sum:

> "The application of the principles involved to the operation of the business as a whole, or of its departments, is termed budgetary control, whereas the application of these principles to the detailed production operations and products is termed standard costing". (1)

Standard costing and budgetary control are inter-related in the sense that the application of standard costing enhances the value of the standards of budgetary control. Thus the application of standard costing to budgetary control is a difference of degree and extent rather than of kind.

> "Budgetary control can be operated in industries to which it would be difficult, or at least not desirable, to apply standard costing, but generally it is found that the value of budgetary control is enhanced if used with standard costing". (2)

Thus budgetary control and standard costing are related in that the application of standard costing furthers the value of budgetary control in practice. As such it is a difference of degree and not of kind.

Importance of Budgetary Control to Industry.

A business enterprise, whatever its size, must plan, control and coordinate its activities to achieve the objectives of the enterprise. Budgetary control is claimed to help management in all three aspects.

> "Every undertaking whether it is business, or government, or commanding an army, does involve these two processes of forecasting and planning as an essential preliminary to effective action. If decisions are to bear any relation to reality, they must be based on some forecast of what the future holds. If action in accordance with the forecast is to be methodical and orderly, there must be a plan." (3)

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(1) Institute of Cost and Works Accountants, An Introduction to Budgetary Control, Standard Costing, Material Control, and Production Control, London, 1964, p.7.

(2) Ibid. p.7.

(3) L.Urwick, The Elements of Administration, London: Sir Isaac Pitman & Sons, 1951, p.34.

The application of budgetary control to an industrial undertaking can help its management in three main aspects; planning, control and coordination. This has been emphasised almost by all recent writers on the theory.

W.D. Knight and E.H. Weinwurm [1] write :

"Planning and control, the essential functions of management, are also the essential parts of the budgetary process.. Budgeting literature commonly contends that the budget is the coordinated plan ultimately required... This is only because the budget is based upon, and fully in harmony with, all of the schedules, quotas, standards, contracts, and policy directives with which any major division is concerned... "

Budgeting is an instrument designed to aid management in planning, coordinating and controlling operations. According to Heiser [2] the budget of the company serves three purposes :

"First it provides top management with a summarised picture of the results to be expected from the proposed plan of operations. This aids the management in determining whether the plan is satisfactory. Second, following approval, it serves as a guide to executives and departmental heads responsible for individual segments of the operations. Third, it serves to measure performance, since budget deviations reflect either the organisation's failure to achieve the planned standards of performance or its ability to better them".

Moreover, Dickey [3] adds :

"Coordination of efforts requires communication of objectives and instructions, and a budget is one very important means of communication... The great challenge to the modern executive is the control of day to day operations. Many companies have found that this challenge cannot be successfully met by informal methods which emphasise the experience in making correct decisions based on incomplete information ".

R. Sidebotham [4] writes:

"Whether budgetary control is in use in a factory or not, executives must make plans for production and sales. Planning, however informally it may be done, is an inescapable job of management, and at higher levels it is the most important job".

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(1) W.D.Knight and E.H.Weinwurm, "Managerial Budgeting", New York; The MacMillan Co. published under the auspices of Budget Executives Institute. 1964, p.6-10.

(2) Accountants Cost Handbook, p.20.10.

(3) Ibid, p.20.10

(4) R.Sidebotham, op.cit, pp.152-153.

Furthermore,

> "it forces each executive to think ahead ... It compels each executive to look at the future as a matter of routine ... It compels them to think ahead together". (1)

However, coordination is of utmost importance in order to get executives together and have a compromise of all the plans put by different executives. It is also important in that a factory is not the sum of its different departments. This has been stressed by Harold C.Edey (2)

> "... the process of management is to a considerable degree the continuing study of different sections of the business, one by one, combined with overall studies of groups of sections and of the whole business. Sectional studies alone will not be conclusive for they will not take account of happenings elsewhere in the business. Overall studies alone will provide no conclusive evidence about which part of the business is responsible for what is happening. Both kinds of study are needed".

Moreover, R.Anthony (3) stresses the function of the budget as a communication device:

> "Management plans will not be carried out (except by accident) unless the organisation understands what the plans are. Adequate understanding includes not only a knowledge of programme and objectives but also a knowledge about policies and restirctions to which the organisation is expected to adhere".

Thus, many writers stress that budgetary control as one of the techniques of scientific management helps in the three functions of planning, coordination and control. Moreover, it has been suggested (4) that budgetary control furnishes a means whereby authority may be broadly delegated without loss of control at the higher management levels.

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(1) Ibid., p.152 and 153.

(2) Harold C.Edey, op.cit., p.18.

(3) Robert N.Anthony, op.cit., pp.399-400.

(4) Harold Knootz and Cyril O'Dohnell, Principles of Management, An Analysis of Managerial Functions, New York; McGraw-Hill, 1955, p.555

As mentioned before, budgetary control presupposes a clear cut organisation structure which defines precisely the functions, authority and responsibilities of each manager in order to enable pinpointing responsibilities for deviations from the budget. Budgetary control helps in acting

> "... as an instrument of management policy whereby the extension of the scheme to lower levels of management enables top management to decentralise responsibility and centralise control". (1)

However, it must be emphasised that unless the manager uses his budget and periodic information it is difficult to foresee or even claim any advantage of budgetary control. Thus, unless management from top to bottom back and use the system, no such benefit in any of the fields of planning, control and coordination can be drawn from budgetary control. This then constitutes the main condition of the theory; without which the theory is virtually useless in practice.

The Controversy about the Theory.

It seems that the theory is not universally accepted in practice since the literature reveals that accountants on the one hand think very highly of the theory whereas management researchers do not share the same enthusiasm.

Moreover, management researchers claim that the application of the theory is not applied sufficiently widely in the British industry as compared with the American industry and that British management is not as aware of the need for budgeting as American management.

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(1) R.Sidebotham, op.cit. p.153

Furthermore, the literature seems to reveal a distinction between the preparation stage of the budget and its use by managers; another but yet a related controversy between managers and accountants. However, although manager's use of the budget is an important factor behind the effectiveness of budgetary control, the literature seems to concentrate on budgets and forms rather than on managers' use of the budget.

As mentioned before, the whole cycle of budgetary control is completed only when managers use their budgets and information. The object of budgetary control, and indeed all management accounting information, is achieved only when they are used by managers. Moreover, the effectiveness of the system and the information depends on managers' use of the information. Thus use of information becomes management's responsibility whereas reporting them is an accountant's responsibility.

This has been stressed in the Anglo-American Council on Productivity's Report (1) which defines management accountancy as :

> "the presentation of accounting information in such a way as to assist management in the creation of policy and in day to day operations of an undertaking ... It is not the production of these pictures that is a function of management but the use of them".

And as R.Witty (2) pointed out in his preface to Design of Accounts :

> "The accountant and the Industrialist use accounts in very different ways (often to their mutual astonishment) and it is very important that there should be discussions between them as to what factors are significant and as to how accounts should be prepared so as to be of the utmost practical value".

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(1) Anglo American Council on Productivity. Management Accounting, London, 1950.

(2) R.A.Witty, Design of Accounts, issued by the Incorporated Accountants Research Committee, London, 1943.

In 1953, Graham Hutton [1], commenting on the findings of the sixty six Productivity Teams who visited the U.S.A. stated that :

> "British management on the average is not as cost conscious, not as productivity conscious, and not as aware of the need for measurement, budgeting and other 'control devices' as American management".

Commenting on this, a team of research workers [2] said :

> "It is not that the appropriate techniques are unknown in this country, they are known but are neither appreciated nor applied sufficienty widely".

And the Productivity Team concluded [3]

> "To achieve and maintain its efficiency American management makes far-reaching use of the techniques of accounting and costing... The effectiveness of American management and accounting rests not on technical superiority but on their thorough application of techniques which are as well known in Britain as they are in the United States".

Rose in his book [4] challenged the validity of budgetary control as a framework for presenting the movement of affairs in a company and said it to be definitely obsolete.

However, T.Rose [5] adds :

> "Since the publication of the first text books on budgetary and higher control - in 1922 and 1934 respectively - interest in the practical use of figures emerging from the books of accounts has been steadily growing".

On the other hand, almost all accountants claim that budgetary control helps management plan and control the business activities. To mention but a few :

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(1) Graham Hutton, We Too Can Prosper, London; Allen & Unwin, 1953. p.119.

(2) I.McGivering and others, Management in Britain, A publication of the Department of Social Science in the University of Liverpool, University Press, 1960, p.62.

(3) Productivity Report, op.cit. pp.6-14.

(4) Rose, Higher Control in Management, London, Sir Isaac Pitman & Sons, Ltd. 1963, p. 43.

(5) Rose, Top Management Accounting, London, Sir Isaac Pitman & Sons, Ltd. 1958, p. 4.

A.Hegazy in his thesis [1] concluded :

"The use of the technique provides an effective tool for advancing the principles of administration, i.e. planning, control and coordination. By the use of the exception principle control is brought to its maximum, through the use of budgetary standards in a programme of action coordination is affected".

H.C. Edey [2] stated :

"Budgets can be used to assist in the economic control of business through the process of what is sometimes called 'budgetary control'. It improves control over subordinates, brings so far as possible the activities of the different parts of the business into a common consistent system, and provides the operational plan of the business".

John Perrin in his thesis [3] wrote :

"A number of writers, both British and American, have suggested that the primary function of budgeting relate to three main fields of management activity - planning, control and coordination.

... It may be well to emphasise that these functions are not fulfilled simply by the drafting and distribution of budgets and budget reports. The functions of budgeting are not fulfilled until managers, individually or collectively, have studied the information provided by budgets as fully as practicable in every way that will maximise effective planning, control, and coordination of activities within the enterprise... Moreover, it also may make possible a greater delegation of authority and the consequent enlargement of the total management effort available".

This last point is emphasised by Harold Knootz and Cyril O'Donnell [4] who noted that budgetary planning furnishes a means whereby authority may be broadly delegated without loss of control at the higher management levels.

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(1) A.Hegazy, New Developments in Costing Techniques as an Aid to Managerial Control; Unpublished Ph.D. Thesis, Birmingham University, 1950, p.175.

(2) Harold C.Edey, op.cit., pp.19-20.

(3) John Perrin, op.cit. pp.15-16.

(4) Harold Knootz and Cyril O'Donnell, Principles of Management: An Analysis of Managerial Functions. New York, McGraw Hill, 1955, p.55.

J.Maddock [1] noted the difference between a business who use budgetary control and the other who does not :

> "as the difference between starting a journey with a clear idea of where you want to go, and how you want to get there, and starting with nothing more than a vague idea that the general direction is South. Motorists in a competition must keep a schedule of their progress in relation to known controls, and aim to meet the requirements of those controls. This is budgetary control. If they do not concern themselves with how far they have travelled in relation to the distance they have to travel, and argue a change of direction at each cross-roads, they will neither travel far nor earn an award".

Moreover he adds :

> "... it is essential to distinguish between (a) the preparation of budgetary and cost control data and (b) the use of that data".

R.Sidebotham [2] noted the following advantages of budgetary control :

> "It does not only ensure that executives think ahead. It compels them to think ahead for a common end. A detailed budget constitutes a plan of action for every member of the firm ---- and locates responsibility for achievement".

Welsch [3] writes :

> "Dynamic budgeting is the principal tool of planning and control offered to management by the accountant function ... its full potential frequently is hindered by the gap between the mechanics of budgeting and their practical application to the problems of modern management ... it must be kept in mind that budgets are an aid to managerial judgement, not a substitute for it. "

As Heiser [4] puts it :

> "A budget is not designed to reduce the managerial function to a formula. It is a managerial tool".

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(1) J.Maddock, op.cit. p.7.

(2) R.Sidebotham, op.cit., p.153.

(3) Accountants Cost Handbook, op.cit. p.20.8.

(4) Ibid, p.20.9

Y.Adjepong Boateng [1] in his thesis writes :

"However, it is only a tool and its value must not be regarded as inherent in the system itself, its value arises from its intelligent use."

Finally, R.Anthony [2] writes :

"By definition there can be no conflict between a valid theory and the best practice. If a theory does not work out in practice, either the theory is invalid or practical people are making mistakes".

Thus, the literature shows a controversy over budgetary control, for industrialists and management researchers claim that although the appropriate techniques are known, they are neither appreciated nor applied sufficiently widely with one even claiming that budgetary control is obsolete. Moreover, it is claimed that American management is more effective than British management, as the same principles which are well known in the two countries are practiced much more universally and vigorously in America, and that American management makes far reaching use of the techniques of accounting and costing.

On the other hand accountants claim that the theory can help management greatly in the fields of planning, control and coordination.

Furthermore, the literature also reveals a difference between the preparation function of the budget and its use, another but yet a related controversy between managers and accountants with most writers on the subject writing on the mechanics of preparation rather than the important stage of use of budgets.

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(1) Application of Budgetary Control in Industry : A Tool of Management. Unpublished M.Sc. thesis, Manchester University, p. 12.

(2) Robert N.Anthony, op.cit. p.595.

Although the first of these reports was published in 1943 and although the most logical approach seems to investigate the validity and use of budgetary control information from management's point of view rather than accountant's, up to now no such research has been carried out as far as the research worker is aware of.

A Survey of the Research Carried Out.

In order to prove this, a survey of the research carried out on budgetary control in the British industry showed that only the following significant researches have been carried out.

1. Budgetary Control applied to the worsted industry, unpublished M.Sc, (Econ.) (Ext.) thesis by H.Senior, University of London, 1940.

   The thesis presents a discussion on the different budgets as applied to the worsted industry. In his introduction Senior writes :

   "the chapters that follow indicate practical research into the possibilities and advantages of such budgetary control when applied to worsted manufacturing".

2. New Developments in Costing Techniques as an Aid to Managerial Control, unpublished Ph.D. Thesis, by A.Hegazy, Birmingham University, 1950.

   This is a conceptual and a historical survey of the general theories of costing, including budgetary control as a new development on the old techniques of historical costing. In his thesis preface, he writes :

"It is hoped to emphasise the fundamentals of the new developments in costing techniques which must be understood before more particular aspects can be treated. Throughout an effort has been made to illustrate basic concepts and postulates followed by an analysis of account-keeping methods. Policies and principles of successful management form the background into which is fitted the accounting mechanism, or rather, the tools and devices to carry them into effect, without which no management, however highly concerned, can be successful."

3. Budgetary Planning and Control in the British Industry, unpublished Ph.D. thesis by J.R.Perrin, London School of Economics, 1958.

This is a field inquiry to study the use of operating budgets in thirty British companies.

"It is a study of important policies, procedures and problems of budgetary practice in industry (including service organisations and distributors, as well as producers)".

The conclusions of the study were based on interviews with senior accountants at each of the thirty companies, supplemented by a questionnaire. Thirty companies were chosen, twenty two with budgeting systems and eight without. It is an extensive rather than an intensive study with a wide object, to prove the extent to which operating budgets are used in the British industry. It is based entirely on the opinions of the accountants of the companies selected. Thus, no managers were interviewed at all.

4. Application of Budgetary Control in Industry: A Tool of Management, unpublished M.Sc. Dissertation by Y.Adjepong Boateng, Manchester University, 1965.

This is a study which presents budgetary control as a tool of management and stresses that its effectiveness depends upon its careful and intelligent application.

In his summary he writes :

"In conclusion, the author discusses some of the factors which affect the application of budgetary control as a tool of management, in particular the strength and weaknesses of the system".

Furthermore,[1] a survey of the research on budgetary control carried out in U.S.A. showed that the most relevant are the following :

1. An Inquiry into a Theory of Budgeting, unpublished Ph.D. dissertation by G.B.Davis, University of Stanford, 1959.

   The dissertation presents a conseptual description of the theory of budgetary control.

   "It is written primarily in terms of business budgeting but the basic similarities between different budgeting systems make many of the concepts equally applicable to Government and family budgeting." (2)

2. An Inquiry into Budgetary Planning and Control Techniques in the Small Business Environment, with emphasis on Small Manufacturing Companies, unpublished Ph.D. dissertation, by R.W.Wright, University of Iowa, 1963.

   This is a field inquiry to study the

   "differences between large and small organisations which can affect the planning and controlling techniques and the effect of these differences on budgeting practices".

   The field study involved

   "interviews with executives in thirty small manufacturing organisations and eight consultants employed in management services to Certified Public Accountants firms, to discover what techniques of budgeting they advocate". (3)

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(1) The survey was carried out for the period 1951-1965.

(2) Dissertations Abstracts, University Microfilms Inc., Vol. XX, No.4. 1959. p.1211.

(3) Ibid, Vol.XXIII, No.8, February 1963, p.2744.

3. <u>The Budget as an Instrument of Managerial Planning and Control</u>, unpublished Ph.D.Dissertation, University of California, Los Angeles, 1964.

"The main purpose of the study was to find out how the budget works in practice, to restate budget theory as reflected in current literature and to compare and evaluate budget practice and theory with a view to identify strengths and weaknesses in both, to define the correct role of the budget, to point out gaps in the literature and submit recommendations leading to better budget use".

The research work included two major projects :

"An empirical study of the budget practice of a large-scale firm and a study of the literature". (1)

However, this study did not touch managers' use of the budget.

4. <u>Selected Behavioural Variables Associated with Participation in Budget Development</u>: Unpublished Ph.D. dissertation by J.J. Cotter, University of Wisconsin, 1964.

"The research was designed to study the effects of an instance of participative management, budget preparation, upon the job attitudes of operating foremen.

A management practices questionnaire was completed by one hundred and seventy-nine foremen and forty supervisors from fourteen firms.

Foremen were arranged along an authoritarian-equalitarian continuum by the use of an arbitrary test (as measured by the California F-Test)". (2)

Thus, this is mainly a study of the effect of participation on foremen's attitudes towards their jobs. As such, it does not touch managers' use of budgetary information.

5. <u>Cost Standards in Operating Budget Preparation and Administration</u>, unpublished Ph.D. dissertation by M.M.Salim, University of Wisconsin, 1965.

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(1) Ibid, Vol. XXV. No.3, pp.1626-1627, September, 1964.

(2) Ibid, vol. XXV, No.6, p. 3303, December, 1964.

The study is concerned with the establishment of operating budget and particularly budget costs in a scientific manner. The part that cost standards play in the development and administration of the operating budget is important enough to deserve careful consideration.

"The investigation was carried out by gathering information through mailed questionnaires to a selected group of manufacturing companies and a detailed case study".

Thus, the study did not touch on managers' use of budgetary information.

The survey of the research carried out in Britain and U.S.A. proved the claim that no such study to prove the value and validity of budgetary control theory in practice from management point of view has been carried out. In America, however, a research by Professor Argyris (Chris.) is published in a book called "The Impact of Budgets on People" in 1952. As mentioned under the object of the study

"The study is the first of its kind attempted and is primarily exploratory.. Its purpose is to examine problems and to raise questions concerning the possible human relations effects budgets have upon supervisors".

The study was conducted in four factories and its results are very interesting. However, the stress is on human relations and the psychological aspects of the problem.

Case Studies have also been conducted in U.S.A., the most significant are :

1. A Case Study of Management Planning and Control at General Electric Company, 1956.

2. Management Planning and Control; The Heinz Approach, 1957.

Both are published by the Controllers Institute Research Foundation.

The two cases are of wide scope as they touch all aspects of managerial planning and control.

Moreover, W.Knight and E.Weinwurm wrote a book on managerial budgeting, published under the auspices of the Budget Executives Institute. The book approaches the subject from management point of view, in theory.

Also, the Productivity Council has published a Report on Management Accounting which describes the practice in the American industry. The report has touched on budgetary control generally.

Rose, also, wrote a book on higher control in management with the object of describing the theory of higher control as an alternative to budgetary control in presenting the movements of affairs in a company.

All these studies, however, did not touch the validity, value and use of budgets from management point of view. In order to fill this gap, the present research was suggested.

However, the original object of this research was to attempt to prove the validity of the budgetary control theory in practice; to evaluate the factors which make it work and the other factors which hinder its smooth operation. The study, however, was initially intended to stress management's point of view rather than the accountants'.

To prove this the first step taken was to investigate in a group of factories whether budgetary control works in practice or not, if so to what extent, and if not why not?

It was soon found out that the theory could be working in one part of the organisation and not working in another part of the same organisation. It was discovered that one of the key factors behind the effectiveness of budgetary control theory

in practice is the manager himself as ultimately he is the one who takes the decisions, and if he uses his budget, the system would at least be partly effective, but if he does not the system would never be effective, controlwise.

As a result of this the object of the research developed from the general and wide object of proving the validity of the theory in practice to the more defined and special object of testing whether managers use their budgets and periodic information, if so to what extent, and why. If not, why not?

The two objectives, however, are related, for if the reasons behind managers' use or otherwise are discovered, considered and implemented, this would advance the effectiveness of application of budgetary control theory, and would narrow the gap between the theory and the practice.

CHAPTER III

OBJECTIVES AND SCOPE OF THE STUDY

The object of the study stems from the theory of budgetary control (1) since it attempts to find out the factors which affect the main condition of the theory; to discover the reasons behind managers' use or otherwise of their budgetary information.

In order to prove this, the study must answer the following questions :

(1) Whether managers use their budgetary information or not?

(a) If managers use their budgetary information, then :

(i) what is the extent of such use in terms of action taken and which budgets are used?

(ii) What are the factors or reasons behind managers' use of the information? and

(iii) What are the relationships between these factors and use of budgetary information?

(b) On the other hand, if managers do not use their budgetary information, then:

(i) What are the reasons or factors behind managers' non-use of the budgetary information? and

(ii) What are the relationships between these factors and non-use.

As such, the object of the study stems from the theory as a control model and is concerned with managers who are provided with budgetary information and are supposed to use them as a basis for control.

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(1) The theory as a control model is defined on p. 2.

Research Methods

The study must be empirical. This stems from its object. As such it may be conducted either in Government, public enterprise, private sector of industry or commercial undertakings. As each of these sectors of the economy has its own set of problems, it was decided to concentrate on the industrial private sector where the conditions are most significant and the potential is the greatest.

Furthermore, as the study is concerned with managers, people who run the organisation rather than the organisation itself, it follows that a typical industrial organisation with a reasonably developed budgeting system which provides the research facilities would be acceptable for the purpose of the study. These conditions then provided the minimum requirements in the organisations studied.

Moreover, as the object of the study is original and intensive rather than extensive, it follows that the approach adopted to achieve it must enable the research worker to study managers and their system of budgeting in depth; the most useful approach here is the case study. This was decided upon as the most thorough and precise method to achieve the object of this study.

Other alternatives (1) such as the mailed questionnaire or interviews would not have allowed the research worker to study anything in depth and as such would not achieve the object of the study.

The disadvantages of the mailed questionnaire in this case were numerous; to start with the research worker would have lost the personal touch, which has proved to be of value as the research is concerned with managers; people as well as forms. Moreover, there is no guarantee that managers and not accountants who would actually fill the questionnaire. Some questions may not be answered and only a minimum check on the validity of the answers given could be implemented through the integration of control questions. The main advantage of such a method however would be

(1) For a discussion of the alternative methods of research see Rummell J.Francis, and Welsey C.Ballaine, Research Methodology in Business, New York; Harper & Row; 1963, and J.Perrin, op.cit., Chapter II

having a large number of answers in a relatively short time.

However, the mailed questionnaire alone could not have achieved the object of the study since there is no theoretical model for use. Therefore, questions would tend to be general, vague and presumtuous rather than factual and pinpointing, and this would not have allowed the research worker to find out the factors which establish, support or hinder use. Moreover, "a questionnaire distributed without endorsement of a respected professional, managerial, or governmental organisation would yield but a small percentage of responses".(1) Thus the mailed questionnaire alone could not have achieved the object of the study.

Interviews alone without the case studies, although better than the mailed questionnaire, would result in only a part of the story and as such would not achieve the object of a study. It would be exactly as if the budgetary control system has been studied in a vacuum without considering the environments in which the system is operating and as such would deprive the study of its value. Moreover, it would not have allowed the research worker to study documents in detail, and to establish personal contacts before the interview, and as such would impair the quality and depth of the study, since it would not enable the research worker to live with the real situation for an extended period of time, and would only allow a minimum cross-checking of managers' answers. Thus, the interview alone could not have achieved the object of the study in the same depth.

Weighing the case study approach against the mailed questionnaire or the interview, the choice becomes either a greater number of doubtful answers or a smaller number of factual ones. As a result of comparing the outcome of the different methods with the object of the research, the case study method became the only appropriate choice.

(1) J.Perrin, op.cit., Chapter II.

The question then became what criterion was used to select a number of different factories which would cooperate in the study. It was decided that the factories chosen should satisfy certain conditions. First, one of the most important factors is the willingness of the factories management to provide the research worker with the case study facilities without interfering with his conclusions.

Second, the factories selected must have a reasonably developed budgetary control system, e.g. the accounting theory at the very least must have already been developed. Third, the factories chosen must be big enough in size to warrant the installation of a budgetary control system. This means on the one hand that the factories need not be too big in order not to complicate the study and on the other hand they need not be too small to render the installation of a budgetary control system irrelevant. Thus, the most suited size to this type of study is the medium-sized factory which would need a budgetary control system and enable the research worker to study the whole process in a reasonable length of time.

Fourth, the factories chosen must be in a competitive environment so that this would further the need for an effective control system.

As a result of preliminary enquiries, the research worker was fortunately able to find such a group of factories. The factories are named 'A', 'B', 'C' and 'D', for the purpose of the study. They are situated in different parts of the United Kingdom; in the South and North of England and Wales. The factories chosen are engaged in different technologies, but all are associated with the paper industry. This facilitated the background study a great deal and resulted in a less number of factors to isolate than otherwise would be the case. Moreover, this industry, apart from being competitive, is expanding, a favourable environment for

the development of budgetary control since prices and cost, which are mostly under managers' control, matter a great deal.

Moreover, the four factories are in the ownership of a holding company which is typical of the British industrial organisational unit, since it is a public company with a substantial family interest moving from the traditional climate of family business to the modern and dynamic climate of professional management.

However, the relationship between the group and the factories is only that of a holding-subsidiary relationship. Thus, the four factories are completely different since they belong to different industries, and have different products, sizes, budgetary systems and management. In fact, the group follows a decentralisation pattern with its geographical, product, and managerial aspects.

Furthermore, the group has a decentralised accounting function which is under the direction of highly qualified accountants. As a result of this, it has been found that the theory of budgetary control is well understood and serious efforts were exerted in its application. Thus, the first group of factories studied is a typical group with a medium size, with factories belonging to different branches of the same industry and that the accounting theory is well understood and developed. As such they corresponded to the conditions of the study.

The question then became, how the object of the study was achieved in each factory. This necessitated three steps. Firstly, to establish whether each manager uses his budgetary information or not. Secondly, to identify the factors behind managers' use or otherwise of the budgetary information, and thirdly to relate these factors to use or non-use.

The extent of use of budgetary information was established[1] as follows:

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(1) For a detailed discussion of the methodology used and a detailed illustration, see Appendix 'D', Volume II, p.129.

(a) Through a study of departmental figures to establish whether the deviations in the department's performance are in a state of control; deviations being reasonable in extent and random in movement.

(b) Through interviewing each manager; in order to obtain information about the facts of the control system and to measure the manager's attitude to the system.

(c) Through horizontal and vertical cross-checking of the information obtained from each manager, with his senior manager and the accountant. Also the facts of the control system have been cross-checked in interviews with other managers.

(d) Through personal observations.

This method although was much more time consuming than other alternatives, was found to be the only reliable method to establish managers' use of their budgetary information.

As a result of applying this method to sixty managers in the first four factories, it has been found that only twenty-eight managers use their budgetary information. Moreover, only six managers use their budgetary information in accordance with the theory and the other twenty-two use the information in a limited sense. Thus, a low percentage of use has been established.

The next step in the analysis was to identify the factors (1) which are responsible for this low percentage of use. The approach in these four factories followed the logical sequence of the requirements of the theory of budgetary control.

First, the theory requires a clear cut organisation in which the authority and responsibility of managers are well defined. The first step in the empirical analysis was to study the

(1) For a detailed discussion of the methodology used, and a detailed illustration, see Appendix 'D', Volume II, p.147

organisation in order to see whether the organisation as such supports or hinders managers' use of the budgetary information. The study proved that although the organisation is not as perfect as the theory, there are no major obstacles which may hinder managers' use of budgetary information.

Second, the theory requires an accurate basis for the budget standards. This does not necessarily require the implementation of scientific standards, although it is claimed that the application of scientific standards would enhance the value of budgetary control. The second step in the empirical analysis was to study the process of developing scientific standards. The study proved that the implementation of scientific standards in the group studied on the whole is a clear application of the principles of scientific management. Thus, scientific standards do not represent a major obstacle which hinders managers' use of their budgetary information. On the contrary, scientific standards were found to provide a favourable environment for the development of budgetary control.

Third, the theory necessitates that its application should consider the objectives, problems and the circumstances of the factory concerned. These have been studied. As a result it has been found that in each case the objectives, problems and environmental circumstances do not hinder managers' use of budgetary information. On the contrary, these problems necessitate the application and use of budgetary control.

Fourth, the theory requires the implementation of a reasonable system of budgetary planning and control. These have also been studied and although not found as perfect as the theory, in most cases the study proved that the system did not have any major obstacles which may hinder managers' use of the budgetary information.

The research worker then looked at the managers themselves, taking each as a case study, and through comparing managers it was found that managers' use or otherwise of the budgetary information is related to internal factors which concern the manager himself such as his education, experience, training, participation in budget-setting, accountant's role as an interpreter, and senior manager's follow-up.

In fact, these factors were first identified, second cross-checked, and third proved and related to managers' use or non-use of budgetary information as follows :

First Interviews with managers, senior managers, and accountants in the first group of factories studied, 'A', 'B', 'C' and 'D', provided a set of factors which managers thought to support or hinder their use. The analysis of this completed the first stage of the empirical study.

Second the factors were then cross-checked in a completely different number of factories with a different set of circumstances, in order to ensure that the factors identified in the first stage of the study do not belong to a certain set-up and that they did not come up by chance. This constituted the second stage of the empirical study. The factories chosen were identified as 'E', 'F', 'G' and 'H' for the purpose of the study. They were completely different from the case studies in that they had different sizes, technologies, products, ownership, and management. The study was concentrated on one department. For this purpose they are referred to as the limited investigations throughout the text.

As a result of this second stage, the same factors were identified with one exception; that one factor, participation in budget setting, which was originally thought to be one of the main factors which establishes use, has proved to be only a supporting

factor, i.e. participation by itself does not establish use unless coupled with a high degree of appreciation of budgets as a result of high education, or senior manager's follow up or both. Therefore, participation was taken as a supporting factor rather than one of the main factors which establishes use .

Third On the basis of the findings of the two stages of the empirical study, hypotheses were constituted as to which factors establish use and which factors support it.

Finally The hypotheses were then tested and proved in the third stage of the study, by taking each manager as a case study in himself.

Thus, for each manager, the following evidence was needed :

1. To esblish whether he uses his budget and information or not?
2. To establish the circumstances and facts in which the manager is working.
3. To identify the relevant factors which affect his use or non use.
4. To relate these factors to the first finding ; whether he uses his budget and information or not?

This was obtained through carrying out the following, for each manager:

1. An analysis of the manager's interviews
2. Cross checking information out of :
   (a) a study of the departmental figures in order to establish whether the variations in the department's performance are in a state of control.
   (b) evidence from the detailed study of other documents
   (c) accountant's interview
   (d) senior manager's interview
   (e) other managers' interviews
   (f) personal observation

As a result of this, the research worker had:

1. facts
2. cross-checked opinions, and
3. opinions

Moreover, the facts of each control system relating to a certain budget such as the sales or the production or cost budget were identified.

Then, through comparisons, factors were proved. Comparisons involved the following :

1. Comparisons between the factors which affect use or non-use in each case with the similar managers who belong to the same control system, i.e. production managers, sales managers, service managers, and so on.
   For example, if there are only two managers, A, and B, who are responsible for the sales budget, manager A is followed up on his performance whereas manager B is not. At the same time manager A uses his budget whereas manager B does not.
   One may then suggest that manager A's use is due to senior manager's follow up and manager B's non use is due to non follow up.

2. Moreover, if manager A uses his sales budget and does not take any notice of his sales cost budget, then another comparison of the same manager between the factors which affect his use of the sales budget and the others which affect his non-use of the cost budget, would prove the factors behind use in the sales budget and non-use in the cost budget.

   For example, if as a result of investigation one finds out that all the facts of the two control systems are the same except one, that manager A is followed up on his sales budget and is not followed up on his cost budget, one may then suggest that manager A's use of his sales budget is due to his senior

manager's follow up, whereas his non use of the cost budget is due to non-follow up. OR, one may find out that manager A is followed up on the two budgets, but he does not think that the cost budget is relevant whereas he thinks the sales budget is wholly relevant. One may then suggest that it is the degree of relevance which is the cause of non use in the case of the cost budget.

3. Another comparison is that between the different systems in the same factory.

4. A comparison between the similar cases in the first group of factories.

5. A comparison between all the managers in the girst group of factories, 'A', 'B', 'C' and 'D'.

6. A comparison of the similar cases in the second group.

7. A comparison between all the managers in the second group of factories, 'E', 'F', 'G' and 'H'.

8. A comparison of the results of the case studies with those of the limited investigations.

9. And finally, collating the findings of all the factories studied.

This analysis of the findings of the third stage of the empirical study was carried out and proved the hypotheses as to the factors which establish use and the others which support use. Moreover, these factors were then related to use, and the qualitative association has been measured statistically. As a result the relationships between managers' use of budgetary information and the factors which affect it have been proved. This then concluded the empirical study.

However, one may argue that the factors could have been developed through the research worker's imagination. In fact, this is not true since the study guarded against this and the factors came absolutely out of the analysis of managers' interviews, without

any influence from the research worker. But how could this be done without constituting questions or stimuli which may lead to certain factors in the interviews responses. This could be true, however the research was designed from the very beginning to guard against this as follows :

(a) There was no definite model for use or non use before the beginning of the study, only the general theory which never answered why managers use their budgets.

(b) The research worker did not know the organisations studied before.

(c) There were no definite questions or questionnaires before the beginning of the investigation, therefore the imagination of the research worker could not have influenced the study at this stage.

But how were the interviews conducted ?

The interviews were open ones which were conducted to find out first of all the facts of each case, rather than to presume factors or relationships.

The questions were factual and followed the cycle of budgetary control from the preparation stage to use. This was carried out in four different factories working under different systems with different managers but belonging to one group. This represented the first stage of the empirical study.

As a result of the critical analysis and evaluation of managers' responses, certain factors were identified. These factors then formed the basis for a guide interview questions list (1). Three question lists were set up, the first is for the manager, the second concerns the senior manager, and the third concerns the accountant.

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(1) The texts of the questions list are presented in Appendix 'B', Volume II, p. 36

The theme of the managers' questions list is to ask the manager bout the facts; what actually happened in the year under the study, nd what usually happens, and his opinions on what actually happened. o the manager is not stimulated to give theories or provide eneralisations, he is only stimulated to answer a pinpointing question bout what actually happened and what does he think of what actually happened.

The accountant's and senior manager's questions lists on the other hand are intended to obtain information and opinions in the same way to cross check the manager's interview.

The interview guide questions list was constructed as a preliminary draft and pre-tested for its make-up and contents. In fact, it has been drafted and changed several times. Moreover, the questions list was tested for its logical consistency in a research seminar of seven colleagues in the department.

The next logical step was to test the validity of the question lists in a different set of factories working under different conditions in order to test whether the same factors identified in the first stage of the study are applicable and whether the first group of factories is a representative sample as far as the object of the research is concerned or that one may need to extend the investigation to different factories. This limited investigation was carried out in four different factories, 'E', 'F', 'G' and 'H'. This represented the second stage of the empirical study.

As a result of this stage :

(a) The same factors were identified.

(b) It broadened the research worker's experience

(c) It confirmed that the first group of factories is good enough to achieve the object of the study.

As a result of this, it was decided to go back to the first group of factories to study their managers in more depth, as the research worker had the advantage of the background study and the personal knowledge of managers.

Hypotheses on the basis of the findings of the two stages of the study were constituted and the next step was to prove these hypotheses. This then represented the third stage of the empirical study.

The third stage of the study was carried out and proved to be the most fruitful part. The research worker was able to study managers in depth; taking each manager as a case study in himself and through comparison of the different cases the identified factors were proved and related to the main conditions of the theory; managers' use of budgets and information. The analysis of the findings of this stage concluded the research.

Limitations of the Study:

1. It should be emphasised that the study does not report on managerial planning and control as such, these aspects will only be touched to show how and why managers do or do not use their budgets and periodic information.

2. The study concentrates on operating budgets; as such it does not deal with capital and long term budgets except in so far as to appreciate the general picture.

3. The study is related to the theory as a control model and as such presents and evaluates budgetary planning as a stage necessary for the control process.

4. The study is concentrated on the firms participating in the research only. However, these are not a representative sample of British industry. They are firms who have a system of budgetary control and were kind enough to give the research worker the facilities for case studies and limited investigations. In fact, they are two groups of companies, the first four

factories were studied extensively and intensively to provide case studies whereas the second group constitutes four factories in which only a limited investigation has been carried out to cross-check the results of the case studies. They represent an intensive study of a limited area of budgetary control.

5. The study is concerned with managers who are directly involved in budgetary control; the lowest level of managers who is either responsible or participates in the budgetary process and their senior. However, senior managers are studied only to establish whether they use their budgets or not in the sense of whether they follow up their subordinate managers on its basis or not. They have also been studied to measure their attitude or opinion and to cross-check interviews responses with managers.

In the first group of factories, all managers who are directly involved in budgetary control were studied. However, although group top managers were interviewed, they were not studied.

In the second group of factories, the study was limited to a certain budget or a certain department, and only those managers were studied.

6. The study does not report on all factors which affect the main condition of the theory. Only those factors which came out of interviews, as a result of the first stage of the research, were studied and proved or disproved.

7. The study does not report on budgetary control as a psychological problem.

However, to study budgets without studying the people who run it would result in a mechanical study of the different forms and would amount to an attempt to separate two inseparable things.

On the other hand, the research worker cannot analyse the personalities of the different managers and accountants, although there is evidence to support the claim that the personality of the manager has something to do with use or non-use of budgets.

Therefore, a happy medium was adopted to report and describe the effect of certain practices on relations in a limited sense as the research worker sees it, without attempting to analyse the factors behind it as this constitutes a study on its own which needs certain qualifications.

Thus, the study is only concerned with the main conditions of the theory and the factors which affect it in the factories studied. As such it does not allow sweeping generalisations, rather provides the experience of a certain number of factories, and as long as the same conditions prevail, the same conclusions are valid.

PART TWO

THE EMPIRICAL STUDY

The object of this Part is to present the evidence and the findings of the case studies and the limited investigations.

This Part is divided into five Chapters as follows :

CHAPTER IV:	presents the organisational structure and the development of scientific standards in Factories 'A', 'B', 'C' and 'D'.
CHAPTER V:	presents the first Case Study: Factory 'A'
CHAPTER VI:	presents the second Case Study: Factory 'B'
CHAPTER VII:	presents the third Case Study: Factory 'C'
CHAPTER VIII:	presents the fourth Case Study: Factory 'D'
CHAPTER IX:	presents a consolidation of the findings of the case studies with the result of cross-checking them with Factories 'E', 'F'. 'G' and 'H', of the limited investigations.

In order to facilitate comparisons a standard presentation is adopted in all the four case studies. Each of them is presented in a chapter divided into four sections. The first section deals with the environmental circumstances in which the budgetary control system is introduced such as the cost structure of the industry, ratio analysis and the problems of the factory under study.

The second section presents the planning stage of the budgetary system under three headings, the theoretical model of operational budgets, the empirical system, and an evaluation of this system. The theoretical model presents what should have happened in the factory according to the theory adjusted to suit the particular circumstances of the factory. Thus, an applied theory is attempted at this stage. The empirical system presents what actually happened in the factory and the third part evaluates what actually happened in the light of what should have happened.

The third section of each case study presents the control stage of the budgetary system. This again is presented under three headings, the theoretical model, the empirical system and an evaluation of the empirical system.

The fourth and last section presents the findings of the case concerning managers' use of budgetary information and the factors which affect their use.

Chapters V, VI, VII and VIII presents the four case studies 'A', 'B', 'C' and 'D' respectively. Chapter IX presents a consolidation of the findings of all the four case studies and the result of cross-checking them with factories 'E', 'F', 'G' and 'H'. (1)

Since factories 'A', 'B', 'C' and 'D' all are subsidiaries of a holding company, Chapter IV presents the organisation and the development of scientific standards in the Group.

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(1) The background material of Factories 'E', 'F', 'G' and 'H' of the limited investigations are in Appendix 'A', Volume II, p.1.

CHAPTER IV

AN INTRODUCTION TO THE CASE STUDIES

SECTION I : ORGANISATIONAL STRUCTURE OF THE GROUP.

As mentioned earlier, the application of the theory of budgetary control necessitates a clear cut organisation. The object of this section is to give a brief outline of the parent, subsidiaries, and productive units organisation. This will act as a basis to illustrate the environments in which the budgetary system was introduced. It will also help to find out whether the organisation structure supports or hinders managers' use of their budgetary information.

Evolution of the Group.

The first four factories under study belong to a packaging and printing group that was established as a small unit organisation over a century ago - in 1850. It developed gradually into a multi-unit organisation which, at present, operates many factories throughout the North as well as the South of England and Wales.

The present growth came about in three steps. Firstly, it developed from a one man organisation to a public limited company in order to get more resources than could be found in one family. Secondly, as the different productive units in the company continued to grow, they were formed into separate private limited companies so that they can only be responsible for the liabilities incurred in connection with their respective units. Thirdly, as the parent company (the group head office) grew up, it acquired other companies through buying other businesses and transferring them to private limited companies.

Thus, the gradual growth of the group resulted in the establishment of operating units as subsidiaries to the parent company whose controlling interest provided it with the legal basis for managerial and financial control of all the units in the group. Moreover, the

establishing family has a substantial interest in the parent share capital. To sum up, the one-man business developed to a multi-unit organisation with the head office as a public company and the operating units as subsidiary private ones.

Decentralisation in the Group.

The management of the group follows a pattern of decentralisation which observes the twin considerations of organisation into units; giving maximum advantage of planned production, at the same time keeping the individuality of each operating unit. The gradual growth of the group, the dispersion of factory locations, and the specialisation of each factory in different product lines led to the adoption of this pattern of decentralisation with its product, geographical, legal, managerial and accounting aspects.

The gradual growth of the organisation led to a multi-product group, rather than a horizontal or vertical product integrated one. In fact, each subsidiary specialises in particular product lines which can neither be considered as the same nor as raw material to one another. For example, Company 'A' with its two factories manufactures corrugated cases, whereas Company 'C' is engaged in multi-process printing, and Company 'D' in carton packaging, with other companies specialising in other activities.(1) This product specialisation is one aspect of decentralisation in the group.

Geographical decentralisation is evidenced by a great dispersion of factory locations throughout England and Wales; another aspect of decentralisation.

Legal decentralisation is present in the fact that each company is a separate legal entity and thus is responsible only for the liabilities incurred in connection with its activities. Each of the operating units, however, is owned entirely by the parent company which provides the authority for the general direction and financial control of the operating units.

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(1) Neither the name nor the other activities of the group will be given in order to keep its anonymity.

Managerial decentralisation is evidenced by the existence of a parent board for the group head office and a local board for each subsidiary; a third aspect of decentralisation. However, the extent of managerial decentralisation differs depending on whether the subsidiary has one or more factories under its direction - this only happens when more than one factory produces the same products. If only one factory manufactures certain products in the group, a subsidiary board through the managing director is responsible for the efficient running of the factory.

In the other cases, where there are more than one factory producing the same products, the largest of the factories is managed through the managing director, whereas each of the other factories are managed through a resident director or a general manager who is directly responsible to the managing director, who in turn is responsible to the subsidiary and the parent boards for the success of all the factories who belong to the subsidiary. The resident director or general manager presides over the local management committee, which consists of all the local managers and the accountant of the factory concerned.

Accounting decentralisation follows the managerial one, and is present in the fact that each factory has its own set of budgets, control information, and periodic accounts which are designed to help local and group managerial planning and control. This pattern of decentralisation led to the adoption of a twin purpose system of control; local and central controls. Local controls are designed to show the extent of deviations from plans and to minimise the adverse variance through corrective action. Central controls, on the other hand, are designed to give a comparative view of all the factories' activities, and to find out how well the delegated authority is exercised.

Thus, the group follows a pattern of managerial decentralisation with two main tiers: the subsidiary board and the parent board - the group headquarters.

The Group Headquarters

The parent board acts as the focal point of responsibility for the whole organisation. Through the chairman the board is responsible to the shareholders, of whom the establishing family represent a controlling interest.

The chairman of the parent board as well as the subsidiaries are all members of the establishing family and the parent board. Thus ownership is represented on all the boards, which is an important factor to retain the family control and offset, to a large extent, any 'empire building' by other managers.

In addition to the chairman of the subsidiaries, a group financial director, sales director, managing director, and a group development director are all members of the parent board.

The parent directorate provides an overall guidance and control over all the subsidiaries. Although each subsidiary board is responsible for planning and controlling the activities of its factories, the parent board acts as the agency which approves of all significant economic plans; general investment decisions over a certain limit, operating, capital and new project budgets for all the factories.

The group headquarters provide common services to the units in the field of sales; finance, taxation, budgets, control information, periodic accounts preparation, and organisation through the functional group directors and their assistants.

The sales director is prepared to give consultant advice to any of the operating units if they asked for it, or to interfere himself or ask the parent board to take a corrective action to adjust the units' sales activities if the situation is called for, as revealed by central control information provided by the subsidiaries. He attends some of the subsidiaries board meetings and reports on the group sales activities to the parent board, which holds its meetings once a month after the monthly meetings of all the subsidiary boards.

The group financial director is the de facto controller in the group. Being a highly specialis ed expert, [1] he devised central control information for the group, as well as local controls to some factories, and is styding the possibility of introducing new developed systems in others. He follows up the administration of the systems and the achievement of budgetary targets, through attending most of the subsidiary board meetings, getting control information from the operating units, and reporting periodically the factories cost and financial activities to the parent board. He also recommends on the approval or otherwise of the subsidiary budgets: operating, capital, long term, and new projects, to the parent board.

The group financial director, through his assistants, prepares the group cash and profit budgets from the original budgets prepared by the operating units, thus helping him to plan and control the movement of funds in the group. The cash moves from the middle, and thus the parent company acts as a borrower to some subsidiaries and a lender to others. As will be seen later on, the group financial director's impact on the organisation can be evidenced by the change of the organisation objective from mere continuation to an efficient one, as well as in trying to get all the units together under the parent directorate.

Through his assistants, he provides expert advice to the accountants of the subsidiaries, and recommends on the best practice in the fields of finance, cost, taxation and control information systems. As can be seen on Chart No. IV.1, he has three highly qualified assistants, [2] as group cost accountant, group financial accountant, and group system designer.

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(1) He was a management consultant, and as such devised information systems to many factories in the manufacturing industry.

(2) All of them are members of either the Chartered Accountants or Cost Accountants Institute.

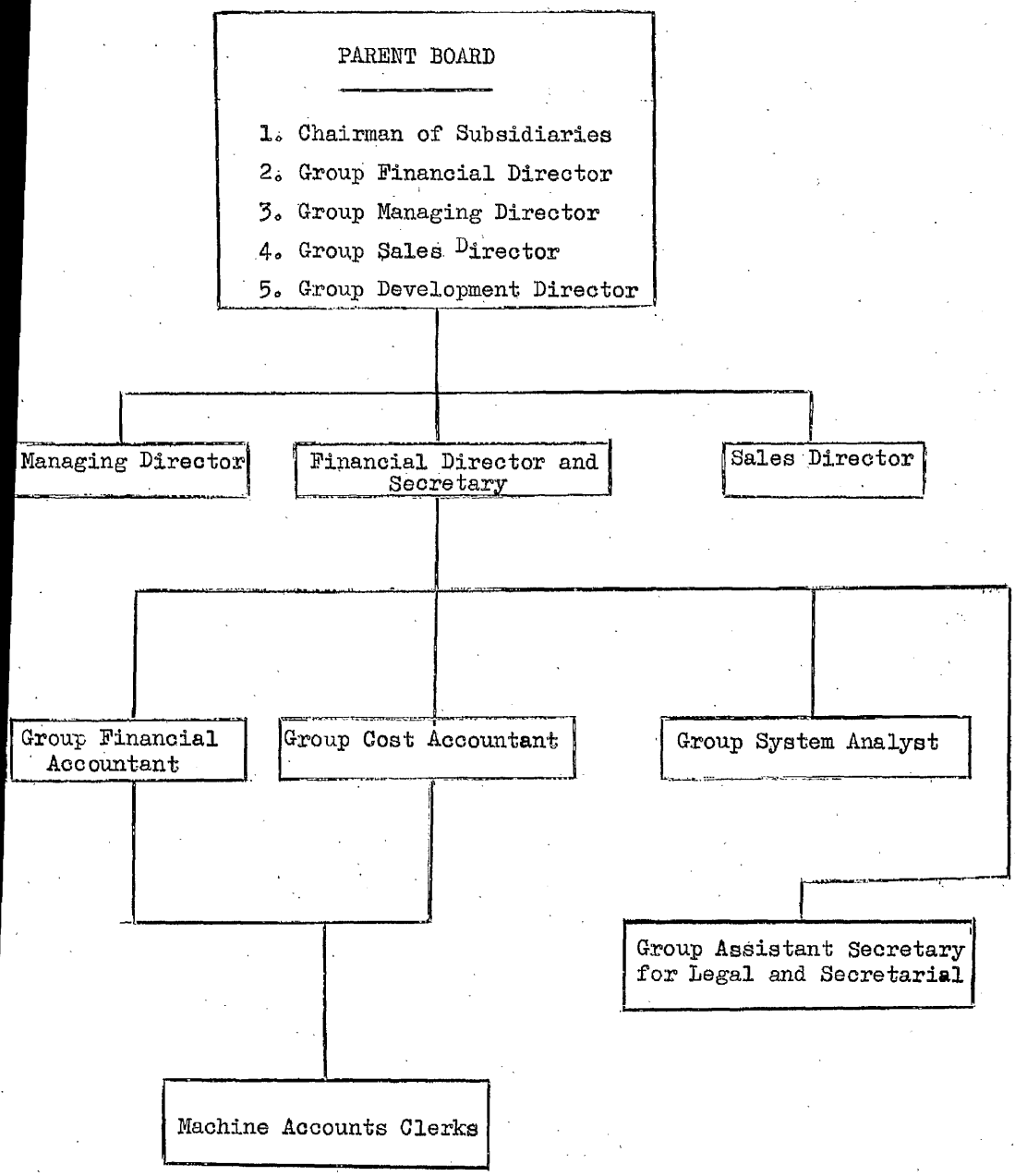

CHART IV.1: HEADQUARTERS ORGANISATION CHART

The group system designer devised the control information system in one factory and was developing it in another. The group cost and financial accountants, apart from providing expert advice to the units on cost, taxation and finance matters, they compile, prepare and coordinate the group budgetary information.

Although some factories are self-contained as far as accounting services are concerned, through having their own highly qualified accountants, in other factories the preparation of accounts is centralised in the group head office, with an accountant merely as a book-keeper or an office manager in each factory.

This helps to reduce cost through centralising machine accounts in the group headquarters. However, it is found that the system works very badly in providing middle and operational managers (departmental managers or supervisors) with control information and in helping them understand and use their information.

As the system works, in its present state, in one factory the group cost and financial accountants prepare the periodic final accounts and information from summaries sent to them fromthe factory. The group cost accountant attends the subsidiary board to help explain the accounts, and thus helps only top management. The local factory accountant is supposed to provide all local levels of management with information, explaining to them what it means and how it should be used.

But as it works in practice, he works as a book-keeper, provides a final check on estimates of sales invoices (for old customers who do not get a new estimate as they place orders right away), shows the departmental managers the weekly control returns, and reports excessive material waste occasionally to the managing director. Thus, he does not provide any valuable service to local managerial levels as far as explanations, following up the system and the information are concerned. Although he is formally known as the accountant, he is a de facto book-keeper and an estimate-checker.

However, one may argue that two parts of his actual job - showing departmental managers their weekly controls and reporting on material waste - are partly related to the accountant role of explaining and following up the information. But it has been ascertained from interviews with departmental managers, that all of them but one do not know what the weekly control is about, although the method of presenting the information personally by the accountant is supposed to provide a more helpful service to managers. Apparently the result in this case depends on the personality of the accountant and his qualifications. As to the other part of his job - reporting on material waste - this is done occasionally (in the accountant's own words: probably once each quarter).

Thus a decentralised accounting service is needed to provide all managerial levels, especially the lower ones, with information and explanations. This has partly been taken care of through appointing the group system designer as the accountant and secretary for two factories. As he is the one who designed the system in the factory just mentioned above, he is in a better position to provide information, explanations, and has a self interest in following-up a system he originally designed.

Thus, the financial director and his assistants have a great impact on the organisation by generating managerial efficiency through the provision of information to all managerial levels to help them in planning and controlling their company's activities.

The group development director was primarily responsible for technical research and studies of developing new projects for the whole group. However, he is now a managing director of one of the subsidiaries, and as such is concentrating on developing his own subsidiary.

A new position of a group managing director was created during the case study time. His main function is to study the organisation and report to the parent board on any improvement to the organisational structure of the whole group, as well as to co-ordinate the activities

of all the subsidiaries, with particular emphasis on the printing group as a starting point - a function which is urgently needed in the group.

He is given wide powers in order to influence and lead the other managing directors to a more unified co-ordinated whole, rather than being separate departments who regard the parent company as a financial trust. However, it remains to be seen whether he will act as a leader in coordinating the subsidiaries' activities, or will only act in a consultative capacity.

Much of his work will depend on his character and tactics as he is dealing with one of the most intricate problems of human relations: autonomy, 'empire building', interdependence, and growth or contraction of power of the different entities and personalities in the group.

Thus, a great deal to strike a balance between the two extremes of independence and interdependence of units following the parent leadership is needed. Whatever small contribution he makes in this field will serve the group immensely in getting all the subsidiaries together under the group directorate (most of them are highly specialised experts) and thus making the sum of the units in the group more than unity, especially in the sales activities, while in its present situation it only approaches unity, (1) and ultimately this will increase group consciousness and enable the highly specialised experts to give more service to the units.

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(1) This is known as increasing the synergistic effect, which is defined as co-operative action such that the total effect is greater than the sum of the parts taken separately.

Webster's New International Dictionary, (2nd Edition Unabridged). G. & C. Merriman Company, Springfield, Massachusetts, 1949, and Mason Haire (Ed.) Organisation Theory in Industrial Practice. "A Symposium of the Foundation for Research on Human Behaviour", New York: John Wiley & Sons, Inc., 1962, p.10.

This new development in management philosophy in the group has been primarily the result of appointing highly professional experts in the group top management. The progressive attitude of these experts will not only achieve an efficient group, but will also help to change the classical attitude of top managers of some subsidiaries to a more progressive one, and as the top level influences the other levels, it is predicted that this progressive attitude will spread down the line in the near future, providing other things being equal. Thus, high qualifications and strong personalities at the group top level lead to a more progressive efficient organisation.

The Subsidiary Boards

Each subsidiary has a local board whose members are appointed by the parent board which sets their terms of reference and holds them to account. Members of the subsidiary board are : the chairman, local managing director, other local functional directors such as works director or sales director. The chairman and functional members of the parent board also attend the meetings of the subsidiary board as a means of control, guidance and generating group consciousness.

The subsidiary board carries on the detailed administration of the factories within its jurisdiction subject only to guidance and approval of the parent board on general policies and plans. However, the formulation of policy and approval of plans by the parent board takes place, to a considerable extent, on information provided by the subsidiaries. This does not mean that the parent board's role in approving budgets and plans is a mere rubber stamp. In fact, the parent board has a positive role in two ways: through group directors attending the subsidiary board meetings and thus influencing the preparation of the budgets, and through the financial director recommending approval or otherwise of budgets to the parent board. In 1964, the parent board sent

one of the subsidiaries' budgets back to the local board for adjustment according to the parent's proposals. However, the subsidiary board has wide authorities as far as the local activities of the company is concerned, and so long as its policies are within the framework of the parent's policy.

The local managing director is supposed to be responsible to his board for the efficient running of the company, but in fact he is only responsible to the chairman of the local board. As the managing director is the senior director over the local directors who are heads of functional departments, and as he is the only local director who is responsible for general management of the company, other local directors, even though they are members of the board, are responsible to him and not the other way round.

But, what is the local directors' relations to group directors who attend the local board meeting? As mentioned before, group directors are either family members or functional experts. As to family directors, each local director has a self interest in keeping good relations with them as they represent ownership as well as seniority in management positions (being the chairman of the parent and the local boards).

As to group functional directors, their influence on the local board members depend entirely on their personality and tactics rather than their function and status. One may argue that as they are experts in their own fields, and as they are in a senior psition being group directors, this will give them a leadership advantage over the local directors.

However, this is not always the case. The whole matter depends on the personality of the director; if his personality is strong enough with his expert knowledge as an advantage, it is highly probable that he will influence the local board decisions. If, on the other hand, his personality is not strong enough, his expert knowledge is not an advantage, as the local board would not take

any notice of his argument, if the local directors choose to oppose him. However, as most of the group directors are of strong character, this last position does not arise very often.

The composition of all subsidiary boards is generally the same, with some deviations to follow the particular size and circumstances of each company. All the boards have a chairman, a managing director, a works director, and some other directors (Chart No. IV.2).

Company 'A', with two operating units A and B, has a sales director who is responsible to the managing director on the sales function for the whole company. There is also a resident director for factory 'B', who is responsible for the general management of the factory.

Company 'C', with one operating unit, has an area sales director (a sales area super-manager), who is responsible for the sales of one area, being the area with the largest share of sales, with other area sales representatives reporting directly to the factory with no sales manager to control their activities. This as has been ascertained from control information, resulting in other areas (other than the largest) sales representatives achieving only a small percentage of their budgets.

Almost every responsible executive gave a different answer to the reasons behind this problem, but all of them related it to the inadequacy of organisation of the sales force. This is a clear example of how budgetary control information can help management to reorganise the business through highlighting the inadequate areas of the organisation.

However, reorganising these areas is beyond the budget, as it is a managerial function which needs a managerial action, and in particular, an organisational one. The obvious managerial action to take here would be the intervention of the group sales director, to coordinate and control the sales force activities, according to his functional powers. What happened was that because the local

COMPANY 'A'

Corrugated Cases	Multi-process Printing	Carton Packaging
700 workers	350 workers	1100 workers
1. Chairman	1. Chairman	1. Chairman
2. Managing Director	2. Managing Director	2. Managing Director
3. Works Director	3. Works Director	3. Works Director
4. Sales Director	4. Area Sales Director	4. Commercial Director
5. Resident Director & General Manager of Factory 'B'	5. Secretary and Accountant.	5. Secretary and Accountant.
6. Secretary and Accountant.		

CHART NO. IV.2: A COMPARATIVE CHART OF SUBSIDIARY BOARDS COMPOSITION.

directors opposed his intervention, the sales position kept getting worse, with the local directors giving excuses each time as to the stagnation of the market, the unfavourable seasonal variation, and so on.

Finally, the parent board intervened by appointing a group managing director who is studying the organisation at Factory 'C', and by asking the local board to appoint a sales manager. This proposed solution is urgently needed, but it will take some time to implement, especially at a time of economic prosperity and full employment.

Instead of waiting all that time and watching the rapid deterioration of the sales position, one of many solutions could have been adopted, such as asking the area sales director to organise the sales force of the other areas or through the intervention of the parent board. The subsidiary board could have been told to adopt the group sales director's solution to the problem. But instead of all these, and many others, they waited until they found a sales manager. In fact, a sales manager was eventually appointed in 1965 as a result of the appointment of a new general manager for the factory. Thus, this situation is a clear example of non-existence of the synergestic effect in the group. It also shows the urgent need for an organisational expert in the group, a position which has recently been created.

Company 'D', being the largest operating unit in the group studied, has a commercial director who is responsible for the purchase of materials, and is the de facto controller for the company, as will be seen later on. A sales manager is responsible for controlling the company sales function. Thus, the main organisational problem in the subsidiaries, at present, is the sales force at Company 'C' in comparison with a progressive attitude of keeping a large sales force at Company 'A', thus distributing the sales risk, and a conservative attitude of keeping a small sales force at Company 'D', thus concentrating on a few customers with large orders who deal directly with the company and achieve the sales target.

However, Company 'A' is in a favourable position for many reasons; the market is expanding whereas it is stagnant or expanding to a lesser degree in the other companies, the strong personality of the sales director, the continuous reorganisation of the sales force to achieve better results, and the cooperative attitude of all members of top and middle management.

Subsidiaries' Main Departments

A more precise idea of the subsidiaries' activities can be gained from a brief outline of the work of the main departments. The departments normally found at a subsidiary company are production, sales, and accounts. Although they differ according to the size of the company, the functions of the departments are nearly the same. The production department includes the factory's production, planning and control, work study, works engineering, material storage and control, quality control, finished goods warehouse and delivery sections. The department's most important task is the preparation, administration , and control of long term, short term, and daily plans for production.

The sales department includes sales correspondence, design and customers' service, estimate and sample design sections on the sales office side, and sales area managers and representatives on the sales force side. The sales department's main task is the preparation, administration and control of the sales function with its two sides - the sales force and the sales office.

The accounts department's function is the preparation of periodic accounts, coordination of budgets, and provision of information to different managerial levels.

Productive Units Organisation

The organisation structure of each factory has developed, in general, according to the line staff type. However, the structure has been modified to contain some elements of functional control. The basic line organisation hierarchy differs from one factory to another, but they can be divided into two main groups, A and B, and C and D (Chart No. IV.3).

The staff of the factory is in the third level and consists of the chief works engineer, chief work study engineer, production planner and controller, all of whom report directly to the works director.

Functionalisation is shown by the division of the activities of each factory into groups of related activities or functions to constitute the departments which are placed each under a manager, such as the works engineer, or a departmental manager in Factories 'C' and 'D', such as the managers of the manufacturing departments and a foreman in Factories 'A' and 'B' for the manufacturing departments.

The manager, departmental manager or foreman is then given full authority over the personnel of his department. This is the line authority which a manager or a departmental manager has over his particular department. However, the span of control of a departmental manager or a foreman is different from one factory to another according to the factory size and number of manufacturing departments. For example, a departmental manager or a foreman commands an average of 85 workers in Factory 'A', 50 in each of 'B' and 'C', and 100-200 workers in Factory 'D'.

Functional control is shown in the factories by the relation between the production planning and the line manufacturing departments. The production orders issued by the production planning do not advise the line manufacturing departments to produce, they order or direct them to produce.

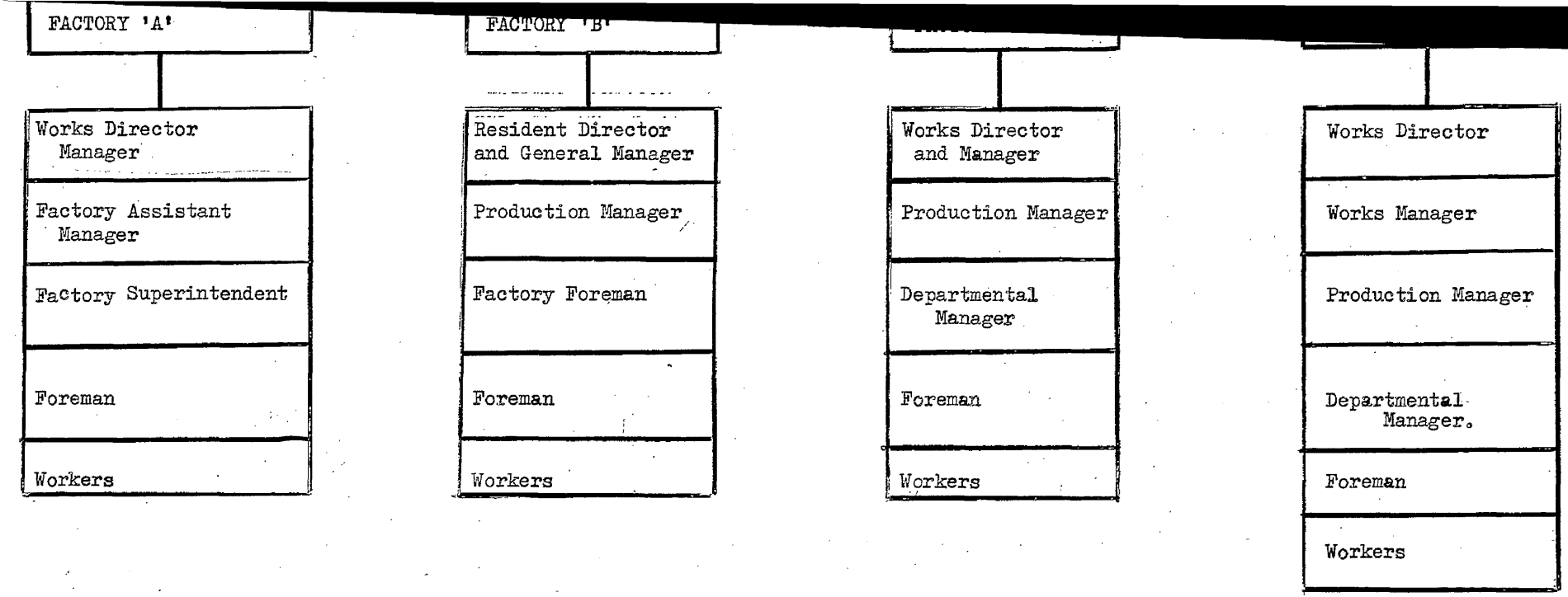

CHART NO. IV.3: COMPARATIVE CHART OF LINE HIERARCHY IN THE WORKS DEPARTMENT

This is a functional relationship. The use of this concept s justified on the basis that it relieves line managers of important etails and places them in the hands of experts in the particular ctivity.

Other relationships in the factory are staff in nature, such as he accountant who reports to all levels of management. Here he applies is expert advice and service to the line executives. Thus the factorys organisations mainly follow the line staff concept which has been roadened, in certain instances, to include the application of functional control as an exception to the general line and staff type.

Such is the situation in the factories under study. Each person reporting to the managing director, coordinates the activities of his responsible area with the needs of the company. This allows the managing director effectively to coordinate the work of all the areas without undue strain.

This, however, is more apparent in Factories 'A' and 'B' than 'C' and 'D'. The managing director of 'A' and 'B', being a management consultant before, has freed himself from routine work, thus effectively coordinating the activities of the main departments under his leadership. In other factories, the managing directors are still engaged in some routine work, mainly estimates in one case, and delivery and estimates in another, with the coordination of the activities of the departments not as effective and as clear as in 'A' and 'B'.

Conclusion

The organisation structure of the group incorporates the advantages of decentralisation with its geographical, product, managerial and accounting aspects, which tend to enhance managerial planning and control.

The main advantage of geographical decentralisation is the availability of labour and other production inputs, as well as the proximity to markets. However, the main disadvantage is the lengthening of lines of communication which helps 'empire building'. However, with today's network of communication system, with appointment of highly specialised strong personalities on the parent board, and with group top directors attending the subsidiaries meetings, and using their control information, this does not prove to be a major hindrance.

Product decentralisation enables each factory to specialise in few product lines, with the result that each factory management is better able to plan and control their particular activities.

Decentralised managerial decision making, with a good system of communication, speeds decision making, improves the value of decisions since as many things as possible are decided as near as possible to the productive units, by local individuals who are familiar with the local problems, whereas general policies and decisions are decided by highly specialised functional experts and family directors on the group level. It must be stressed that managerial decentralisation with strong personalities at the group level helped to develop an efficient organisation, at the same time keeping the individuality of each company, and guarding against 'empire building'.

Accounting decentralisation enabled the provision of information to all managerial levels, thus helping them to plan and control their particular activities and departments.

Functionalisation is also present at the group as well as the local levels. At the group level, apart from family directors, each group director is responsible for a certain function, and thus has a functional relationship with all the individuals performing this function in the subsidiaries. Whether group directors use this authority or not depends entirely on their personalities and relationships with the subsidiary directors.

At the local level functionalisation is evident by the division of factory activities into functions to constitute the different departments. The main advantage of functionalisation is that it enabled highly specialised experts to be brought to the group to direct certain activities, thus relieving line management by helping them to concentrate on problems of general management. However, elements of functional control have been introduced in the group as a result of the gradual growth of the firm and as an exception to the general line and staff concept.

There is, of course, no one particular type of organisation that is best. In each situation the most effective type is determined by the conditions under which it must operate, and whether the organisation is flexible enough to achieve its objectives under the different circumstances. The structure used in the group under study was developed to fit the particular situation in order to achieve the organisation objectives, and thus, as conditions and objectives changed, the structure was modified accordingly.

This process of development and adjustment is evident in the group, for there have been several structural changes during the period of this study, the most recent of which is the appointment of an organisational expert on the parent board, a modern practice which has recently developed in large firms in America.(1)

The present structure seems to offer the group management an effective method for planning and controlling the group activities. This is also evident by the fact that the organisation has achieved its objectives of retaining family control and profitable continuation for over a century as well as growing profitably under

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(1) Ibid, pp. 1 - 12.

ifferent economic conditions of prosperity, recession, depression nd recovery, at the same time keeping good relations with management nd labour.

As such, this organisational structure does not seem to prevent anagers from using their budgetary information. On the whole, it eems to provide a favourable environment for the development of udgetary control and therefore should enhance rather than hinder anagers' use of budgetary information.

CHAPTER IV

SECTION II: DEVELOPMENT OF SCIENTIFIC STANDARDS IN THE GROUP.

Scientific standards represent one of the primary foundations of scientific management as they provide an objective basis for planning, measurement and evaluation of business performance. They are the scientifically accepted criteria against which actual performance can be compared and variances measured.

They are either technical or monetary, depending on terms of measurement. Technical standards are those expressed in terms of physical measurements such as quantity and quality of production, units of waste and service, man-hours, machine runs, efficiency of labour, machines, cost centres, or departments. Monetary standards on the other hand, are those expressed in monetary terms, such as standard costs and revenues.

In order to achieve the managerial functions of planning and control, an enterprise must use standards of some sort as a basis of the process. Scientific standards, although they are neither infallible nor absolutely accurate, are more objective than other alternative medias of past experience or personal judgement, and as such are the best science has produced in the present circumstances.

As all the factories under study in this group have introduced scientific standards as the basis of the budgetary planning and control process, this section will present the principles, techniques, and procedures used in the different factories for developing standards of performance. (1)

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(1) In order to enable the research worker to evaluate scientific standards more fully, he attended a course on work study intended for business managers and work study engineers, in the University.

Evolution and Organisation of Work Study Function

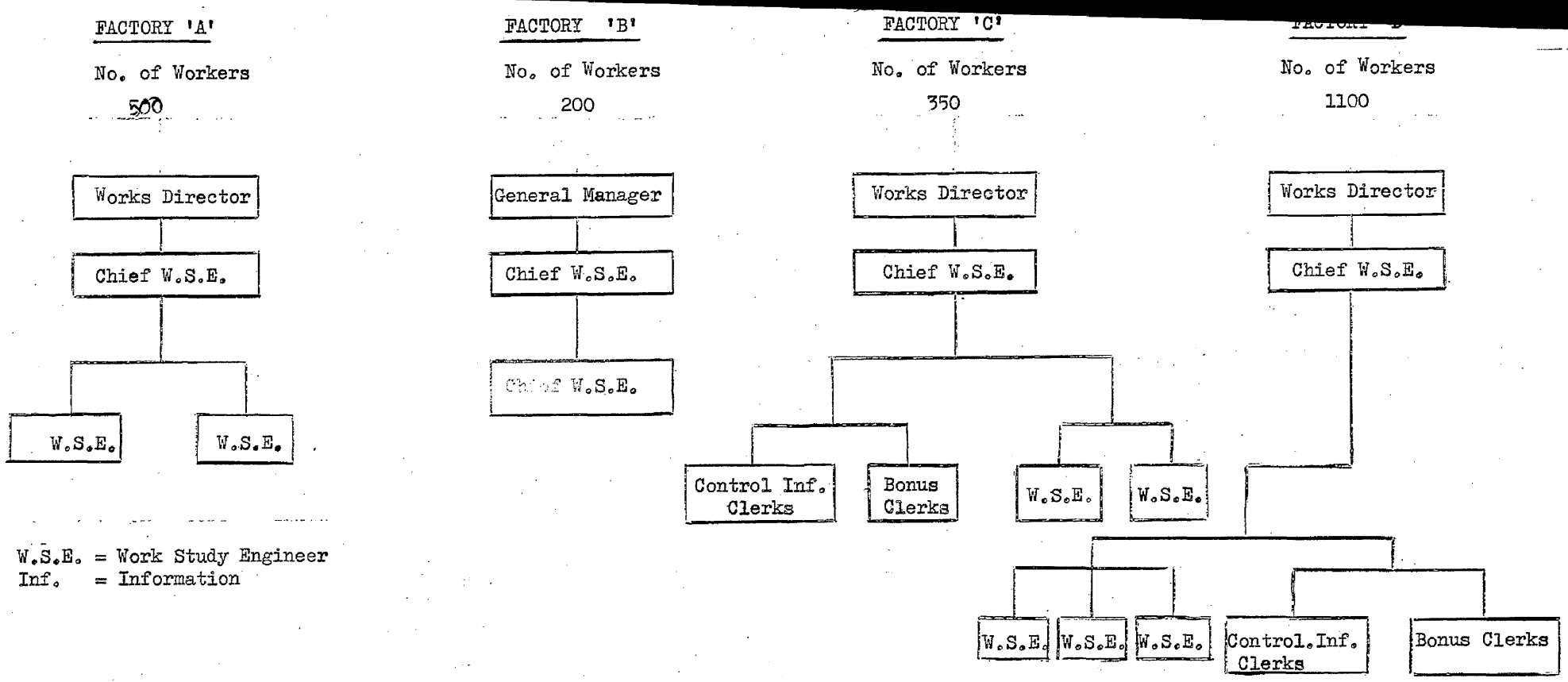
Work study was introduced gradually into the group. It started by calling upon two management consultant firms to put in an incentive scheme based on scientific standards, and it now developed to a decentralised function, with each factory having its own department of work study. Each department is under the direction of a chief work study engineer, who is directly responsible to the works director in the factory concerned.

The size and functions of each department is largely dependent on the size of the factory, the extent of the completion of standards, and the scope of work. In fact, the number of assistant work study engineers ranges from one in factory 'B', being the smallest unit and where standards are nearly complete, to two in each of 'A' and 'C', to three in factory 'D', being the largest productive unit where standards are not as complete as in the other factories.

The department's most important task, in all factories, is to provide scientific standards through work measurement. In addition, the calculation of bonus and the provision of the technical part of the control information come under the direction of the chief work study engineer in factories 'C' and 'D', whereas they come under the accountant in factories 'A' and 'B' (Chart No. IV.4).

Scientific standards have been developed for the following items :

(1) Direct Labour
(2) Indirect Labour
(3) Apprentices and Trainees
(4) Machines
(5) Direct Materials
(6) Materials Waste



W.S.E. = Work Study Engineer
Inf. = Information

CHART NO. IV.4 WORK STUDY DEPARTMENTS ORGANISATION CHART

Whereas standards for all the above mentioned items are established in factories 'A' and 'B' for all the manufacturing departments, they are neither complete for all the items, nor applied to all the manufacturing departments in 'C' and 'D'. Materials and waste standards have not yet developed in 'C' and 'D'. Although it is relatively difficult in factory 'C' to standardise materials because of the nature of the work, diversity of materials and provision of some materials by customers, it is not impossible as claimed by the factory accountant and estimator. In fact, the two chief work study engineers of 'C' and 'D' claimed that it is not only possible but also imperative to standardise materials in order to exersice effective planning and control.

As to the extent of application of standards, in factory 'C' all manufacturing departments but one have accepted and established scientific standards as the basis for the incentive scheme. The management of the factory had to negotiate with six unions to accept scientific standards, and one major union did not accept scientific standards as a basis for bonus payment to his workers on the ground that their work is too artistic and therefore changeable.

In factory 'D' there are only two major departments without scientific standards. Instead, they are working on a group bonus scheme which provides that if the department as a whole achieves a certain target, a certain percentage of workers' basic wage is to be paid as a bonus. The target and the bonus percentage were arrived at by the commercial director through averaging the actual performance of each department for the last four or five years. The bonus percentage then works as a minimum and maximum. Workers will get this percentage whether they achieve their departmental target or go over it.

This scheme has proved to be of a disincentive nature rather than an incentive one. Through averaging the actual performance of a department, the scheme does not take any consideration of the worker as an individual human-being, and as such it does not provide any particular individual in the department with incentive. Instead, it works as an incentive to non-existent individuals, namely the department and the departmental-conscious individuals. This system assumes a high degree of departmental-consciousness, as an individual will never get his bonus, whether he is working hard or not, unless his department as a whole achieves its target.

In addition, this scheme motivates the labour force of each department to arrive at a maximum differential level equivalent to the bonus percentage. This has been proved to be true through a comparison of actual performance of the department before and after the introduction of one scientific standard.

Furthermore, the method of arriving at the target is non-scientific and therefore extremely subjective, which leaves the door wide open to labour and departmental managers to argue that the target is far too high to achieve, and the judgement of one person is not better than others who are directly involved by being responsible for its achievement.

Whatever the disadvantages of this system, it is operating temporarily, until studies are made and scientific standards are provided by the work study department. With the present rate of provision of standards by the work study department, it is predicted that the two major departments will be provided by standards within one year.

Although there are six main categories of standards in the group, this section will only present the main methods of establishing standards of a typical direct labour task, chosen from the actual sample studied with a discussion of the peculiarities of other standards.

Measurement and Establishment of Standard Times

There are two main methods of developing standard times in all the factories; the stop watch method and the standard data estimating method, with individual stop watch studies as the basis for the two methods. Under this, standards are set by time study, and the data are then kept for future reference. The standard data estimating method is similar to individual stop watch studies except that previous studies are used instead of making new studies each time standards have to be established for new jobs. This system saves the time of work study engineers, thus helping them to achieve better use of their time.

Standards provided by this method are as accurate as those provided by the stop watch studies, as long as the conditions of production for the new job are the same as those for the original time studies. However, once the standard conditions do not apply to the new job, new studies must be made to account for the change.

An experiment conducted by the work study department in factory 'D' has proved the claim that standards provided by this method are as accurate as new stop watch studies. The experiment was that after establishing a typical standard through the standard data estimating method, a new stop watch study was pursued by a different work study officer for the same job. His results were identical with those arrived at previously except for one element out of eleven, where actual stop watch study's result was 0.167 seconds in comparison with 0.160; the result of standard data estimating method. These figures show that the variance is highly insigifnicant and therefore the method results are as significantly accurate as the stop watch studies.

Standard estimating data is applied only in factory 'D' and was highly successful particularly in the tubing department. Taking into consideration that the factory is the largest in the group, and although the factory has the largest work study department, relative to the factory size, it is the smallest department in the group.(1) All these factors warranted the use of the method so that standards can be developed in a reasonable length of time.

Procedure of Developing a Typical Direct Labour Standard:

The theory states that the study, improvement, standardisation and recording of methods, should precede the determination of time standards. As Barnes put it (2) :

> "very often time standards are used as the basis for wage incentives, and most incentive plans either imply or specifically state that time standards or rates will not be changed unless there is a change in the methods of performing the work. It is therefore essential that an accurate and complete record be made of the method at the time it is put intoeffect or at the time the rate is set for the operation. If no such record is kept, it will be almost impossible in the future to tell whether the method then used is the same as that in effect at the time the standard was originally established".

Although the work study engineers in the group accept this, no systematic or formal record of the standard method is kept, except in factory 'C'. All the departments keep a file of the study which can be taken as a rough guide of the method through the recording of elements, with no significant work to improve or standardise methods, carried on.

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(1) If the ratio of work study officers to number of workers is taken as a rough guide of the scope of standards, the result will be as follows :

'A' = 167, 'B' = 100, 'C' = 117, 'D' = 275.

(2) Ralph M. Barnes, Motion and Time Study; Design and Measurement of Work, New York, John Wiley & Sons, Inc., 1963, p.327.

Faced with this, work study engineers argue that there are two main difficulties; the inherent difficulty that there is no perfect method, i.e. whatever improvement one can achieve, there could be further improvements, and therefore this is a continuous process, as well as the difficulty present in the limitation of the time factor. Furthermore, they argue that the main purpose of the department is to provide standards through work measurement in a reasonable length of time, therefore they should study and determine time standards on the present method first, and then improve and develop new methods later on.

The immediate result of such practice is that there is no standard methods and therefore operative training is done on the present method, so that the general condition stated in all the incentive scheme agreements that the standard will be changed if there is a mechanical change or a change in the standard conditions is practically meaningless, as there is no accurate record of the standard method, which is one of the main standard conditions.

The non-existence of accurate records of standard methods, apart from losing the firm the efficiencies of performing the task at a lower cost through method economy, led to a confusion in performing the standards. One of the apparent results is in the printing departments where some workers hurry up the 'make ready' of the machine, and keep adjusting the 'make-ready' all the time while the machine is running, in contrast with other workers who prepare their machines carefully at the beginning, with the result that the quality of their work is better than that of the first group of workers, but with a less quantity, thus procuring less bonus.

However, it is true to say that there is no perfect method, and thus work study engineers can never stop improvements. Barnes

states :(1)

> "Experience shows that there is no perfect method. In fact, there are always opportunities for improvement. Also conditions may change... therefore one is always confronted with the opportunity to improve processes and methods".

Although this is true, work study departments cannot be expected to produce perfect methods at the beginning in a reasonable length of time, but this should not deter them from studying the present method, making any primary improvements, record the standardised method scientifically which is a pre-requisite to train operatives, determine standard times, and standard conditions, for developing an incentive scheme. After completing all the standards, they can then develop new improvements and new methods. This, however, is tied up with the second basis of the argument - the time factor.

The time problem is more apparent in factory 'D' than all the other factories, because of the size of the factory, the number of work study engineers, and because scientific standards have not yet developed in two major departments. This problem can be tackled through the increase of work study engineers, a better allocation of their time or a combination of the two methods.

The first and third proposals involve a higher cost than the second one, through the appointment of more work study officers. Therefore the second method of better allocation of work study engineers' time should be adopted in the first instance by taking all the clerical and routine work away from work study and accounting departments, and the establishment of a separate section for routine work under the supervision of a senior clerk, thus leaving work

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(1) Ibid, p. 50.

study engineers to do more work on standard methods and times, also leaving accountants to do more work on providing management with information and explanations rather than being involved in clerical and routine matters.

Another proposal would be to get some of the work study officers in the other factories who have relatively completed their standards to help in the completion of standards in factory 'D'. If all this does not solve the problem completely, the only alternative is to appoint other work study officers to the factory.

In order to discuss the procedure of establishing standards in the group, one standard studied by stop watch will be outlined and any differences in the method in the other factories will be given. The study will then proceed to describe how to determine standard times through the use of standard data estimating procedure. Although in factory 'C' work study engineers start by studying the present method and record it in an accurately scientific way, they did not, however, do any significant method developments because of the limitations of time. In factory 'C' all direct labour present and proposed methods were recorded on a two-handed operation chart, with a process chart for all operations.

In all the factories, they start by studying the task and analysie it to small elements. For example, in factory 'D' a new job was ordered (a new cigarette pack). There were no standard data available for the tubing process of the job; "cut off bits of cigarette slides in the tubing department", so new stop watch studies were necessary to determine the standard time for the job. This is a typical manual operation for which studies have been performed, and the standard time issued the same day of the study. The job was first analysed to seven elements (Cart IV.5). Then the elements were recorded, at the same time rating each element and recording the time taken by the operative in performing each element as follows :

Operation: New Cigarette 20 slides Quantity/turn 12,000

No. slides per web : 3 pallet/bench 3 bundle quantity's 500

Strip bits ✓ Sand ✓

Elements :

1. to stillage and T/U 1500 (3 x 500) to bench
2. separate slides and stack into 1000's
3. roll, square and tie.
4. strip 1 bit using cutter.
5. strip 2 bits using cutter.
6. scrape bundle 1000 slides.
7. sand bundle 1000 slides and place aside.

Element	Normal time	Rest Factor	Minutes per Occasion	Frequency	SM/1000
1	0.15	15%	0.1720	1 - 1500	0.1150
2	0.44	20%	0.5300	1 - 1500	0.3540
3	0.58	20%	0.6950	1 - 1000	0.6950
4	0.69	23%	0.8500	2 - 2300	0.5650
5	1.05	23%	1.2900	1 - 3000	0.4300
6	0.20	23%	0.2460	1 - 1000	0.2460
7	0.20	23%	0.7250	1 - 1000	0.7250
				TOTAL	3.130
			Contingencies 2%		0.0626
					3.19260

Work value per 1000 slides

Standard minutes 3.2 per 100 slides

Standard minutes per turn = 12 x 3.2 = 38.4

Study No.

W.S.E.

CHART NO. IV.5: A TYPICAL MANUAL OPERATING TIME STUDIES' SUMMARY

Element	Rate	Time taken
1	75	0.12
2	75	0.38
3	75	0.52
4	70	0.63

and so on.

As eight continuous studies were performed, eight complete cycles (each cycle has seven elements) were recorded. Next, the work study engineer collated his information in order to arrive at the normal time for each element (normal performance by a normal operative working at a speed of 60 minutes per hour) by adjusting actual time taken at the actual speed of the operator to a normal speed of 60 minutes per hour. Working on 60/80 scale (1), he arrived at the normal time for each element in the following way, taking element No. 1 as an example :

Actual rating	60	65	70	75
Actual time taken at each actual rating	0.16 0.17	0.14	0.13 0.11	0.12 0.10 0.13
Total actual time at actual rating	0.33	0.14	0.24	0.35
(2) Total actual time at normal rating	0.330	0.152	0.280	0.437

(3) Normal time for element No. 1 is = 0.150 minutes per occasion

The same method is then performed to arrive at the normal time for all the other elements.

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(1). Almost each engineer in the group works on a different scale depending on his experience, however, all the different scales achieve the same results.

(2) This is obtained by $= \frac{\text{actual time x actual rate}}{\text{normal rate.}}$

For example for 75 rating $= \frac{0.24 \times 75}{60} = 0.437$

(3) Normal time is obtained by

$= \frac{\text{Total actual time at normal rate}}{\text{number of observations}}$

$= \frac{0.330 + 0.152 + 0.280 + 0.437}{8} = 0.150$ minutes.

The next step was to give a rest factor for each element. The rest factor varies depending on the fatigue involved in performing the element, and whether the operator is a male or a female. In fact, it was taken on average as $12\frac{1}{2}\%$ in factories 'A', 'B', and 'C', whereas in factory 'D' it varies from 8% to 25%. For this particular job, fatigue was exceptionally high, therefore the rest factor was above average as follows:

Element	Normal Time	Rest Factory	Minutes per Occasion
1	0.150	15%	0.1720
2	0.440	20%	0.5300
3	0.580	20%	0.6950

and so on.

The next step was to record the frequency of each element in a complete cycle, so that each element time can be weighted by its frequency in order to arrive at the time per 1000 slides (1) as follows :

Element	Minutes per Occasion	Frequency	Minutes per 100 slides
1	0.1720	1 every 1500	0.1150
2	0.5300	1 every 1500	0.3540
3	0.6950	1 every 1000	0.6950

and so on.

Total time for all the elements in a cycle is 3.130

The last step in developing the standard was to add a percentaage for contingencies. In this case, 2% was added

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(1) $\frac{\text{Time x Standard Frequency}}{\text{Observed Frequency}}$

For example for Element One :

$$= \frac{0.1720 \times 1000}{1500} = 0.1150$$

to account for contingencies such as time taken with supervisor and other technical difficulties.

Thus, the standard time for the job is = 3.2 standard minutes per 1000 slides. The standard time was then presented to the works director for approval. A copy of the standard time is then given to the works director, accountant, production planner, chief estimate, bonus clerk, and the departmental manager concerned, with the original study and a copy filed in the work study department for future reference.

Thus, the main steps to arrive at a standard time are as follows :

1. Analysis of the task to elements.

2. Rating and timing of elements to arrive at an average normal time and cast out the difference in individuals, skills, speed and effectiveness.

3. Provision of rest and contingencies allowances in order to arrive at the standard time.

So far, a discussion of the development of a manual direct labour standard has been presented; this represents the basis of the standardisation process in the group with slight variations in developing a machine controlled standard or a machine/man controlled standard.

In developing a machine controlled standard, the first step is to arrive at the fastest acceptable speed of the machine - the fastest speed acceptable which provides output in the accepted quality and without incurring any technical difficulties - through joint consultation with the departmental or production manager. The fastest acceptable speed will be taken to represent 133 performance of the standard.

As to man/machine standard, for each element the work study engineer decides as to who controls the element, the man or the machine, and then proceeds as if it is a machine standard or a manual one. If there is a crew on the machine, the controlling factor for each element, whether a particular man or the machine, is studied and evaluated.

This is how work study engineers arrived at a typical standard time through the most widely accepted procedure; stop watch studies in all the four factories. The next step in the analysis is to present the other procedure; the standard data estimating system, as it is widely used in factory 'D'.

Standard Data Estimation

In order to derive standard data, there must be standard times arrived at by stop watch procedure in the past. The main advantage of this procedure is to calculate time standards for a new job or machine from the existing information, without actually performing new stop watch studies, thus saving the time of the work study engineer.

Standard times can be estimated for machines as well as manual operations. The estimation process is based entirely on the available results of the already performed stop watch studies. It starts by analysing the studies of a full range of work or product types similar to the new job in order to separate all the variables and build data to give the standard time for the new job or machine.

For example, a new job similar to the direct labour standard illustrated before was ordered and the work study engineer was asked by the works director to provide a standard time for it. In this case standard times for similar jobs were available. So they were analysed to estimate the standard time for the new

job instead of performing new stop watch studies. The new job was then analysed to ten elements, according to the analysis of the old jobs, and the work study engineer's judgement as to whether this element will be needed for the new job. For this particular standard, eight jobs were analysed to build up the new standard as follows, taking element No.1 - take up 1000 slides from pallet to bench, as an example :

	Job No.1	Job No. 2 ...	Job No. 8
Normal time for Element No. 1	0.704	0.703 ...	0.707

Then, the average of the eight times was taken to represent the normal time per occasion for that particular element. In this case it was = 0.705 minutes for Element No. 1. This figure was treated as equivalent to 100 rating (1), and transferred to 133 rating to arrive at the select time which was .530 for Element No.1.

The number of variables were then decided. In this case, they were the number of slides across the web, which would be either 2, 3, 4, 5 or 6, depending on the available machines which provide the webs. So for this element the same time will be taken whatever the number of slides per web, but the frequency will differ according to the number of slides per web. If the standard frequency is 1000 slides, the web contains two slides, and the select time is 0.530 minutes to take up 500 webs of 2 slides each from pallet to bench, so the opeator will need to perform this element once each cycle, each 1000 slides. If the number of slides is 4, so the element needs only half the time of the two slides, because the operator will provide himself with 500 webs x 4 slides = 2000 slides, therefore the select time per 1000 slides will be :

$$= \frac{0.530}{2} = 0.265 \text{ minutes}$$

From this information, the engineer constructs a table and a formula for all the variables in this way :

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(1) Normal rating according to 100/133 scale.

No. of slides across the web	2	3	4	- - - - - - -
Select minutes @ 133 per 100 slides	0.530	0.353	0.265	- - - - - -

The formula is = $\frac{2 \times 0.530}{N \text{ (number of actual slides per web)}}$

After arriving at the select times needed for all the other elements, he then decides on the conditions to use this standard and on a rest and contingencies allowance. For this particular job, the condition was as follows :

"The standard data is suitable for use on certain kinds of machines' work, and for normal quality work only. Any exceptional quality standard would require a special study". The rest allowance was 21% and contingencies 3%.

In order to be able to use this information, for similar jobs with different variables, a multiplier of 165% (1) was used, of which 33% represents the incentive, 21% the rest allowance, and 3% the continegonies allowance.

As all the table values were divided by 133 in order to arrive at select times, they were again multiplied by 133 to arrive at normal times which represent normal rating. The main advantage of separating the multiplier from the select time, is that if the engineer decides to change the rest factor, incentive or contingencies allowances in the future, he can do so without disturbing the selected time as he needs only to change the multiplier in this case. However, the main disadvantage is that he has to take a representative average as a rest factor for all the elements, instead of giving allowance for each element separately.

The difference is a statistical one which amounts to the advantage of using weights in arriving at an average in the case of stop watch procedure, rather than a simple average in the case of the multiplier, and thus treating all the elements on the

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(1) The multiplier was arrived at through

$$1.33 \times 1.21 \times 1.03 = 1.65$$

same standing. However, the actual difference has proved to be very small, 20.8% in comparison to 21%, thus it could be regarded as insignificant.

Next, a separate standard time for each variable is arrived at separately to facilitate calculations and use by different clerks, (Chart No. IV.6). Each standard time is then presented to the works director for approval. A copy is issued to the works director, accountant, chief estimator, bonus clerk, and the departmental manager concerned with the original study and a copy filed in the work study department for future reference (Chart No. IV.7).

Some Differences between the Factories.

The main differences exist in the areas of developing standards, using them, and evaluating their reliability.

In developing standards, some differences occur in recording the standard methods, in setting machine standards, and in the extent of development of standards. As the first difference has been discussed fully, and the third in part previously, the discussion will be concentrated on the second and third differences.

As to the setting of machine standards, some adjustments are made in factory 'D' in particular cases. For example, if the machine is automatic or continuous running, and is manned by more than one person such that the machine will in all probability run when any one member is away, the personal rest factor will be much less than the usual rate. If the machine crew contained a rest member, four workers on the machine when three are sufficient, then no rest is allowed at all. This is a better treatment than in all the other factories, as the engineer considers each case on its merits.

ob: New Cigarette 10's slides | Quantity per Turn 20,000

o. slides per web 5 | pallet/bench 5 bundle quantity's 500

trip bits | Sand

Elements	1.33 select time per 1000 slides
1	0.202
2	"
3	"
4	"
5	"
6	"
7	"
8	"
9	"
10	"
Total minutes @ 133 rating	1.487
	x
Incentive, Rest factor & Contingencies multiplier	1.64
	=
Standard minutes value per 1000 slides	2.44
S.M. value per batch 20 x 2.44 =	49.00

W. S. E.

A TYPICAL STANDARD VALUE ISSUED TO THE OTHER DEPARTMENTS.

Chart No. IV.6

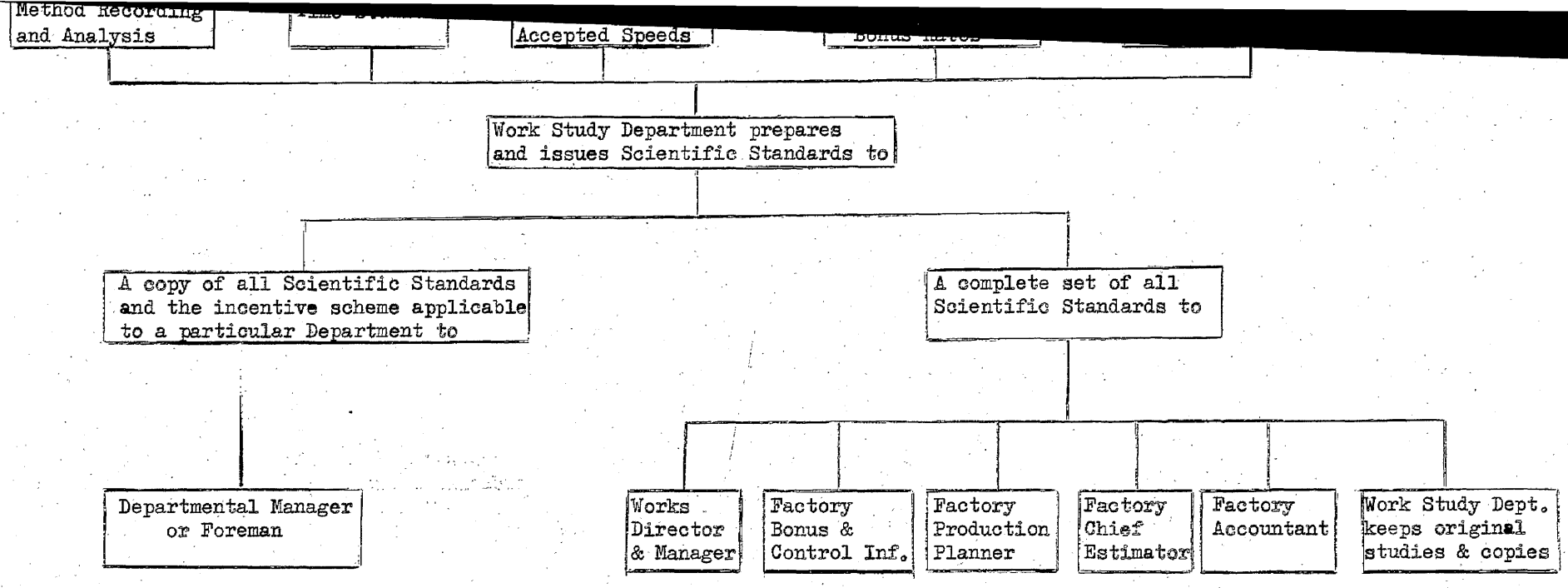

CHART NO. IV.7 WORK STUDY DEPARTMENT: INFORMATION FLOW CHART

The other main difference is the separate provision for machine adjustments and spoilage in factory 'D'. Machine adjustments and spoilage are taken as contingency elements in factories 'A', 'B' and 'C' whereas they are obtained either through random sampling or continuous production study in factory 'D', and are treated as a separate item in the multiplier which is more accurate than the treatment in the other factories as special studies are performed in each case instead of taking a simple average for contingencies.

As to the extent of development of standards, material standards and waste standards have not yet developed in factories 'C' and 'D'. The problem is more acute in factory 'C', as there are so many different grades of materials used by the factory. In fact there are a thousand different grades of paper and board for printing, in about sixty different categories grouped in writings, printings, and boards, with each grade obtainable in different sizes and substances (thickness).

The non-existence of materials and waste standards accounts for subjective estimation and ineffective control. However, subjectivity here is too limited, as the estimator has to measure the size of material needed and estimate the cost in the light of the price the factory would pay to a paper mill to get the material, and exercise a judgement as to the extent of expected waste, according to his experience.

This makes it extremely difficult for management to control waste which is the important element in controlling material which amounts to nearly 30% of the cost in factory 'C' and 60% in factory 'D'. Unless there is a standard for material waste for each process, no meaningful control could be exercised by management.

In factory 'C' the waste control is left to the accountant who checks the actual cost of each order with the estimated cost and through his practice of 'vetted cost', comparing the actual cost with the actual work done and judging according to his experience whether this is reasonable or not, and reporting unreasonable cost including material waste to the managing director, who starts a quering process with the warehouse and departmental managers. Thus the whole process is a subjective one and as it happens the real control is exercised by departmental managers, who use standards for material waste based on their experience and judgement.

In factory 'D' a report giving the actual waste incurred for each job is given to the departmental manager of the last manufacturing process, i.e. the tubing manager, which according to him, does not help in controlling waste as most of it happened in previous processes, and is already wasted, so he cannot do anything about it. So, unless a pre-determined scientific standard is given to the manager of each process as well as to the accountant, estimator, production planner and top managers, material waste cannot effectively be controlled.

Neither the 'vetted cost' practice, nor the control report help to control material waste as apart from subjectivity , they are after the event reporting and thus lack the first principle of control; establishing predetermined standards. So, the logical improvement here is the establishment of scientific standards for materials and waste in factories 'C' and 'D' in order to be a unified basis for estimation, production planning, and managerial planning and control through the budget.

As to the use of scientific standards, they become the basis for the incentive scheme, for calculating workers' bonus, for production planning, for estimating selling prices, and for

planning and controlling through the budget in all the factories except in factory 'D' as far as production planning and selling prices estimation are concerned.

In factory 'D' the production planner used different standards arrived at through calculating the average runs per hour for each machine, in the preceding six months for his appointment.(1) The estimator used his experience as the basis to arrive at the estimated time for a process or job. He, however, uses scientific standards in a very limited area; handwork. This practice leads to confusion, as the factory management is basing its budgets and control information on a different basis from the one used in the estimate, and from the one used inthe actual planning and scheduling of the job.

Standard data in this particular factory was not issued to the production planner and the estimator. The main drawback of this practice is the subjectivity of the estimate, thus leading to significant errors, and the inclusion of the last six months inefficiencies in the production planning's standards. Furthermore, the estimate in this factory is used as the basis of top management weekly and monthly control information. As such this practice leads to a residual error in the control information. Therefore, the logical improvement in the case of the estimate is the use of scientific standards.

As to the production planner, his scheduling could be wrong as it does not take care of the labour force's actual efficiency and their efficiency potential, and as the averages were calculated two and a half years ago, they are out of date as the new incentive scheme based on scientific standards has been introduced in many departments, thus changing the efficiency of labour.

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(1) He was appointed two and a half years before the case study; in 1961.

Furthermore, he cannot adjust his averages as it would take three days to calculate and he cannot afford to leave scheduling for three days. This situation can only be remedied through the use of scientific standards provided by the work study department. Again, the work study department can provide him with the actual efficiency achieved in the last period and the efficiency potential of the next period.

As to incentive schemes, these are only used if the representatives of the union concerned agree to the system and recommend the labour force to adopt it. If workers, after a meeting with the work study chief engineer, agree to the incentive scheme, the system is first tried for a trial period of twelve weeks, and then, if accepted by labour and management, the system starts to operate at any party's two weeks notice. Copies of the proposed scheme are given to the chapel, union representatives, works director and departmental manager, with a copy filed in the work study department.

After the trial period, a comparison sheet is issued by work study department, showing the results of the trial period as compared with the old scheme, to works director, and departmental manager, with the work study chief engineer's conclusions as to whether to adopt the scheme. If the new scheme is approved by management, union representatives and labour, it starts to operate, with further studies made from time to time at the request of the management or the chapel.

In each factory, there are at least two different incentive schemes; one is provided by the management consultant firm and is applied to some departments, the other is provided by the factory's work study department and is applied to other departments, with some departments still waiting the establishment of standards.

The main difference between the two schemes is that the management consultant firm has introduced a stabiliser in order to guard against the looseness of the standards. The stabiliser in factory 'C' encourages the inefficient worker whose actual performance is less than 133 by giving him half the difference with a maximum of 5%, and discourages the efficient worker whose actual performance is more than 133 by taking half the difference between his performance and the 133. The disadvantage of the stabiliser is that it admits the looseness of the standard and instead of solving this problem, it taxes the efficient and encourages the inefficient. Although the factory has realised this, they cannot get rid of it due to inefficient workers who vote against the decision . The logical solution is to change the upper half of the stabiliser; the condition which states that half of whatever in excess of 133 should be deducted from the bonus.

This condition should be cancelled as a first step, so this will not only encourage workers who are over 133 to be more efficient, but will also encourage the less efficient workers to be more efficient. The second step is to encourage workers who are achieving less than 133 to arrive at 133 through training as well as giving a bigger rate of bonus to achieve the 133, so that they would be paid more bonus than the stabiliser.

Although this mayseem to give the inefficient relatively more per unit than the efficient, which is the case with the stabiliser, this will work only for a limited period, and if the two steps are applied together the immediate effect will be that efficient people will get more in absolute terms so they will not have to apply the comparability consciousness as they are getting more anyway.

This is a satisfactory proposal which could be accepted by l the parties, as it does not take anything off the efficient workers in the short run, and therefore they will t vote against it and, as far as management is concerned, the oposal will increase efficiency in the short and long runs.

An argument which may be raised against the proposal is that anagement does not want to increase efficiency over 133% of he standard, as the excess will be taken as looseness in the tandard and not due to efficiency. The fallacy of this argument tems from the fact that the stabiliser does not convert a loose tandard to a tighter one, for although it admits looseness of he standard, it does not solve the problem. On the other hand, t gives an apparent solution in the very short run, and encourages inefficiencies in the long run.

Another kind of stabiliser used in hand work in factory 'A' is to fix the maximum bonus at 50%. This is another disincentive ; although it admits to the looseness of the standard, it encourages workers to arrive at a differential maximum production level. In fact, workers were observed writing the quantity of production in order not to exceed the 50% limit.

In another instance, labour performance arrived at 175% of the standard, which is a machine controlled one. The arguments against and for the looseness of the standard can be summarised as follows :

The works director thinks in terms of having the most efficient crew on the machine. The work study engineer thinks that it is loose but he cannot do anything in order not to stir labour trouble. The accountant thinks that the standard is extremely loose.

There are some elements of truth in all these arguments. The labour crew on the machine has proved to be highly efficient from two concrete comparisons. The first is made between shift A and shift B, which has proved that the average efficiency of

shift A is 175% in comparison with 150% for shift B. The second comparison was between the crew in factory 'A' and factory 'B' on the same machine, which has proved that in factory 'A', it is 175% in comparison with 145% for factory 'B'. Furthermore, all the responsible executives in factory 'B' agree that the crew in factory 'A' is more efficient than their own.

This however does not mean that the increase of 75% is all due to efficiency. If the standard is analysed according to the way it has been established, the maximum performance should be 133 + 12½% for contingencies and rest.

Assuming that 95% either way is a reasonable degree of accuracy, so management accepts a performance of 145½% ± 5%. The range of actual performance should then be between 140.5 and 150.5, and what is over that is due to the looseness of the standard.

Although the apparent problem here is the looseness of the standard, the deeper one is the industrial relations between management, labour and the union concerned. Any proposal which amounts to changing the standard with the effect of paying labour less bonus earnings is shortsighted as it is asking for real trouble between labour and management which does not conform with the company's policy.

At the other extreme, leaving the standard as it is means the non-tackling of the problem at all. The solution should then contain two elements. First, the standard should be as accurate as possible, and second the bonus rate should be increased to compensate for the loss resulting from correcting the standard. The main advantages of this proposal are that it will not lead executives to believe in the one extreme that they have the most efficient crew, or in the other extreme that they have a loose standard, as the proposed result would be to know what % represents efficiency or looseness.

The solution adopted by the company, however, was that a new study was carried on which tightened the old standard by 13.5% and at the same time raised the bonus rate to the wage rate level. This is only a partial adjustment, as the labour crew achieved 170% of the new standard, whereas their bonus rate was increased by 11.35%. The fact that the standard has been tightened by 13.5% and labour efficiency has only dropped by 5% means that labour worked harder to get the 8.5% difference, as well as it reveals that the crew was working at a maximum differential level on the old standard, and may be they are working at another differential level on the present standard.

The new payment policy did not solve the problem of looseness of standard, although at the same time it increased the cost of efficiency by 6%; the net increase in labour bonus payment on the new standard as compared with labour bonus payment on the old one.

So, the net effect of the new policy is as follows : whereas the standard was tightened by 13.5% labour performance was only dropped by 5%. the bonus rate was increased by 11.35% and thus resulted in a net increase of 6% in the cost of differential efficiency limit arrived at by the machine crew on the new standard as compared with the old one. Thus, these figures show that the new standard is still loose.

However, looseness of standards in a batch factory is almost inevitable because of the many variable factors in production which make it extremely difficult to maintain the standard conditions in the long run. This means that the nature of the production process warrants a different criterionto the revision of standards from the generally accepted one throughout the factories under study; that standards will only change in the case of a major mechanical change in the case of a machine or other major changes in the methods and conditions of production in other cases.

However, this argument does not apply to the 175% standard, for although it is a process in a batch factory, the operation itself is of mass production nature, and the product of the process can be considered as a standard one. This argument again does not apply to all batch factories in the same degree, in fact the variation in jobs and conditions is more apparent in the printing factories 'C' and 'D' than the corrugated cases factories 'A' and 'B'.

In an industry which is so different from others, the theory should be adjusted to suit the peculiar circumstances. The only way out is to account for all the variations by doing more studies at different times, (relatively longer periods) while the workers are doing different jobs.

Although this proposal sounds logical, the cost of such a scheme will not justify its results as it will lead to a different standard for each different variation in each job, which will result in a confusion to the users of the standard, whether for planning, control, bonus, or estimation. The only other alternative is to have an average as a standard. Accepting this argument, management has to accept the average with its statistical disadvantage; that a certain level of variation from the average is to be expected.

The remedy of this situation is to have a statistical significance test to prove the validity of the standards. These tests should be applied in the following stages of developing scientific standards:

1. In the establishment process, as it is now the number of studies are left completely to the work study engineer's judgement and experience. In factory 'C' the engineer takes an average of the time arrived at of each study, when the average stops to move, this is considered as the standard. The minimum in this factory is six continuous

studies. However, although the engineer claimed that on one standard in one of the factories in the group (not studied), 300 studies were performed by 5 engineers, the average number of studies in factory 'C' proved to be seven studies. Although this is more scientific than what is exercised in other factories, it is still less scientific than what is already available in statistics.

In the other factories, studies may take half an hour, an hour, a complete day or over three months to develop a standard, depending on the engineer's experience and judgement.

The number of studies needed to develop a standard should be done according to the highly developed statistical techniques now available (1), with the establishment of an accepted degree of accuracy.

2. Revision of standards should be a perpetual process, done periodically to ascertain in that the standards are still within the accepted levels of accuracy.

3. That once the significance test proves that the standard does not fall within the accepted levels of accuracy, new studies are to be performed to take care of the new variation and get the standard back to the accepted degree of accuracy.

4. That this method should be incorporated in the incentive agreement as it is the main objective basis for revision.

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(1) J.M.Aldridge, 'Statistical Procedures in Stop Watch Work Measurement", Journal of Industrial Engineering, Vol.VII, No.4, (July-August 1956), pp. 154-164.

(2) Elwood S.Buffa, Modern Production Management (New York: John Wiley & Sons, Inc., 1961) pp. 526-535.

5. Furthermore, the standard conditions observed during the study should be clearly stated, and any major variation in the standard conditions should warrant a new study, and this should be another condition accepted for standards' revision.

6. The use of standard estimating data techniques should be extended to other factories, and,

7. All the standards of the two schemes provided by the work study department and the management consultant firm should be coordinated in one scheme.

CONCLUSION

The different factories in the group use stop watch studies and standard data estimation as the main scientific tools to establish time standards. The time standards are used in the factories for scheduling production, selling prices estimation, as a basis for standard costing, wage incentive schemes, and as a basis for the budgetary planning and control process.

Standards could be set by past experience or personal judgement, but such practices are not accurate enough for the purpose of the factories under study.

On the whole, the process of setting standards in the factories studied is a clear application of scientific management.

As such, the process of establishment of scientific standards seems to advance the value of the budget since it advances its accuracy. Therefore, scientific standards as applied in these factories cannot possibly hinder managers' use of their budgetary information. On the contrary, they should advance such use.

CHAPTER V

THE FIRST CASE STUDY: FACTORY 'A'

The object of this chapter is to present the budgetary planning and control system in Factory 'A'. It also presents managers' use of the system, and the factors which affect use.

This chapter is divided into four sections as follows :

Section I presents the Environment of the Budgetary System

- Environmental Circumstances
- Industry's Cost Structure
- Ratio Analysis
- Main Problem Areas

Section II presents the Planning Stage:

- The Theoretical Model of Operational Budgets
- The Empirical System of Operational Budgets
- An Evaluation of the Empirical System

Section III presents the Control Stage :

- The Theoretical Model of Control
- The Empirical System of Control
- An Evaluation of the Empirical System

Section IV presents the findings concerning Managers' Use of Budgetary Information :

- Managers' Use of Budgetary Information
- Factors which affect use :
  - (a) Findings Based on Managers' Opinions
  - (b) Findings Based on Cross-checked Opinions and Facts.
- Conclusion.

SECTION I: ENVIRONMENT OF THE BUDGETARY SYSTEM

The object of this section is to present the different environmental circumstances to which the budgetary system is introduced. This apart from providing introductory information about the factory helps to indicate the effect of such environments on managers' use or otherwise of budgetary information.

A. Environmental Circumstances:

1. This is a corrugated cases factory which employes 500. The manufacturing process is a peculiar one. Although it must be defined as batch production, since the factory processes several hundred orders a week of different characteristics, it has some features of mass production owing to the high speed and repetitive nature of some machines, and even in respect of the corrugated board machine some resemblance to continuous flow.

2. The factory does not sell directly to consumers; it sells to other industries or farmers and as such provides a service to other industries.

3. As the factory does not deal with standard products, orders are obtained through the submission of estimates.

4. The main production processes are corrugating, printing, fittings, boxmaking and closing. The corrugating is the basic and most important process. Unlike factories 'C' and 'D' production departments are not as distinct; the works is considered as one unit or a large department. The works is under the works manager who has two factory managers as assistants (one for each factory) with a foreman for each process. However, the foremen unlike those in factories 'C' and 'D' neither have the name nor the status of a

departmental manager. The foremen's responsibility is to supervise his team to produce whatever the production planning department orders them to. Therefore it is not surprising to see that this feature among others conditions the system of budgeting and management information.

5. There are four main levels of management; group top management, factory top, senior and junior management (Chart V.1.) (foremen). At one time, there was a complete separation between the two top levels of management with the parent company looked upon as a financial company. In recent years this pattern is changing gradually to group control. However, the group's main services to the factory are finance and management information system. There is little interference in the actual running of the factory by the group. This is mainly due to :

a) The local managing director is a member of the parent board.

b) The sales director is a strong personality and has his sales force under effective control and as thus achieves higher performances.

c) Top local managers are highly educated and are of younger age than factories 'C' and 'D'. Their general policies are on the whole in accordance with that of a highly educated group management (through logical persuasion rather than pressure).

d) Unlike all the other factories in the group, this one has expanded greatly in the last few years. Production capacity has increased by the provision of a new production unit, and an expansion of the original one. The total production capacity has increased by 425% between 1959 and 1964. In the same period the company's share of the market has been doubled and its sales trebled

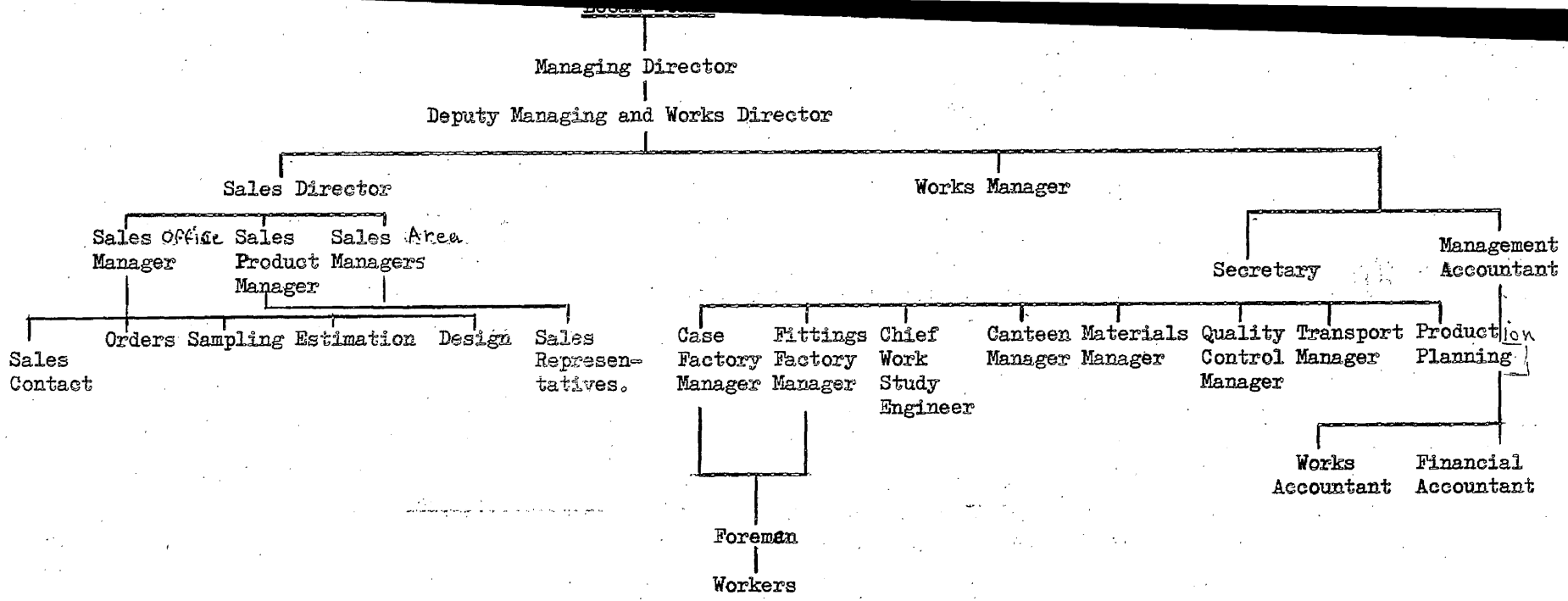

CHART No. V 1. ORGANISATION CHART FOR FACTORY "A".

(305% increase). However, the industry is an expanding one, the volume of production of principal packaging materials during 1962 exceeded that of 1954 by 40%, while that of manufacturing industry as a whole rose by only a quarter. At the same time, the demand for packaging appears to have increased one and a half times as rapidly as the rise in real wages and the volume of consumer expenditure. The corrugated cases market of 1962 has exceeded that of 1954 by 126%. Between 1959 and 1964 the market increased by 73.3%. However, as the factory has reached its maximum capacity, it is expected that the factory's share of the market will fall unless other factories are built.

e) To conclude, the de facto managers are the local top managers with group influence through the appointment of directors to the local board, and the pressure of group top managers (chairmen, group managing and group financial directors) on the local board.

6. The local company has a secretary and a management accountant who are highly qualified.

7. Local top management is scientifically minded. It does not only give a strong backing to the budgeting system but considers it as a subject of great importance in managing the company. The managing director claims that the company could never have doubled its share of the market without budgets.

B. <u>The Cost Structure of the Industry</u> is as follows :

Materials represent 60%. Labour 8%, and overheads 32%

a) As to material, the main item which can be controlled is waste. According to the factory's accounts, the waste ratio is a stable one. In comparison with the industry the ratio is better than the average firm but higher than the first quartile firm. In fact, the control of waste starts at the production planning process; the customer orders are analysed and sorted so that like grades of board can be produced together. Assorted widths are married together so as to deckle out of available rolls of paper; always trying to use the widest rolls possible for maximum output, but at the same time paying attention to the percentage of edge-trim waste. Material usage is controlled through scientific standards, whereas material price is fixed by agreement. The major material and the most expensive one is paper.

b) Since most of the labour is direct labour employed on the actual process, utilisation of machine time and of labour to a large extent go together. The use of indirect labour is not planned, but is left to shop floor supervision owing to continually changing needs and priorities. Therefore, the control process of direct labour is more important than that of indirect labour. As to labour rates these are controlled by agreements. As to labour utilisation this is in a sense controlled by production planning department through planning machine utilisation.

Emphasis in obtaining the maximum utilisation of machine running time is naturally given to the high capital cost machines, where downtime is most expensive. But all machines must be kept running as much as possible in order to maintain a balanced flow, and to fulfil delivery requirements.

As to labour efficiency, from previous analysis of scientific standards and actual performance, it seems that labour efficiency in this factory is higher than that of factory 'B' and can be argued that it is as efficient or even more than most firms in the industry. However, training and experience is an important factor in labour's efficiency in this factory.

Comparing the three shift crews, one finds that the first shift efficiency is higher than the second which in turn is higher than the third. The three shifts were introduced gradually one by one. Although factory 'B' is working on two shift basis, still the average efficiency index is higher in factory 'A' than in factory 'B'. One factor which supports efficiency here is the incentive system and the high rates of bonus.

As to other factors affecting labour cost such as overtime and the like, this is apart from being a policy decision it is a production planning responsibility shared with the works engineering department.

c) As the factory is relatively a new one, some of its machines are of high capital cost. This contributes to a high level of overhead expenditure. Overheads can be controlled in two ways: on the one hand by reducing it or keeping it at a frozen rate, and on the other hand through responsibility budgeting, at the same time keeping the volume of production as near maximum capacity as possible. However, although the two ways are important, the second is much more important and must be kept even at a higher cost.

Thus, in this case, cost matters a great deal and most of it can be controlled by the managers concerned.

C. Ratio Analysis:

Unlike factories 'C' and 'D' there are no management ratio schemes to indicate the relative position of the factory's profitability and cost with the industry. The only statistics available in this respect are those of production and material waste of the different factories in the industry.

As it is almost impossible to take the published accounts of the different factories as an alternative since these factories usually operate under holding-subsidiary relationship. Moreover, the members of each group do not necessarily belong to the same industry and according to the minimum requirements of the 1948 Companies Act, the detailed accounts of each factory are not published. Therefore, comparison on this basis is meaningless. As an alternative the financial director's report of 1962 will be used as the main basis to highlight the factory's problem areas.

D. Main Problem Area before putting the Management Information in 1962.

In 1962, the new financial director, being a management consultant before, studied the factory's problems and introduced the management information system, now in operation. His studies emphasised the following problem areas :

1. The return on capital employed was much less than what could be expected in this industry. It represented only 20% of the average return in the industry. It was the lowest return in comparison with other members of the group.

2. The number of times the capital employed turned over was much less than the other members of the group and than what could be expected in the industry. This indicated a sales problem.

3. % profit to sales was much less than could be expected in the industry (it was about 25% of the industry's average). The report concluded that the return on capital was too low and the two elements of sales and profits were also too low and the factory was working under capacity.

The report proceeded to explain that the remedy is dependent primarily on the speed at which sales can be increased. Both labour and facilities are capable of much greater output at marginal increased cost, and the present (1961/1962) level of turnover is only just about the break even mark, each additional £ of sales above the present level will significantly increase profit and employ the resources available to better purpose.

4. The report explained that non-variable cost has increased over recent years (up to 1961/1962) and must be closely examined. The problem is essentially that of factory capacity well in excess of the work load at present (1961/1962) placed on it. The report suggested that all possible help must be given to improve the sales position. This involved a review of sales prices in order to improve their competitive effect. The report suggested that the timing of their application should be left to the sales management. The reductions in price were due primarily to a reduction in the price of paper and improved shop floor efficiency.

As in this case where variable cost forms such a large part of total cost (68%), then sales price has a much greater effect on resulting profit than volume; a small drop in sales price will require a large increase in volume merely to maintain the same amount of profit. The reductions in sales prices have been based entirely on known savings of variable cost, the price of material, increased efficiency on shop floor, and less material waste.

5. Sales per £ of fixed assets are lower than what could be expected and than that of the group. This emphasised the under-utilisation of the plant.

To sum up, at that time the main problem areas were :

1. Sales
2. Under-utilisation of plant
3. Increased fixed costs
4. Low return on capital
5. Low profitability
6. Long credit terms

As mentioned in the report, the key to all problems is sales. However, sales is a multi-dimensional problem here. As this is a competitive market (with nearly thirty producers) in order to increase sales, the price must be dropped, but a small drop in price will require a large increase in volume merely to maintain the same amount of profit, being an industry with a large proportion of variable cost. Again, the factory's profitability is too low and this must be increased. Therefore, the key to the problem apart from sales is that any drop in sales price must be met from a drop in cost. This can be achieved from increased efficiency, less waste, lower purchasing prices and most of this can be achieved through an effective system of cost control. This has been proposed and implemented by the financial director.

As to the problem of increased fixed cost, this can be improved as a result of the increased sales and through better control.

Again, as the factory at that time was approaching the break-even point, a £ increase in sales will significantly increase profit and improve the utilisation problem. Thus, the proposal

of increasing sales even at a reduced selling price still stands at that time, as the non-variable cost would not increase in the same proportion as the increase in sales.

Thus increasing sales even at a reduced price would solve the under-capacity utilisation, the fixed cost problem, the low profitability and return problems providing that dropping the selling price comes primarily from a reduced cost.

This policy was carried on, the sales price was reduced, an effective system of following up debtors was introduced, and educating sales management to appreciate the problems involved was carried on through personal contact between the directors. A new system of management information was implemented and a constant reorganisation and expansion of the sales force on the basis of the sales performance figures was carried on, and a new top management team was appointed. As a result of all these factors and being in an expanding market, the sales problem developed from the biggest problem between 1957 and 1962 to a completely new position in 1963, 1964 and 1965. In 1966 budget the sales forecast was greater than the production forecast (which was based on a maximum capacity basis).

As to the problems of credit terms, this again although it is simpler than the sales problem, is a multi-dimensional problem. Long credit terms are used in this factory not only as an inducement to sell, and as such solves the sales problem in part, but also as a price for buying a storage capacity of certain customers in order to flatten the sales seasonal variation pattern. Another side of the problem is the interest paid to the bank in order to finance this credit, which in fact lowers the profitability of the factory.

Again offending customers will not only accentuate the sales problem, but also may affect the company's goodwill. The report recommended effective following up of slow paying debtors without offending them. This apparently is not enough. For one thing a distinction should be made between general customers and certain customers of certain products. These last customers are slow paying as a matter of practical necessity and as a result of company's policy to flatten out the seasonal variation pattern of certain products. Therefore they need a different criteria for control. The cost of long term credit must be weighed against the cost of storage and the cost of flattening the seasonal pattern. This should be the basis of control and following up in this case. As to the other customers, the ordinary following up is enough.

The factory reached its maximum potential throughput by the end of 1964 with the main machines working on a three shift basis.

In these circumstances increasing the overall efficiency of the plant becomes an important necessity, as this represents the only available expansion in the short run. In this context, expansion should be taken to mean improvement of the return of capital employed through higher efficiency and not just increase in the physical volume of sales or production; thus, efficient use of material and labour is of equal importance to a high level of machine performance.

Again, the factory must be more selective in the future to secure the most profitable orders and thus achieves higher gross margin. The problem of matching production mix to sales mix becomes important in these circumstances.

In fact, the future plans of the company are to be more selective in the short run on the one hand, in order to secure

higher profitability and to build other production units in the long run on the other, in order to maintain or even increase the factory's share of the market and expand its productive capacity.

To conclude, there seems to be no reason why a budgetary control system should not be working under these circumstances. In fact, such environmental circumstances render the application of budgetary control an essential necessity in this case.

CHAPTER V.

SECTION II: THE PLANNING STAGE

As mentioned before [1], budgeting is a means to formulate approved plans whereas budgetary control is a means to control business operations to achieve these plans. Thus, budgeting is a pre-requisite to budgetary control.

As such, budgetary control has two stages: planning, formulating a budget, and control, achieving it. The discussion of budgetary control systems in this and other factories will therefore follow the same pattern. This section is therefore devoted to the planning stage whereas the next discusses the control stage.

It must be emphasised, however, that the planning stage is only relevant to this study as a part of the control process. As one must plan in order to control, planning is therefore a pre-requisite for control. As such, planning is not taken in its absolute sense, but rather in its relative sense to control.

This section presents the planning stage in three parts. The first part constructs a theoretical model of what should have happened according to the general theory when this is adjusted to suit the particular circumstances, problems and objectives of the factory.[2] The second part presents the empirical system of what actually happened in the factory, and the third evaluates the empirical system in the light of the theoretical model.

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(1) Chapter II of this thesis, p. 12

(2) As there is no written procedure for budgets in the factory, it is rather difficult to provide a theoretical model in the strict sense. As an alternative, the general theory of operational budgeting is adjusted to suit the particular circumstances, problems and objectives of the factory will be used as a check on the validity of the empirical model.

A) Theoretical Budgeting Model.

There are three main budgeting approaches in general theory; the sales budget approach, the production capacity approach, and the profitability approach .

"Though there is much diversity in practical business life as to the methods of approach which can be followed, yet three schools of thought have developed ideas .. Three methods of approach indicate the main lines of development; the sales budget approach, the production capacity approach, and the profitability approach". (1) Moreover, the theory states that each factory's particular circumstances are best suited to a certain approach rather than the others.

Before discussing which theoretical approach is best suited to this factory, some of the main circumstances must be summed up.

The factory is an expanding one which developed to maximum capacity towards the middle of 1964. Moreover, sales volume although a problem between 1957-1962, started to improve in 1962, and in 1963 the factory's sales were slightly over budget. However, it must be emphasised that the factory's top management is highly educated and that the factory is operating in an expanding market. (2)

Being an expanding factory operating in an expanding market, last year's experience became less important than scientific tools of forecasting. However, the factory's management could benefit a great deal from last year's experience through evaluating actual performance, studying the reasons for failure, or success, to meet the budget, and in evaluating the potential market and the

(1) Megazy, A.M., Op.cit., p.103.
(2) The market expanded by 139.5% between 1954 and 1963, although packaging as a whole has grown one and half times as fast as industry generally. Corrugated cases have grown three times as fast as all manufacturing industry. Moreover, growth of the corrugated cases market is not directly related to underlying economic trends; thus during the quiet period of 1960/1962 where the index of industrial production rose from 114.6 to 115.4, corrugated cases production rose by 16.4% Furthermore, potential growth is considerably greater than present level.
(Conclusions on the market expansion is deduced from an economic study by the works director)

probable phase of the sales cycle. Moreover, studying last year's sales behaviour helps to establish the sales cyclical and seasonal variation patterns. Therefore, last year's performance could only be taken as a guide which needs further development through scientific analysis and cannot be taken as the only criterion to forecasting in these circumstances.

The sales budget approach, if adopted, would require a special study of the existing and potential markets, cyclical and seasonal variation patterns and the probable trends. This special study would give management the general framework of the sales budget.

Apart from this special study, the company has to go through a laborious job to survey the market. This apart from the general economic study of trends, gives specific programme of action as to how to arrive at and achieve a realistic budget. This specific survey could best be done by surveying the potential demand for the factory under each representative in each area. This, if compared with the general study of trends for each area, could help to evaluate the potential demand for the factory and whether the ratio of the factory's demand to the industry in each sales area correlates with the factory's sales policy of selectivity and gross margins. This could also help the sales management to plan its policy and actions to conform with the factory's main objectives made for each area's existing circumstances and problems. It could also help to plan the sales mix to conform with the production mix to secure the highest possible profitability. Moreover, it could work as an objective basis to judge the efficiency of performance of sales representatives.

This proposed method of general and specific surveys of the market, apart from being scientific, is most important in this factory, whatever approach is adopted by management. For one thing, the sales budget conditions all other budgets either wholly

or partially.

> "The estimation of the probable sales is the most difficult of any of the budget forecasts, and yet upon the accuracy of these figures depends the success of the entire budget system for a budget period." (1)

For another, the market's conditions affect sales management greatly in arriving at a budget; as a slight recession in 1963 may result in a conservative or over-cautious sales budget for 1964. So instead of acting on this tentative practice of feel of the market, what the proposed method does is to take an advantage of this experience and transfer it to a more tangible basis. It does not necessarily mean that the proposed method is right and depending on experience is wrong; all what it means is that at least the basis of the proposed method is more tangible and therefore authentical than the other alternatives. Also the proposed method is more accurate than just experience, and this is important as many executives claimed that sales forecasting in this industry is difficult and can never be accurate. Moreover, being a dynamic company in a dynamic market necessitates a progressive sales forecasting, as this is a dynamic market which is not directly related to the general economic trends. All these circumstances together then make the proposed method highly preferable to experience.

The next step is to discuss the procedure of the specific survey of the market. This can be simplified greatly if all members of the sales force participate in it. Although there is an alternative to it, having a specialist, apart from being an expensive alternative, it cannot ignore the experience and participation of the sales force. The sales expert (or market research man) can better concentrate on the general economic study of actual, potential markets and their trends. The specific study can best be left to the sales force or to a combination of both the specialist and the sales force.

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(1) Blocker, John G., and Weltmar, W.K. Cost Accounting, McGraw-Hill, Inc., New York, 1954. p. 136.

One way or another the sales force must participate in this specific study. Each sales representative is responsible for a territory which in part is under the responsibility of a sales area manager, and in turn each sales manager is responsible to the sales director for the performance of representatives in his area. Apart from this general organisation, there is one specialist (product) manager and another sales area manager who is also responsible for a certain product. This is thought to be more effective as these products have different problems than most of the other products of the company, and as they constitute an important share of the factory's sales. Each sales representative can survey his territory in order to edit, study and evaluate each of his customer orders. He can then go beyond this and study the probable orders in the territory and whether he can secure them or not, study the reasons, and feed them back to sales management. This could work as a feed-back at the planning stage which helps to plan the sales policy more realistically.

This territory forecast can then be presented to the sales area manager to check it and discuss it with his representatives and probably may adjust it as a result of the discussion. Then the area forecast could be presented to the sales director who can check and discuss each areas' forecast in the context of the company's policy and objectives.

In doing this, sales management could be guided by past information about the particular representative and his territory, the sales representative's, manager's and director's view and the objectives of the factory. The compiling of the results of this market survey for all areas would then give the sales management a realistic sales figure for the factory, sub divided by areas, territories and products. The information as to whether each representative can secure other orders in the territory could also help sales management to base its sales policy on realistic

tangible information. It would also give the factory a realistic forecast which can serve as a basis for a programme of action instead of giving the factory a general budget which does not mean much. To sum up, it would answer the question how to achieve the budget rather than just prepare a budget; the proposed method results in a specific programme of action where experience alone would result in just a forecast without an indication of how to achieve it.

The next step in planning would be to agree the sales estimate with production and general management, first to arrive at a balanced sales and production capacity, and second to agree whether the balanced capacity is within the objective of the factory and the group. Sales planning then could have been carried on as accurately as possible according to the proposed method. However, as sales planning is a difficult problem in this case, and whatever approach the factory adopts, it must plan sales as accurately as possible, and this could be facilitated a great deal through the proposed method.

However, the main disadvantage of the proposed method is that it is quite a laborious exercise as it would mean evaluating each potential order and the ability of the factory to secure it, taking into consideration that the factory has the largest sales force in the group and that each one of them will carry a small part of the exercise, it can be foreseen that it is not as difficult as assumed. Again the circumstances of the factory and the advantages of the method make it imperative for the factory's management to adopt it. Someone may criticise the method on the assumption that the factory has reached its maximum capacity and it is not worthwhile carrying on this laborious exercise. Even with maximum capacity the method still stands as the factory plans to be more selective and in this respect the method can help to plan the selectivity policy and establish a realistic and

specific programme of action for sales mix rather than a crude and general one. The factory also plans to build other productive units, this would involve spending a great deal of money and the method can help a great deal to prove on a realistic basis whether it is worthwhile doing so.

However, although the circumstances of the factory and the market necessitates the adoption of the proposed method, the factory's management did not choose this approach.

The main second approach which the factory could have followed is the production capacity. Briefly the approach entails the evaluation of actual and potential production capacity, and within the profitability objective of the factory the estimated production capacity could be arrived at and agreed with sales and general management, first to see whether the estimated capacity can be realised in sales, and second to see whether the agreed capacity coincides with the factory's objectives.

This approach would result in a laborious exercise of another kind, as the planner has to go through the production capacity unit by unit, machine by machine, centre by centre, edit and evaluate the actual and potential capacities , the main problems of each unit, the balancing of flow of work and the analysis of product mix. This is done in the context of the profitability objective, to balance the flow of work and to plan the most profitable and balanced product mix. This then has to be agreed with the sales management. However, although this approach would result in a realistic production budget, it would result in a vague and general sales budget unless the earlier proposed method of sales planning is adopted on the sales side.

Taking into consideration that the factory in recent years was building its capacity gradually until it approached maximum capacity of working three shifts per day on the major machines,

this approach becomes another necessity in this case. Apart from evaluating production capacity, planning production mix to achieve a balanced flow of work and most profitable mix becomes a very important exercise, especially as the factory approaches maximum capacity.

As mentioned before, in reaching maximum capacity the factory becomes more selective, as the market is still expanding, therefore planning production mix has to be realistic and specific rather than general and crude. This detailed study of productive capacity and mix could help to highlight certain anomalies and bottlenecks in the production capacity structure; that if certain machines are bought or certain machines are removed or certain machines are worked on more shifts, the production mix and balance of work could be improved.

In order to build a realistic forecast, however, discussions must take place with all concerned on the shop floor; production management and service departments. It must be emphasised that each step in the detailed planning of production capacity is important. The objective evaluation of actual capacity is important as it is the primary basis for calculations and discussions. Discussions with the work study engineer are important in evaluating past actual performance and in providing maximum theoretical, practical and standard capacities. Discussions with the production planner are important in evaluating actual performance, in viewing whether the achievement of maximum practical production capacity for each unit and for the factory, balancing the work through the factory, is feasible, and this could work as a check on departmental, work study and forecasted figures. Discussions with shop floor management are important as it would highlight shop floor problems, provide reasons for success or failure to meet their budgets, agree or disagree with the figures of work study

and production planner and see whether the potential capacity figures could be achieved. Discussions with senior works management are important as a check on shop floor management's and service departments' views.

The result of this laborious exercise would be to arrive at an agreed figure for actual and potential productive capacities of the units and the whole factory. This could then be agreed with sales and general management.

However, although this approach would give management an objective basis to evaluate production department's performance, unless coupled with a detailed sales planning as that mentioned earlier would result in a vague and general figure of the sales budget and sales mix which would not be achieved except by chance as no detailed plan of action has been given by sales management. More important still it would give a vague basis for judging the efficiency of performance of each sales representative as it is neither realistic nor specific.

Furthermore, if sales are regarded as cause and production as effect, then a careful planning of production capacity without a careful planning of sales would result in studying the effect and ignoring the cause of that effect; as however accurate the production plan is, it does not guarantee the accuracy of the sales budget, and considering that sales affects production and cost, then the production budget is bound to be partially inaccurate. This approach then partially defeats its own purpose. However, as will be seen later on, the factory's management partially adopts this approach.

The third approach which could be adopted is <u>profitability</u>. Top management could have determined a reasonable return on capital as a start to a serious and detailed planning on how to achieve this objective. This would entail a serious and detailed planning

of most aspects of the firm's activities; sales, production capacity and cost. This would be the most theoretical and objective approach expected from a highly educated management. It would provide a plan of action even on how to be more dynamic. However, unlike the other approaches which start from the base of the managerial pyramid up to the top, this approach starts by viewing the firm's activities, and problems, from the top, and initiating plans of action to follow them from the top. It also entails laborious and detailed planning exercises in four main aspects, profitability, production, sales, and cost. It also entails the provision of alternative master plans for different courses of action and different forecasted 'return indices, whatever approach is followed the principle of deciding or agreeing to a return on capital by top management must be adopted.

The third approach is the most useful one in the present prevailing circumstances; maximum capacity. The factory has reached its maximum production capacity for the major machines, so increase in volume is very limited. The other main ways of expansion are then to increase profitability and to freeze or decrease cost. It is not the volume of sales or production that matter any more; it is the quality of that volume that matters. This quality can be achieved by being more selective; mainly processing the most profitable and most suited orders to the factory's machines and through being more efficient by watching the cost side; through effective control to freeze or decrease cost.

The third approach can be adopted in conjunction with a detailed and serious planning of sales, production and cost. This approach stems from the state of development of the factory. Before and up to 1964, it was legitimate to adopt the production capacity approach as the factory was building its capacity gradually, but once the factory reached its full capacity, the

approach is no longer the best suited to the factory. It would be only if the company and its management are static. As this is not the case; the company and its management are dynamic, the only way in the short run to expand is through profitability and efficiency. In the long run, however, management could have other production units.

The application of this third approach, although it is a difficult challenge to management, would be the most objective and serious method of planning in this case. It would give top management the time to think about the factory's performance as a whole, as the factory's performance is summarised in the return index. By saying one index is so much and although this is reasonable in comparison with the industry, we should try to increase it to a certain level. This cannot be done merely through volume, so what can we do to achieve it. This then would work as a starting point to the production and sales management. Production management could start its careful and detailed planning of production and cost, taking the agreed index as the main criterion. Sales management at the same time could start its general and specific planning as explained before. Then production, sales and general management could have a meeting to coordinate the production and sales plans within the context of the objective; the agreed return index. Most important here is the planning of sales and production mix and cost, as these are the main sources of achieving the agreed return index under maximum capacity conditions.

Cost planning could be achieved through a study of the cost behaviour pattern based on past information and statistical analysis with the object of freezing or reducing the cost level in order to achieve the agreed return index. Although the major part of this could be done by the accountant, other departments must take this objective into consideration in planning their activities.

This approach then, apart from being the best suited to the factory's circumstances, entails the advantages of all three approaches. However, it means a serious and specific study of the company's performance as a whole to evaluate the actual return index and agree to the forecasted increase in the return, a detailed and careful planning of sales, production, mix, profitability and cost, a serious, precise and detailed process in almost all aspects of the factory's activities which would result in a realistic programme of action that is best suited to the objectives of the factory.

F. The Empirical System of Operational Budgeting.

This part will discuss the empirical system as to what actually happened in fact as compared with the theoretical model of what should have happened. The main representative sample of the empirical model is the 1964 budget. However, this will be supported by changes in the 1965 and 1966 budgets, also the evolution of the system since 1957 when the system actually started; the date when the factory was bought by the group.

a) The system of operational budgeting started in the factory in 1952; mainly because of the then financial director who introduced the system of budgetary control to all factories in the group. As the first stage of development one could gather (1) that the system was first introduced to plan profit, to provide information for management and to be used as a basis for control. Although the system developed gradually between 1957 and 1966, one could distinguish two main phases of development; the 1957-61 era and the period after 1962. 1962 is taken as the land-mark here for many reasons: most members of local top management were new; a new financial director was appointed who studied the factory's performance and system of management information and implemented a new system.

b) Before 1962, the budget was more or less an accountant model prepared by him to aid local management to plan profit and group top management to check the plan. The budget was a general and rough estimate of what the

(1) As the then financial director is no longer in the group, one can never know for sure why the system was put in the first place. However, other members of the accounting set-up are the only source available for evidence, although it is secondary source of evidence.

factory might expect to do next year. It was done mainly by the accountant with minimum consultation of local top management. At that time the accountant only produced a master plan with no detailed budgets. It was mainly based on whatever figure was given by local top management to produce next year. Although most of the top managers are no longer in the factory, interviews with all managers who were in the factory before and after 1962 ascertained that the budget was hopelessly out and managers did not take anynotice of it then.

c) In 1962, a new managing director, a new financial director, and a new production manager were appointed. This marked the first year for the factory to have a detailed production budget prepared by the new production manager which was taken as a basis for all other budgets. This year also marked the preparation of long term operational budgets of five years, the preparation of capital budgets by the new managing director, the preparation of balance sheet budgets, statement of planned movement of funds, and the introduction of a new system of marginal costing and management information by the new financial director. He also proposed the introduction of variable or flexible budgeting system but delayed its introduction until the original budgeting system stands on its own feet.

d) As there were no structural changes in the system between 1962 and 1966, only minor changes and developments took place, the 1964 budget gives a fair picture of the empirical system. The 1964 budget was prepared in this way:

1. A meeting between the local managing director, sales director and the then works director (at present deputy managing director) took place near the end of September 1963, to agree on a balanced sales and production figure for the factory. What actually happened was that the works director suggested a figure based on his study and calculation of the production capacity (at that time the factory was working on a two-shift basis, and management then decided to switch to a three-shift basis in 1964. However it was decided before then that this cannot be achieved until the middle of 1964 in order to deal with the ancillary problems of recruiting and training labour which was forecasted to be dealt with by the middle of 1964).

   The total figure which was suggested by the works director was accepted by the sales director as it was less than the figure in his mind by about 10%, and the figure was then approved by the managing director as the basis of the provisional budget. This meeting marked the end of the individual sales and production forecasting and the beginning of the master plan process.

2. As to the forecasting process, this comprised two separate plans: the sales forecast and the production forecast. The sales forecast was prepared in this way:

   Nearly a month before the meeting, the sales director asked each sales area manager to present a sales forecast for his area; each sales area manager in turn asked each of his sales representatives to present a sales forecast for his territory. The forecasts of the representatives are then given to the sales area manager

who discusses it with them and either agrees or disagrees with it and adjusts it accordingly. Each sales area manager then collates the individual forecasts of his representatives which constitute the area's forecast and it is then sent to the sales director. The sales director according to his own experience (being a sales representative himself in the industry for over thirty years) prepares a target for each representative based on his actual performance for the last eight months until August 1963 + one half of this in order to forecast the 1963 actual performance. He then adds a percentage to each sales representative and adds up the total figure. He then compares the total figure with another figure in his mind, which is an average for all representatives decided by the director on the basis of his experience, and multiplies this average by the number of sales representatives, which gives him a total expected figure. This total expected figure is then compared with the total figure of the sales forecast prepared by representatives and managers as a total check by the sales director. He then goes through the individual forecasts one by one and compares them with his own forecast of the individual's performance based on the above outlined equation (actual performance of representative up to August 1963 + half of it up to the end of December 1963 + any known contracts or adjustments = what is expected in 1963 + % increase forecasted for 1964 based on any known factors of the representative territory and the experience and knowledge of the sales director of the ability of each sales representative).

On the basis of these calculations and figures he agrees to the works director's figure or asks for more sales representatives, but he never disagrees with the works director's estimates.

Knowing the provisional budget figure as a result of the meeting withmanaging and works directors, he then calls for a sales conference of all sales area managers. In this conference he discusses with each of them the area forecast and the individual forecasts for each representative. He either accepts the forecasted figure if it coincides with his equation or is a little higher than it. If the figure is thought to be too high the figure is then lowered either by the director or adjusts the figures of the individual representative if it is lower than his equation. Unless the sales area manager can put a very good case for the low figure, it would be adjusted by the sales director. Each sales area manager then gives the agreed forecast to his representative. In theory if the representative does not like the figure he could appeal against it to the sales director, managing or even the chairman of the company, however, in practice this has never happened. This then concludes the sales forecast.

3. As to the production forecast, this was prepared by the works director. The key forecast for the production side is the corrugator. This forecast is calculated for each period in the year; the total of the individual periodic forecasts represents the total forecast of the corrugator.

For the first period in order to prepare it the following information must be available; number of weeks in the period, this is a standard adopted by the whole group:

normal available hours in the week, this is the weekly hours minus meal breaks ; the utilisation index; this is taken as 1963 average; and the square feet of corrugated paper produced per hour, this is taken as the average standard production prepared by the work study engineer adjusted according to the actual efficiency index of labour crew for 1963.

Knowing this information, the preparation of the corrugator's forecast becomes a straightforward arithmetic process. By multiplying the available hours per week by number of weeks in a period, the result is the available hours in the period. In turn this is multiplied by the utilisation index to give the hours expected to be spent on production. This in turn is multiplied by the production in terms of square feet per hour. The result is the production forecast of the corrugator in terms of square feet for the period.

The same process is prepared for the other eleven periods in the year. The only adjustments made were those of the available hours figure to take care of holidays and number of shifts and in the projected utilisation index for period six when the third shift is forecasted to start working and for the last three periods in the year; the utilisation index for these four periods was 12.5% less than the average utilisation index forecasted for the other eight periods; the reason for this was the beginning of the third shift. The total of the twelve production figures then represents the 1964 production forecast of the corrugator. This figure is then multiplied by a sales price per 1000 square feet of production of corrugated paper. The sales price figure is an average which is calculated on the basis of last year and experience.

The result of this is the forecasted sales value of the production. This sales value is the one proposed in the meeting by the works director for the provisional budget.

4. The next step after agreeing the provisional budget key figure of production was to hold another meeting between the managing director, the works director, Factory 'A' cost accountant, and factory 'B' cost accountant. (1)

In this meeting, the directors explained to the accountants the agreed figure, the forecasted production capacity, and when to start the third shift. What actually happened was that the managing director gave the accountants the agreed production figure in terms of sales value and asked them to prepare a rough master calculation for the two major factories 'A' and 'B'. (2)

Within several hours the accountants worked out a rough master forecast for the two factories, based on the figure suggested by the managing director.

These were rough calculations based on cumulatively calculated rates (based on cumulative actual performance up to period eight in 1963) with minor adjustments.

The material forecast was based on scientific standards provided by the work study engineer. As to labour, the known revised rates of pay of direct labour were applied.

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(1) In this meeting discussions of the forecast for the two factories took place; however only Factory 'A' will be discussed here. Factory B's discussions will be under Factory 'B'.

(2) as footnote (1)

The efficiency and utilisation indices were taken on the basis of last year's indices. The level of production in the other production centres was taken as that for 1963 with adjustment for estimated increases in the production level for 1964. Using these rates and information the accountants calculated the labour forecast.

The transport cost was based on the rates prevailing for 1963 with adjustment for the increased level of production. With regard to overheads, works, sales and administration, each item was considered in the light of 1963 present levels of expenditure and was adjusted to cover the increases in production.

At this stage, the expenditure items have not for the present purpose been agreed with the persons responsible. However, the report of the meeting mentioned that these items would be agreed before the final budgets were prepared. It was not expected that any alterations on these items would greatly affect the results.

The revenue forecast revealed a reduction of planned gross margin percentage for 1964 than that of the actual percentage of 1963. This was mainly due to the recent wage award (a higher hours rate) and the increased shift differentials.

The revenue forecast also indicated that the forecasted levels of profit and return on capital show an improvement on the 1963 actual performance. The directors (managing and works) accepted the forecasted revenue account figures.

5. The forecasted revenue account was then presented to the 1963 October board meeting, when after being approved it was taken to represent the 1964 provisional budget. Accountants were then asked to prepare the final budgets and present them for approval to the November board meeting.

This concluded the provisional budget stage and started the next stage: detailed forecasting on the basis of the approved provisional budget to provide the final detailed forecasts which if approved would be taken as the final budgets.

6. The final detailed forecasts entailed product mix, labour overhead, material, master, balance sheet, capital and long term forecasts.

7. <u>Product Mix Forecast</u>

As mentioned before the cornerstone of the budgeting system in the factory is the production forecast. In turn the cornerstone of this is the corrugator output forecast. This is the basis of the provisional budget and of the final one. The corrugator forecast, being approved as the basis of the provisional budget, becomes the final forecast.

As all paper has to be corrugated, this is the basic technical process. However, not all corrugated paper has to be printed and not all cases have fittings.

So the next step was to calculate the production capacity of the printing machine, to determine the proportion of corrugated paper which will be printed on these machines and to balance these two capacities.

The capacity of the printing machines is calculated in the same way as the capacity of the corrugator. The information needed is number of weeks in each period, hours available in a week (as 1963), utilisation index (as 1963), the standard production per hour adjusted to the actual efficiency of labour prevailing in 1963. Through a multiplication process, the available capacity for each printing machine was established.

As to the fittings forecast, the works director decides on a percentage of fitted work; this is determined in the light of past performance, experience and future policy. The capacity of the fittings machines are calculated in the same way.

The forecast of the corrugator minus the fittings (which represents all corrugated paper to be processed to cases whether printed or not) represents the raw material for closing machines. The capacity of the closing machines was determined on the same basis (1963). As a result of these calculations the capacity of the closing machines showed a smaller capacity than what is needed to process the work of the corrugator and the printers. Therefore, the works director suggested to increase the shift work on certain machines and to increase overtime on others. Through this arrangement the production capacity and mix were balanced. This then concluded the product mix forecast.

8. <u>Direct Labour Forecast</u>

Once the production capacity of the different machines and the mix have been forecasted, the direct labour forecasts for the machines and operations become a straightforward arithmetical calculation. The utilisation

and efficiency indices are known, the available hours, rates and bonus rates are also known.

Furthermore, whether a certain machine will be working on overtime or not and the extent of the overtime are also known. Through multiplication the direct labour forecasts for the major sections of the factory were determined. As mentioned before, indirect labour is less important in this factory and as such is considered as an item of the overhead forecasts.

9. Overhead Forecasts

The overhead forecasts were divided by responsibility to nine responsibility centres as follows :

a) Works Overheads

1. Corrugator overheads
2. Machine lines overheads
3. Fittings overheads
4. Factory administration overheads
5. Maintenance overheads
6. Welfare and canteen overheads

b) Transport

7. Transport and despatch cost

c) Selling

8. Selling overheads

d) Management and Administration

9. Management and administration expenses

Apart from transport which is considered as a direct cost in this factory, all the others are overheads.

Responsibility centres 1 and 2 are under a factory manager, responsibility 3 is under another factory manager (superintendent), responsibility 4 is under the works manager, 5 is under the chief works engineer, 6 the canteen manager, 7 the transport manager, 8 the sales director, and 9 the managing director.

All the overhead forecasts apart from the maintenance were prepared by the cost accountant on the basis of the 1963 actual figures and were adjusted according to responsible heads' comments. Each responsible head either agreed or adjusted the figure arrived at by the cost accountant. The works engineer, however, prepared his own budget because of structural changes in the department at the end of 1963. The then cost accountant claimed that had he prepared it, it would not have been as accurate as that of the works engineer because of these changes. The works director was the only one consulted on all the works overhead forecasts. He also prepared the transport forecast on the basis of the forecasted output and the available transport vehicles, with the balance to outside contractors. The rate used for outside contractors was that actually prevailing in 1963. As a result of the consultation process, the detailed forecasts differed from the provisional budget; works overheads were reduced by 1.8%, whereas management and selling overheads were increased by 6%. The consultation process concluded the overhead final forecasts.

10. <u>The Material Forecast</u>

The material forecast was based on material usage standards prepared by the work study engineer. The price is taken as the standard price adopted for 1963 (after having quotas from suppliers). Waste was taken as a standard percentage (the same standard as last year) of material cost.

As all paper has to be corrugated first, the basis of the material budget is the corrugator forecasted output. The standard, of 1000 square feet of corrugated paper needs so many tons of paper, that of the work study engineer adjusted for actual efficiency and waste (1963 actual figures). The division of the corrugator output by

the standard gave the needed tons of paper. This was repeated for each period in the year to give the material forecast for the sub-periods and the whole year. Other materials such as glue are estimated on the basis of glue needed for each ton of paper input, this was taken as the 1963 actual average.

Multiplying this by the standard price (the same standard of 1963) the forecasted cost of glue for the period is arrived at. Repeating this same process for each period gives the cost of glue for each period; adding these together gives the direct material forecast.

In addition to this the works director forecasts material on the basis of the corrugator output forecast for a long term of five years. However, this was not done in great detail; it was only done as a yearly figure in order to help the director plan purchases in advance. Most of the paper is imported, the yearly and long term forecasts help to plan the actual purchase of material on a large quantity basis and in a relatively long period. In fact all this helps in forming the actual contract of purchase with the supplier to the advantage of the factory. Again the material forecast was completely prepared by the works director.

11. The collation and coordination of all these detailed forecasts by the cost accountant gives the master forecast. Any other matters which arise but not provided for in the detailed forecasts were taken by the cost accountant on the actual rate of 1963. The cost accountant prepared a master forecast for the year sub-divided into periods taking into consideration the number of working days in a periodand the standard periods of the group.

12. On the basis of the yearly master forecast, the cost accountant in consultation with the managing and works directors prepared the five years long term revenue forecast. It was more general than the yearly forecast. It only took two hours to prepare and on simple progression basis to give a general indication of what is expected in the next five years in very broad terms.

13. On the basis of the master forecast the company's secretary prepares the yearly capital forecast and the yearly balance sheet. The capital budget was prepared in consultation with the managing director. The yearly forecast is one part of the long term capital forecast prepared by the managing director. The balance sheet was prepared by the secretary on three different bases. The fixed assets were forecasted on the basis of expansion forecast, consultation with managing director, known depreciation charge and expected sales. The forecast was prepared by quarters and on a unified basis for all the group. If we take item A for example, it is presented in this way: the actual until September 1963, expected in the last quarter for 1963, and forecasted for each quarter in 1964.

The current assets apart from cash were forecasted on the basis of sales weeks' targets. For example, debtors are so many sales weeks and stocks are so many s. and so on.

On the other side of the balance sheet, capital and general reserves were taken as that of 1963; the expected reserved profits are added; other provisions such as taxation and debtors are forecasted. Current liabilities were taken on the basis of so many sales weeks. The balance between the liabilities and assets side of the balance sheet represented the forecasted cash.

On the basis of this the planned movement of funds are forecast, in order to see what will be the needed funds and how will they be generated.

14. Expansion and new project forecasts were prepared by the managing director in consultation with works director, sales director and secretary.

15. All the final forecasts were presented to the October local board meeting where they were approved and sent to the December parent board meeting where they were approved and the final forecasts became the final approved budgets for 1964.

16. In 1965 and 1966 budgets were prepared mainly on the same lines.

G. Evaluation of the Empirical System

1. The main approach adopted by management is the production capacity of the factory. As this is an expanding company, this is the only logical approach to be adopted to suit the circumstances of the factory in 1964. (The factory was expanding its capacity between 1957 and 1964). Taking into consideration that the factory's share of the market although expanding is a small one and that the industry's market is expanding, these two factors make it even more logical to adopt the productive capacity approach.

2. The production budget is not calculated on the basis of maximum practical capacity; rather it is based on normal production capacity with minimum overtime, thus leaving overtime as a flexible media to be used later on if needed. This indicates two things: firstly that even at top level managers do like to be a litle on the loose side rather than preparing a tight budget; secondly, it also emphasises that managers even at the top resent to be under full control and like to have a degree of flexibility either to cover up if budgets are not achieved or to be over budget if the original budgets are achieved. However, taking into consideration that this is an expanding company, this practice could be allowed as every year they are having a new experience and it is wiser to approach this practically rather than aiming at higher targets which if not achieved would frustrate them.

This practice is a dangerous one in that it makes the budget figures unrealistic; it follows that variations are expected not because of trade conditions but because of the planning process. It also follows that budgets must be revised from time to time and a flexible budgeting approach has to be adopted.

Although the practice is right in its broad terms, its extent must be carefully watched and should be allowed only in very limited sense.

As a result of this practice, the budgeted sales figure was much less than that achieved in the first period of 1964 by almost 40%. (1) However, there were many reasons for that figure :

a) In 1963 there was a slight market recession, which improved in 1964.

b) It was more or less a deliberate policy by the sales director to try to attract customers in order to build up demand gradually so that by the middle of the year he could meet the expected increase in capacity.

c) This again is the director's policy in another sense as his forecasted target is usually higher than the budget by nearly 10%. Another evidence which supports the assumption that managers even at top level would prepare a rather easy budget to achieve, and that managers like to have a certain amount of flexibility and resent the policy of full control.

The director's reasons for adopting this practice are that if the sales budget equals exactly the sales target (the target being 10% higher than the budget) he would lose his flexibility of action, as he would have to accept most orders, but through having a sales target which is higher than the sales budget he can be more selective in choosing orders which are more profitable or most needed by the factory: also to keep a percentage or something up his sleeve in order to counterpart the wasted orders through non-suitable delivery, etc. or to cover up for other kinds of sales' waste. Again this would help him achieve his budget as he controls his sales force on the basis

(1) In September, 1965, the variance was 1.6%.

of the target and is expected only to achieve the sales budget which is less by 10%; an example of this is the 1963 budget, by the end of period eleven this actual performance is only 101% of the target, to him he just made it.

d) This tallies up with local directors policy of trying to improve on their budgets all the time so that they can keep their good relations with the parent company.

However, the practice also means that the directors take their budgets seriously and try to achieve them or even achieve higher performances (in this sense it is much better to have a loose budget which everybody tries to beat than having a tight budget which everybody takes no notice of).

This practice however freezes the original budget value at the time of comparisons with actual performance, as if the variance is a great one, e.g. 40%, this would make comparisons meaningless, for if sales vary by 40% almost all other budgets are bound to change. Therefore this practice leads to the logical conclusion that the budgets must be revised in order to make comparisons of budget and actual performances meaningful and realistic. In fact the flexible budget approach was proposed by the financial director in 1962, but was not applied until the end of 1964 on an experimental basis. It was followed in 1964 and abandoned altogether in 1965 and 1966. Planning of cost behaviour and variation was extremely tentative and unscientific. It was entirely done by agreement between cost accountant of factory 'A's and factory 'B's accountant, who decided in a meeting not to vary the budgets at all if sales vary within 5% and to vary some figures totally or partially with sales. It was an extremely tentative process of saying expense A varies while expense B would not, and so

on. However realising this, instead of studying degrees of variation and cost behaviour in a more systematic way through statistical analysis, they dropped the preparation of the variable budget. Again the variable budget was not flexible in its strict sense. It was prepared after the event (at the end of the period) on the basis of the actual variation in sales, and as such was an adjustment of the original budget to make it comparable with the actual performance. To sum up, it was not a flexible budget, it merely was an adjusted volume.

A logical improvement here is a study of cost behaviour and degrees of variation on a scientific basis. This is important to deal with the particular way the budget is prepared in the factory. It would work as a basis for sound cost control and it would help management take decisions more easily as the break-even point would be more accurately forecasted. It is most suited to the factory as the factory is working on marginal costing basis.

3. <u>Sales seasonal variation pattern</u> :

Another problem is that the factory sells packs to some producers of seasonal products such as farmers; this means that some of the factory's products are seasonal. This was not integrated in the 1964 budget at all, therefore the budget is partially unrealistic in this sense.

This, however, although it does not appear in the budget, was studied and was taken care of through sales policy in order to flatten the pattern in this way :

a) These products represent special problems and were put under a specialist (product manager).

b) A study of orders received and deliveries for each of the main products were carried out.

This study was summarised on graphs in order to show the variation and the peak periods.

As a result of this study, sales policy was changed in order to convince customers to order their packs before the peak periods, through cash inducements of discount and longer credit terms. However, as most of the seasonal producers are farmers who have available storage capacity which the factory does not have, the policy was changed in order to encourage farmers ordering their packs earlier than peak periods. As farmers get their income after selling their products (mainly once or at definite times a year) the factory has to give longer credit terms and a small discount to induce them buy well in advance. Although this costs the company the interest needed to finance the credit, it works out to flatten the seasonal variation partially. It also helps in solving the storage problem through buying farmers available storage capacity for longer credit terms, a small discount, and the interest paid to finance the credit. Thus, although the factory partially solves its seasonal problem, it actuates its credit term .

The logical improvement of the credit problem is balancing the cost, and if found worthwhile the factory could increase its storage capacity. If this is found expensive, then a separate control of this sector of debtors should be introduced, and this should be taken into consideration as one of

the factors which affect sales management's decision whether to accept the order and at what price?

The sales variation pattern is also partly solved through diversification of factory's products; thus arriving at achieving a steady flow of production and sales throughout the year.

In the 1964 budget however, sales variation pattern was completely ignored and the variation pattern was done on a number of working days in each period. Thus if there are 20 working days in period 3 and the same working days in period 9, the same sales would be forecasted and expected. The only consideration of the seasonal pattern in the budget was taken in forecasting the stock at the end of each period in the master budget.

However, this practice was developed to a complete recognition of the sales variation pattern in the sales budget in 1965, and 1966. This was done at the planning stage; each period's sales forecast was adjusted according to the seasonal pattern and each representative's sales target was adjusted accordingly.

4. Sales Cyclical Variation

Sales cyclical variation pattern is neither studied nor is taken care of in the budgets at all, although in this industry it is important to study this pattern as the trade conditions according to all executives fluctuate from year to year. They claim that sales were booming in 1964, conditions were bad in 1961 and 1962, there was a recession at the beginning of 1963 which improved by the end of the year, with another recession at the beginning of 1965.

The knowledge of this information after it happened is no good at all as it only works as a reason or an excuse as to why we did not achieve our budget. Unless the pattern for the market and the company is studied in a scientific way in advance, it will not help management to plan its policy to overcome it in any way. Also it would help to construct more accurate and realistic budgets, the budget would have been more accurate, and therefore makes comparisons more meaningful. It would also give executives more time to think and recommend how to deal with the situation long before it happens. This could easily be done as the information is partly there and the firm employs highly educated executives and accountants.

Another possibility is that it could be done at the industry level by the Federation, thus facilitating the exercise by giving each factory the results of economic forecasting of the market, thus helping each factory to forecast its own demand and change its policy according to the industry's planning model. However, this is not done, and it is unlikely to be done as those who influence the Federation are a limited number of producers who need to be convinced first in order to approve it.

The only practical alternative left is the one previously proposed; that it should be done by the firm. This is facilitated by the fact that the factory, at present, prepares a quarterly graph of the company's share of the market to directors; also the sales director reports to the board monthly on the trade conditions.

5. The surveying of the market by sales representatives is suggested by the theoretical model and although it is partly done through submission of individual targets by sales representatives, in fact it is not done intensively at all, although this particular process was originally meant to force the representative to survey his territory in a systematic way. Interviews proved that this is seldom done, thus the practice is usually to add a percentage on last year's figures. This in fact is encouraged by the practice that target forecasting only is needed as a general figure. The representative may say - my forecast for next year is £1 or £2. He does not go to any depth or detail beyond this in most circumstances. Thus he does not show how he will achieve it, what mix is available, what price is prevailing, how he stands relatively to other competitors in the territory, and so on. The logical improvement here would be to ask representatives to survey their territories in more detail and provide more detailed forecasts. This however reflects a training problem which could be overcome if the proposal is implemented gradually and if mentioned as a matter to be appreciated in sales conferences. Another proposal would be having a market research expert. As a matter of fact in 1965 the parent company appointed one. The most logical improvement would be the amalgamation of general market research by the expert and specific area surveys by the representative. Forcing representatives to go more intensively into their areas is a training process in itself. Although this could be criticised as wasting the representative's time, as a matter of fact it could help him plan his time more beneficially through concentrating on the most needed work by the factory.

6. This could also help to plan sales mix. As it stands, there is no planning of sales mix at all. The planning process is of production mix. Now, if representatives survey their territories,

this would give sales management the information long in advance to help them to plan sales mix in order to meet the production mix.

What actually happened was that the production planning feeds the sales department with the planned capacity of the next period in comparison with the available capacity. Sales management then instructed representatives to try to secure the desired mix. Had this been planned at the preparation stage of the budget it would have given sales management a longer time to adjust its sales policy, instruct the sales force on what is desirable, a realistic plan and programme of action to secure the production mix. This recommendation is even more important in the present circumstances of maximum capacity level. As has been mentioned before, the policy of the company becomes one of more selectivity and higher profitability; this would be mainly achieved through getting as near as possible to the production mix needed by the factory. This, apart from helping sales management long in advance to plan sales mix and direct sales effort to more profitable or needed products, could also work to increase the capacity of certain machines through overtime, shiftwork or new machines.

This could easily be done by the representative. Each representative through surveying his territory can say that the main customers in his area are so and so, potential customers are so and so, and that these customers need certain products. This, after being checked and rechecked by the sales area manager, sales director and market research expert, if collated would represent a realistic sales mix, and if compared with production mix, the two coordinated together would give a realistic mix forecast and how to achieve it; thus the budget would be realistic, precise, pinpointing, in sum a programme of action rather than a general figure which does not mean much, at no extra cost.

7. The budget is treated as a minimum programme of action volume-wise. This is evidenced from taking last year indices rather than trend values, from the sales director practice of having a budget less by 10% than his target, and from the works director's practice of planning only minimum overtime, and using it as a flexible policy to meet whatever is realised of the 10% over budget, planned by the sales director.

The fact that each of them knows what the other has budgeted for makes them support their own policies even further and take the other's approach partly as an excuse for the practice, partly to be able to achieve his budget and cover himself against unforeseen risks. Using the budget as a minimum makes it partially inacurrate, and as such lessens its value as a measure of efficiency of managerial performance, as it does not relate it directly to effort but to inaccuracy of preparation as well.

What is really needed in the next phase of maximum capacity is a switch in management's philosophy and approach from the easy one of volume to the most difficult one of efficiency. This, indeed, is the test management has to go through in the near future.

8. The material budget is a straightforward application of budgeting science. The direct labour budget is also a clear application of budgeting science apart from the practice of taking efficiency and utilisation indices as those of last year with minor adjustments. Taking the same indices as last year's is the minimum practical budget which could be achieved if the same efforts are to be exerted this year. However, since business is a dynamic concept, and this factory and its management are dynamic, one could reasonably expect a better efficiency and utilisation the longer is the experience of the company; thus the trend indices rather than the actual ones should be applied.

The efficiency index of 1963 was taken as the budgeted index for 1964. This is an exaggeration, as the third shift efficiency index could never be the same as the first or second shifts or as the average of both as the crew are less experienced. As to the utilisation index, it was taken as 87.5% of the 1963 index in period 6 when the third shift started. However, the same index of 1963 was taken for periods 7, 8 and 9, and then a reduction of 6.25% on the 1963 index was taken for the last three periods of the year. Again these indices are based on last year's figures and management experience, rather than trend values.

9. The production budget apart from being a clear application of scientific analysis takes into consideration the particular circumstances and problems of the factory in expanding its capacity gradually and in planning long in advance how to solve the related problem of labour.

However, a better approach which could have been adopted in the 1964 budget is the gradual increase of capacity through overtime up to the middle of the year when the third shift started. This has not been budgeted, although it was actually done, and furthermore it was intended by the directors to be done. This again is a sign which supports the assumption that the budget is taken as the minimum programme of action at the preparation stage. Apart from this the production budget is a clear application of budgeting science.

10. Overhead budgets were prepared in 1963 by the cost accountant, and adjusted by the responsible head concerned. The works engineer prepared his own budget. Although this involves the principle of consultation, the number of managers consulted is a small one, and mostly they are either top or senior managers. This is mainly due to the fact that this factory is considered as one unit rather than a sum of number of departments. It is also due to the fact that most of the cost structure

68% is variable. Also junior management is only concerned with the technical side of production and as such is far removed from the budgeting side.

However, as far as the technical side affects the budget, the foreman is held responsible for the technical variance without being involved at the preparation stage. It must be added that as the factory is working on standard costing and as such is using scientific standards, workers and foremen were consulted and were given the chance to agree or disagree with the standards prepared by the work study department.

11. As far as the production budget is concerned, consultation is concentrated around the very top manager; this process should be extended to other levels. As far as services budgets are concerned most managers concerned are consulted. This again should be extended to cover all managers concerned. As far as sales are concerned, however, the consultation process goes down to the representative level (the base of the managerial pyramid in the sales structure). This, although it has been supported by all levels in the organisation, is thought to be wrong in that representatives have no authority to reject the final figure adjusted by the sales director and is claimed to negate all favourable affects of participation. As will be seen later on, although this is true in principle, it is not true in extent in this case.

12. The procedure for preparing and compiling budgets in the factory is not outlined. Although the system has been working long enough to establish itself as a procedure, a written procedure is still beneficial as a basis for training and improvements in the system. Again there is no formal timetable.

13. Fixed assets budget is a clear application of scientific budgeting. As to current assets apart from cash, they were taken to represent certain numbers of sales weeks as targets. These were first suggested by the financial director in 1962. However, they have proved to be high targets, as a result, the secretary of the company based his calculations on more realistic targets for the 1964 budget.

Although high targets highlight inefficiencies of the control system of debtors and stock as they were first based on the industry's expected performance, they produce unrealistic budgets as they ignore the particular circumstances of the company, giving longer credit terms to some customers to flatten the seasonal pattern out. However, the other extreme of taking budgets on the basis of last year's actual figures does not help to measure efficiency of managerial performance or highlight inefficiencies. The trend is a happy compromise between the two extremes. However, for debtors two targets at least must be prepared, one for ordinary customers and the other for seasonal product customers.

14. Cash is taken as the balance on the forecasted balance sheet. It follows that unless each item on the balance sheet is planned accurately, the cash forecast could not be expected to be accurate, and being a balance any inaccuracies in other items would affect it.

15. Long term master budget is the least scientific of all budgets in the factory. However, it satisfies its object partly in that the group headquarters use it as a guide in planning the group long term capital and finance policies.

To sum up, apart from the criticisms outlined above, the budgeting process in this factory is a start of a clear and straightforward application of budgeting science.

However, although it is not as perfect as the theory, there seems to be no reason why managers should not use their budgetary information. On the contrary, it should support such use.

CHAPTER IV

SECTION III : THE CONTROL STAGE

In theory, budgetary control has two stages; planning and control. Planning is a means to formulate a budget whereas control is a means to achieve it. However, as the plan is at best an estimate or a projection of what may happen in the future, there must be deviations. The object of the control process then becomes keeping deviations under control. Being in a stage of control according to the general theory means that deviations are reasonable in extent and random in movement, so that the sum of deviations is ideally nil or too small.

Although the word reasonable is a general one, in fact it is the one most suited to the theory as its empirical interpretation must be in the light of the validity of the plan's standards and the particular circumstances of the factory. Thus, this necessitates the setting of tolerance limits or bands as a step in the control process. Moreover, the tolerance limits must be accepted by all managers concerned.

Deviations control as an application of the principle of management by exception becomes then management's responsibility whereas deviations' reporting becomes the accountant's responsibility.

Moreover, deviations' control can be implemented at two stages, the first is in trying to avoid deviations before they happen, and second in trying to minimize their effect after they happen through taking the appropriate action to lessen their effect or avoid it a ltogether in the future periods.

This section presents the control stage of the budgetary system in theory and practice from accountant's point of view as a reporter of actual performance in comparison with budget and from manager's point of view as acting on the information to achieve the budget. This is the main theme in evaluating the different forms of

budgetary information which report actual performance in comparison with budget. This is presented in three parts; a theoretical model, the empirical system and an evaluation of the empirical system.

A) THEORETICAL MODEL OF CONTROL:

The theoretical model stems from the theory of budgetary control as a control model when adjusted to suit the particular objectives, circumstances and problems of the factory.

The theory as a control model enables the objectives of an enterprise to be translated into a comprehensive plan, called the budget. Through responsibility budgeting, each manager is assigned a target which is a part of the plan.

Through comparative periodic reports, the principle of management by exception could be implemented. Thus, helping managers to concentrate on the main problem areas as indicated by the significant deviations. This in turn helps to achieve the plan which integrates the factory's objectives.

Therefore, the advantages of budgeting as a control model could be gained only if managers use their budgetary information. If managers choose not to use the system, this means that the factory has paid the cost of the system in full, but has not received its money's worth controlwise.

The control process then becomes achieving the budget through concentrating on the main problem areas and minimising significant deviations.

This necessitates the determination of tolerance limits or bands so that managers can objectively distinguish between significant and insignificant deviations. This is partly related to the planning stage since the budget is at best an estimate and as such contains a degree of inaccuracy. It follows that there must be tolerance bands or limits in order to account for the degree of inaccuracy naturally inherent in the forecasting process.

The tolerance bands or limits are also related to the control stage as an empirical interpretation of the word 'reasonable' used in defining the phrase "being in a state of control". Such interpretation must stem from the factory's objectives, must be determined in the light of the degree of accuracy of the budgetary standards, and must be accepted by all levels of management concerned with the control process.

Moreover, the logical interpretation of the theory necessitates that all managers who are responsible for achieving the budget should fully understand its implications in their day to day language. More important still is to appreciate the effort needed by each of them to achieve the budget, not only in financial terms but also in shop floor language. The extent of this interpretation depends largely on the educational status of the managers concerned.

In this particular factory, this is extremely important since the lower levels of production managers are poorly educated. This is also the case with sales managers. However, the interpretation service in this case is not needed since the sales budget is simple to understand. Moreover, sales managers have prepared it themselves. The interpretation service which is needed here concerns the cost rather than the sales budget, since the cost budget is not as simple to understand as the sales budget. As far as services managers are concerned, this only applies in a limited way since most of them are highly educated.

Since the accountant is highly qualified to understand budgets and financial terms, therefore it is his responsibility to make sure that each manager understands fully the implications of his budget.

Moreover, managers should understand it in their day to day language. As senior managers have high education and were trained in budgets, it follows that they do not need the interpretation service in the same way as lower levels of managers who are poorly educated.

In this case, it is no use providing them with budgetary information in financial terms since they are poorly educated, and as such cannot understand it. Therefore they need the interpretation service and if possible a translation of the financial terms into their day to day shop floor language or an intensive training or both. The simplest way out in the short run is the interpretation of budgetary financial terms in shop floor language by the accountant.

All these requirements, however, are primary requisites to the control process. As mentioned before, the control process becomes a concentration on the main problem areas and the minimization of significant deviations from the budget. This necessitates the communication of the problem areas and the significant deviations to the managers who are responsible for achieving the budget.

In theory, communicating the information to managers is the accountant's responsibility whereas acting on the information is the management's responsibility. The information must be relevant to their budgets. It must pinpoint the problem areas and the significant deviations, and must be understood by all users of the system. Thus, the accountant's role as an interpreter of the periodic information is needed at this stage. Moreover, the interpretation service must be suitable to the educational background of managers and must be provided to shop floor and senior managers alike.

The following step in the budgetary cycle is that managers should use their budgetary information as mentioned before; this is the key element behind the effectiveness of the system. For if managers choose not to use the information, this means that the factory has paid the cost of the system in full, but has not received any benefits from the system controlwise.

However, a distinction should be drawn here between shop floor and senior managers' use of the information. (1)

(1) For a definition of managers and use of budgetary information, see Appendix 'D', Volume II, p. 129.

Shop floor managers should use their budgetary information in order to achieve the budgeted performance, e.g. budgeted sales or production, and to watch or reduce their cost. Thus, they should use the information in two stages. First of all, after the planning stage, in trying to achieve the planned performance and watch their cost. As such they are trying to prevent deviations before they happen. Secondly, they must use it after they receive the periodic information through concentrating on the main problem areas, minimising the effect of the deviations and trying to prevent them in the next day, week or period. As such this is a control after the event, and as such amounts to an evaluation of the efforts exerted, in the first stage of use, to achieve the budget. Therefore, shop floor managers' use of the budgetary information involves a control process before and after the event.

It must be emphasised, however, that the control before the event is more effective than that which is exercised after the event since managers cannot control what the information actually conveys since it is past. It is rather effective to influence the present and the future events, so that on balance the budget is achieved by the end of the year within the tolerance limits.

The control process which is exercised after the event involves the investigation of the extent and significance of deviations, and the reasons for failure or success to achieve the budget. This still is an important process, since on the basis of such findings the managers take corrective action either to adjust the original budget, if conditions change which render it unachievable, or to counter-balance the effect of adverse variance in the following periods so that the budget is achieved by the end of the year. Thus, after the event control is important since it is an evaluation of the efforts exerted to achieve the budget before the event. Thus, control before and after the event are both necessary and complementary to each other.

Senior managers, on the other hand, can only use the information after the event as a basis to follow-up managers on significant deviations from the budget. Their use before the event is rather limited to direct and help shop floor managers to achieve their budgets.

However, another problem of interpretation appears at this stage. For if managers should use their budgets in accordance with this theoretical model, a logical requirement is that they must understand what it means to use the budget in accordance with the theory and its implications in order to apply it. This again is an accountant's responsibility.

Thus, to sum up, the accountant's responsibility towards control is to provide managers with information and to work as an interpreter to different levels of management in the different stages outlined earlier, whereas the manager's responsibility is to act on the information in order to achieve the budget and the senior manager's responsibility is to follow-up the manager on the significant deviations from the budget.

B) THE EMPIRICAL SYSTEM OF CONTROL:

The objectives and circumstances of the factory renders the application of an effective control system a necessity in this case, since the factory is a dynamic enterprise in a dynamic market with a dynamic management. Therefore, it must expand. This can only be achieved in the short run through more selectivity and through achieving higher degrees of efficiency. Thus:

> "Efficient use of material and labour is of equal importance to a high level of machine performance, although the importance of this aspect is not to be underrated and by improvements in these spheres of business activity together with the tightest control of expenditure, true expansion at the factory should be continued at a satisfactory rate". (1)

(1) The Factory's Management Accountant. Management Accounting and Estimating, unpublished report, 1964.

It is obvious that to achieve a higher degree of efficiency necessitates an effective system of control.

This part presents the control system of what actually happened in practice, in the two years under study, from the accountant's and managers' viewpoints. This is presented under the framework of the control information system, the control process of the overall performance of the factory and the major detailed controls of sales, production and services.

Framework of the Information System:

At present the system provides top management with monthly and quarterly information to help them control the overall performance of the factory, with detailed information provided to production, sales, and services managers. As such there is one general system of control with three other detailed systems.

Information about the overall performance of the factory is concentrated around top local and group top management. It is also provided to the works manager.

As to production managers, only managers are provided with information, whereas foremen do not get any information whatsoever. As far as the control system is concerned, they are not at all part of it.

As to senior managers, they are provided with information about their departmental cost once each period.

As to sales, the director and sales managers get periodic information about the sales performance of each sales representative in each area. As to sales cost information, this is provided to the sales director once each period.

This is a general introduction of the information provided to different managerial levels. As to the accountant's role as an interpreter, it has been ascertained that this service is only provided to top management.

Overall performance of Factory Information System:

Overall performance control of the factory is operating on monthly (periodic) and quarterly basis; however the two are complementary to each other since the monthly information is concerned with profit control whereas the quarterly information is concerned with capital. At the end of each period (4 or 5 weeks) a set of accounts is presented to management. This is comprised of the following statements :

1. Revenue statement.
2. Financial, production and sales reports.
3. Sales mix and profitability statement.
4. Variance analysis statement.
5. Overhead expenditure statements

1. The Revenue Statement

The revenue statement is the principal form, with all other forms as detailed supporting statements. This in itself is a highly developed approach of reporting to top management. A top manager is a busy man, therefore the way the information comes to him is as important as its contents.

The principal statement, revenue account, enables the top manager to see the whole picture and spot the problem areas at a glance. From here he can then turn to the more detailed information on the supporting statements.

Again, although on the face of it the statement looks complicated, in fact it presents a revenue account in the simplest of terms, and in an easy to understand form. The form used is the columnar one; which is the least technical of all forms. Apart from this the form has been constantly explained to top managers by the financial director and accountants on the board, in order to make sure that the information is used in the way intended by the system designer, the financial director. This is a very good practice which apart from helping management and accountants to get along together, amounts to a selling or canvassing campaign to secure the backing of managers; the users

of the form, thus giving the form a higher probability of use than otherwise would be the case.

The revenue account presents a summary of the operating position for the period concerned. It is a concise and condensed statement which shows the whole picture under the main headings. The statement is based on the marginal standard costing theory which has been adopted since 1962. Costs under this theory are divided into two groups; direct or variable costs which vary with sales or production volume, and non-variable or volume expenses which are policy expenses related to a certain capacity and do not vary in the same poroportion with sales or production volume.

The first group of costs, variable or direct costs, are compared with standard costs. These are mainly three items; direct material, direct labour and transport cost. The first two, direct material and labour, are based on scientific standards provided by the work study engineer for usage with the average prevailing in the current year as the monetary standards, material price and wage rates. Transport standards were taken on the basis of average cost prevailing in the current year.

The comparison of actual variable cost enables the distinction of excess cost (over or under standard); and through the detailed analysis on the supporting statement provides the main reasons of excess cost; be it the price, usage, or the wrong standard. Thus the form enables glancing problem areas here, studying the reasons in detail, as such it enables top managers to follow up subordinates as a basis for corrective action. Apart from this, excesses are also reported on the financial report, recommending the main problem areas, and follow up the top manager concerned to take the appropriate action.

The form also shows the standard gross margin and the effect of excess cost on that margin. As such the form enables to separate the responsibility of sales and production to main area problems. The standard gross margin compared with the budgeted gross margin is the responsibility of sales management as they decide on selling prices and selectivity; whereas the difference between standard margin before and after excess costs is the responsibility of production management as they are responsible for the efficient use of inputs. As such it enables pinpointing responsibility and implementing management by exception.

Thus the information helps the board to discuss the main problem area, to follow up the appropriate manager to take the appropriate action, and indeed to influence the board policy decisions. As such this part of the form achieves its triple objective.

The second group of expenditure (non variable or volume expenses) is grouped by functional responsibilities and compared with budget. Again the same principle of presenting the whole picture in a condensed form on the revenue account, with details on the accompanied statements, is adopted here. The form achieves its object in theory, but apart from volume and certain overheads, investigation(1) revealed a little actual control is exerted over them. The main control practised here is volume control. Top management appreciates (and this is rightly so to a great extent) that these expenses are volume expenses, and so volume is regarded of utmost importance and is watched carefully by top managament. In fact, the budgeted volume is always aimed at (to be achieved) even at a higher cost, at overtime rates.

(1) Investigation here involved a study of variance analysis, interviews with managers, with cross-checking interviews with accountants and senior managers. See Appendix 'D', Volume II, p. 129.

The form is self explanatory. It is prepared by the accountant and presented to top management two weeks after the period ends. The form compares periodic actual and budget, cumulative budget to date, with this and last year's cumulative actual figures.

The form is also pinpointing in that it shows cost of sales at standard variable cost; after excess cost has been written off, in order to distinguish and highlight sales responsibility; a practice which suits the factory's problems and organisation, and industry's circum stances. Sales responsibility is also highlighted by gross margin comparisons, unless production is not available at the right time and to the desired quality, as deviations of standard gross margin from budget indicates changes in sales mix and profitability which are the effect of sales' selectivity and pricing policies.

This part of the form is most importan t since it shows variations in sales volume and their effect. As mentioned before, volume has a great impact on the overall performance of the factory. This also considers the factory's problems as sales was considered one of the main problem areas at the time of introducing the information system, in 1962. Moreover, the form still meets the requirements of a completely changed sales position in 1964 and 1965. As the factory reached its full capacity, keeping budgeted sales volume, although ofutmost importance, becomes second in importance to sales mix and profitability, as the factory is operating under expanding market conditions. As the factory cannot increase its maximum capacity in the short run, the only expansion available becomes improving the return index through improving sales mix, sales prices and efficiency. Moreover, sales seasonal variation becomes more important under maximum capacity conditions in order to keep a steady flow of production during the whole year. Therefore, presentation of this part

of the information in this form becomes of the utmost value to top management under the present conditions.

To conclude, presentation of information here does not only coincide with the general theory but also highlights the main problem areas and the net effect of policy decisions on these areas. This then feeds back in order to assure the top manager that the policy taken was the right one or may suggest a change of policy. This also increases the top manager's interest in the information in order to provide reasons and arguments for his existing and proposed policies.

In fact, top managers were observed in the two years under the study, consulting the accountant about the figures all the time at the process of preparation of periodic accounts; they were also observed discussing with the accountant, the alternate decision on special areas using almost the information and the figures as the main criteria for their decisions. This in itself is an evidence of the highly information consciousness degree which top managers reached in this factory. These informal discussions between managers and the accountant, apart from being an education process in itself, work for deeper understanding of figures and information as well as it help to highlight certain deficiencies and recommend remedies not only on performance but also on the system of information itself.

This form also helps the group financial director to measure the accuracy of the original budget through measuring the degree of variation. It also helps him to report on the overall performance of the factory to the parent board and it also works as a basis for discussions in the local board meeting and as a basis for group control.

To sum up, sales information is given in condensed form to help present the general structure, and on a separate form in great detail. All direct costs in excess of standards are identified on supporting statements; grouped under main cost centres of corrugator, machine lines, and fittings which is in perfect agreement with the factory's technical production process and organisation, material waste being an important item in this industry is shown on a separate statement showing corrugator waste and process waste, other than that of the corrugator. All indirect shop floor cost; indirect labour, consumable stores, etc. and overhead expenditure is grouped under the heading of those managers primarily responsible for control of the cost. In the revenue account total expenditure only is shown but in practice each is supported by detailed statements which are distributed each period to those responsible.

The revenue account with a complete set of all the other supporting statements are presented periodically to local and group top management; chairmen, group and local managing directors, works director, sales director, financial director, works manager, secretary and management accountant. Individual overhead statements are only provided to the managers concerned.

To conclude, this form is highly developed accounting-wise, and most useful managerial-wise.

2. <u>The Financial, Sales and Production Reports</u>

Apart from the revenue statement, financial, sales and production reports are presented to top management to help explain the figures.

The financial report is prepared by the accountant who comments on the result s, highlights the main problem areas, and recommends certain actions, as such it is a reporting by exception. Moreover, the report is used by top managers as an introduction to the accounts which guide them to read the accounts.

The sales report, on the other hand, is prepared by the sales director from reports provided by him by the sales areas' manager. The report comments on the sales performance, the problems of the sales areas, the different degrees of competition and the development of the market. This report helps to explain the sales performance figures.

Finally, the production report is prepared by the works director who comments on production performance and efficiency. This in turn helps to explain the production figures.

3. Sales mix, volume, and profitability statement.

This is a detailed supporting statement to the revenue account. It shows the main product groups of the factory.

For each group, it presents the actual figures of sales, gross margin and profits in comparison with the budget for the period, and cumulatively for the periods to date. It also compares with last year's cumulative actual sales to date.

As this is a supporting statement to the revenue account, in fact it is used in the same pattern explained under the revenue statement.

4. Analysis of variance statement

The form presents a summary of cost variances and excess cost. For each direct cost, material, labour and transport, it presents an analysis of the excess cost and the reasons behind the constituent variances.

For each overhead, these are presented under the different cost centres for each responsibility.

As such, this form presents details of the variance and excess cost figures on the revenue statement, and also enables pinpointing responsibility, a pre-requisite for a corrective action.

Thus, this statement shows in great detail where the main problem areas and efficiencies lie. In fact, it is used as a detailed statement to the revenue account by top management.

5. Overhead expenditure statements

These are presented, one for each responsibility, as supporting detailed statements to the revenue account. As to the details of such statements, this will be discussed under the production and service managers' control information.

Quarterly Information

In addition to the periodic (monthly) information presented to top management, the following information is also given at the end of each quarter (three periods) :

1. Balance sheet statement
2. Movement of funds' statement
3. Graphs :
   (a) Return on capital employed
   (b) Z Chart

1. Balance Sheet Statement

Quarterly accounts serve two systems of control; factory control and group control. However, as capital is an important part of group control, quarterly information is more useful for group rather than factory control.

A balance sheet statement is presented to local and group top managers each quarter; two weeks after the quarter end. The statement is designed as follows :

a) It is presented in a columnar form and as such is not highly technical or difficult to understand.

b) It shows the net current assets position and the fixed assets position separately.

c) It includes summary totals only on the principal statement; balance sheet, with detailed breakdown on the supporting statements.

d) All figures on the balance sheet are compared with the budget and with the same quarter of last year's actual figures.

e) The form has been deliberately confined to essentials by the system designer (the financial director), in order to enable top managers to see the whole picture and concentrate on main problem areas. They can then turn up the supporting statements for greater detail.

Although the form was originally designed to help as a means of planning and control over capital by local and group top management, in fact it is used as such by the group financial director with little use by local top managers.

2. Movement of funds' statement

This is an essential part in the group financial control system. It presents the movement of funds with its two sides of sources and dispositions. The movement is the cumulative to-date and is compared with budgeted cumulative movement. Again, the statement has been confined to essentials with greater detail on the supporting statement of capital statistics. The form is mainly used by the group financial director as a basis for funds movement control and in order to plan cash resources ahead.

3. Capital Statistics Statement

This is the main supporting statement of the balance sheet and the movement of funds' statement. It presents a detailed breakdown of some of the important items on the balance sheet and the movement of funds statement. The form is divided into four parts :

a) Fixed assets
b) Manufacturing and trading cycle
c) Return on capital employed
d) Changes in working capital

a) Fixed Assets

This part presents a detailed breakdown of fixed assets figure on the balance sheet, and comparison of each item with budgeted capital expenditure approved by the local board. This comparison shows how effective control is being exercised.

b) Manufacturing and Trading Cycle

This part presents the constituent items of current assets, raw material, work in progress, finished goods and trade debtors. Comparison here is with target cost and number of sales weeks. This is important so as to control the amount of current capital. Targets were first introduced by the financial director in 1962 and they were changed in the 1964 budget by the secretary to more realistic figures on the basis of actual performance in 1963.

c) Return on Capital Employed

The figures in this section show how the index was derived and also make comparisons with previous two years ending on the same quarter date. Apart from being comparable figures they also show the movement of the trend of the return.

In the target column, figures are for the twelve months ended at the budget year end. The difference between moving annual total and target shows the change which must take place in the remaining periods of the current year if the budget is to be achieved. Thus the information here is not only historical, but it also suggests what should be done in the remaining part of the budget year to achieve the budget. This, apart from

providing useful information, gives a constructive proposal to achieve the budget. This although advances the theory of control from the passive side of criticism to the constructive side of proposing appropiate action; a principle which should be adhered to in the problem area of management - accountant relationship. It is this factor which makes one accountant a successful budget officer and another a complete failure. One criticism to the approach may be that the accountant in doing this is performing a management job, however this is not so as the accountant only indicates the extent of the action to be taken and leaves to the manager the directive and the way to take it. Again this would work as an indirect way of following up, since the direct way may fail because neither top nor shop floor managers would accept it. As such the accountant is providing a service in a consultative capacity to management. This also would help to change the image of the accountant from somebody who does not see but figures as a basis to report to top management to the more constructive image of a consultant who provides a constructive rather than historical service to all levels of management.

This part of the quarterly information is the most widely used by local as well as by group top managers.

d) Changes in Working Capital

These changes are clearly shown on the statement of movement of funds. Control of funds is important at all times, especially at group level. If funds

are not under effective control, it means that the group will borrow more than planned, and it will pay higher interest rates, thus achieving lower profitability and return on capital. Actual stock and debtors are compared with so many target sales weeks. The sales weeks criterion is used here to confirm how effective control is being exercised.

Just as important as showing actual changes, the statement helps the financial director to plan ahead the cash requirements, what the changes would be and whether these influences are agreed and understood by those persons responsible for control; a constant education process carried on by the financial director at board meetings

4. Quarterly Graphs

The graph shows :

a) Return on capital employed by quarters for six years up to 1965.

b) Each of the elements which make up the index over the same period; return from sales and the number of times the capital employed is turned over.

c) The comparison of actual return on capital employed at the end of the last five years with a standard return which can be expected for this type of business; determined by the

financial director on his experience and judgement. However, this standard ratio is not shown on the graph. A logical improvement would be to include it and verify it from time to time.

d) £ sales produced from each £ of fixed assets. Sales in this case is the moving annual total; whilst fixed assets are valued at cost and not written down value. The graph shows whether the return on capital employed is too low, too high, or reasonable, compared with the industry's expected (standard) return.

e) Z Chart

The graph compares budgeted sales with actual detailed figures for each period in the year under consideration, cumulative figures to date and the moving annual total. The graph's main object is to show sales trend at a glance in comparison with budget, expected trend, graphs are important but even more so in this factory as the top manager prefers graphs to figures as a result of his technical background.

To sum up, the quarterly information system helps management to control capital. As such it is complementary to the periodic information.

Major detailed control information systems

This part is divided into three sections; the first presents information provided to sales managers for control, whereas the second presents information provided to production managers, and the third presents the information provided to service managers.

1. Sales managers' information system

At the end of each period (month), the invoice section of the accounts department prepares and presents a sales performance statement to the sales director and other directors in the company. The statement presents for each sales area, each sales representative, and for the company, the actual sales figures and the percentage of this to the sales target (10% higher than the budget), the actual cumulative sales figures to date (from the beginning of the budget year) and the percentage of this to the cumulative target to date.

The form is divided into two parts; the first part presents the above mentioned information for orders received by the factory, whereas the second part presents the same information for sales deliveries already effected. The source of the information is the orders section in the sales department and the invoice section in the accounts department.

The main object of the form is to provide the sales director with information to enable him to achieve the sales budget by controlling the sales representatives' monthly performance.

The information is given to the sales director two weeks after the end of the period concerned. The information is very easy to understand and its form is very simple, concise, and informative. On one sheet of paper, the performances of the company, areas, and each sales representative are presented so that the sales director can see whether the company as a whole is achieving its target, and whether each area and

representative are achieving their targets. Thus it enables management to pinpoint problem areas in the least possible time. The sales director, after establishing the main problem area, can follow up the area manager, who in turn follows up the sales representative, as a basis for finding reasons and taking corrective action.

In fact, the information is used in this way, the director picks up the worse than target performances, decides according to his experience and judgement which are the important ones (a flexible tolerance limit based on the performance of all the sales force) and then writes to the sales area manager to ascertain the reasons and try to help the representative achieve his target.

If the representative's performance keeps going down with no apparent reason, the sales director follows up the representative himself and if by the end of the year (apart from the first year for new representatives) the representative's performance does not improve, the representative will be asked to leave the organisation.

The information is also used as a basis to develop and reorganise the sales force, through appointing more representatives in one area and less in another, and starting new areas, the sales force increased by 600% between 1957 and 1965.

The information is also used as one of the elements to determine the representative's bonus. As the company is more selective, figures are not necessarily related to the representative's effort, and the actual performance percentage is only taken as a preliminary basis to calculate bonus. In fact the bonus is determined on the following basis: % achievement of the budget + personal judgement of the director + other known factors about the representative or the area + representative's experience.

Thus, the information provided by this return is considered as the most important means of control by the sales director. This information apart from being used for control helps in other directions; such as reorganisation of the sales force, as a basis of managerial follow up, and partially as a basis to determine the representative's bonus.

The form, apart from being used too extensively, achieves its objective.

This, however, is a control system which works within two other control systems; group sales control and the overall performance of the company.

The group sales control system is based on this information. It is however presented to the group sales director and the sales director six weeks after the event; too late to be effective for local control.

However, it achieves its purpose of informing group top management of the company's sales position. It also facilitates comparison between all the companies in the group.

Apart from this form, a sales overhead statement is presented each period to the sales director. The statement presents the actual expenses for the different items, in comparison with the budget for the period and cumulatively for the periods to date.

The information is presented in a simple form, often and quick enough, as it is presented two weeks after the event and is very easy to understand.

As to it s use, it has been ascertained that the budget itself is not used, however, on the other hand the information is used occasionally by the top manager concerned in the sense that if one month shows a considerable adverse variance, he tries to cut expenses in the next month, and so on.

However, late in 1965, a systematic use of the form was attempted as a result of top management's follow up, as the actual cost was greatly over budget. As a result of this a spiral of requests to watch sales cost and to follow up on its basis went from top management; the board down to the representative level. Information as to sales cost was provided to each sales manager. The information shows the cost and expenses for each item and for each representative. As such it is pinpointing and thus enables corrective action.

This is an interesting experience which shows that as a result of top management's serious follow up could start almost on its own a control system.

This concludes the information provided to sales managers. The next step is to present the information provided to production managers.

2. Production Managers' information system

The system provides different levels of production managers with daily, weekly and periodic information. These will be discussed in the same order.

a) Daily Information

The only daily information presented to different levels of management is the daily corrugator report. As mentioned before, the corrugator is the basic and most important operation in the factory. This single process affects all other processes, therefore its control is imperative in this industry.

The return presents the following information: For each shift (the corrugator is running at maximum capacity of three shifts per day) it shows the available clock hours, the stopped time, the reasons for each stoppage and the actual hours spent on

productive work. It also shows the total result for all three shifts and the actual utilisation index for each shift and the average of all three shifts, which is the ratio of time spent on production to available clock hours.

The second section of the return gives the standard time allowed (calculated on the basis of scientific standard provided by the work study engineer) for the different materials produced, the total standard time for each shift and the average for the three shifts. It also shows the actual efficiency index for each shift and the average for all three shifts.

In order to evaluate the return, one must study the object of the return and see whether the information provided satisfies this object.

The main objects of the form are :

1. To enable management to control the corrugator crew's efficiency utilisation and output.
2. To be used as a basis for calculating bonus.
3. To be used as a basis for periodic accounts.

The source of information is the corrugator running report which is provided by the shift foreman and approved by the factory manager. The form is produced daily and presented to different levels of management the second day after the event. The information is provided to top and senior management, managing, works and sales directors, works manager, factory managers, production planner, work study engineer, company secretary, accountant, works accountant, with a copy kept with the bonus clerk.

The information is regular, easy to understand and enables comparison between the three different shifts. It also gives reasons for non-productive time and

facilitates pinpointing responsibilities; as to which shift is pulling the average index down through having low indices of utilisation and efficiency. However, the form does not show budgeted efficiency and utilisation indices. This makes it difficult for the manager to use the form, as he must have the indices either at the back of his mind or has to refer to the budget or to the weekly summaries. It is more useful to include the budgeted indices in the information in order to facilitiate comparisons between budget and actual performance.

Another criticism is that the form is given to many executives who theoretically and practically cannot do anything about them. As mentioned above, the return is used as a basis for bonus calculation, for periodic accounts and to control efficiency utilisation of corrugator crew. In order to achieve the first object, a copy must be kept with the bonus clerk, to achieve the second object, only one copy should be given to the works accountant, and to achieve object three, the shift foremen see it as they are the nearest level of management which can do something about it at the time of happening. The factory manager, works manager and works director should also get it in order to enable each of them to follow up the others down to the foreman level.

The works engineer should also get it in order to plan and control utilisation of the machine through minimising breakdown time, or even recommending renewals of certain parts of the machine or the whole machine if breakdown time is too much. However, the nearest level who gets the information is the factory manager. Any trouble on the shop floor is

reported to him when it happens and he follows it up then even before he gets the information. Practically speaking he can only follow up most of the time of one shift and a part of the second, but not the third shift. Following up here is done partly on the basis of informal communication and partly through the information. Providing the information to works director and manager is to ensure that they are in the picture and can follow up the factory manager to follow up the foreman. This is however rarely done as the efficiency of the crew is reasonable within the budgeted index. Following up is done at the weekly management meeting. However, it is based on the weekly rather than the daily information.

Other copies given to other top managers although of interest are of no use whatsoever, and are therefore redundant information. The proposed method of distribution corrects the situation. This information should be given daily to lower levels of management up to the works manager level, and to the works engineer to help him control utilisation of machines by minimising breakdown time; weekly information should be given to the works director and monthly information to the other directors. By doing this the information is more likely to be used by top levels as a basis for weekly and periodic following up.

To conclude, apart from these criticisms the form wholly achieves its first two objectives, as a basis of calculating bonus and periodic accounts, and to a small extent the third objective of control.

b) Weekly Information :

The weekly information presented to management is for all the machines in the factories, There is a form for each factory; case factory and fittings factory.

The case factory return shows for each week the available production and standard time for each machine in the factory. It also shows the actual efficiency and utilisation indices compared with budget. Apart from the corrugator, it gives the information for each shift on the machine line, thus helping comparisons between the different shifts on the same machine and pinpointing responsibility for low performance. Low performances can be picked out right away and can be traced by responsibility at the same time, and as such the return enables the implementation of the principles of management by exception.

The information gives a summary of the week's performance and as such it shows the trend which can be used as a basis to project monthly trends, and if it is not within the budget, top managers can follow up lower levels to take corrective action before the end of the period. A logical improvement is the inclusion of the actual cumulative index to date in the information.

The information is presented to the same levels as the daily return, and the same criticisms of its distribution still stand. Apart from this the form achieves its triplate objectives.

As to the form given to the fittings factory manager, it presents the same information with one drawback; it does not show budgeted indices of efficiency and utilisation. Apart from this, the form achieves its objectives.

Also the accounts department prepares weekly direct labour summaries for each production process and for the works. All the forms compare with budget, with the summary for the works presenting the variances divided into rate, utilisation and efficiency. All these forms help to show the trend since they present in the same returns the performance for each week, quarter and the year. Unlike the other form these are not presented to management; they are prepared mainly to help prepare the periodic accounts. However, they are available for management to see if they wish. A logical improvement here would be the presentation of each production process return to the foreman concerned; with the summary for the works to the factory managers, works manager, and works director.

c) Periodic (Monthly) Information

At the end of eachperiod (4 or 5 weeks) a periodic overhead statement for the corrugator machine lines and the fittings factory are presented to the factory manager concerned, the works manager, the works director and all members of top management.

These forms are intended to help management control production overhead cost and to be used by the accounts as a basis for the quarterly and yearly accounts.

The production overheads are grouped by responsibilities; the corrugator and machine lines centre are under the case factory manager whereas the fittings is under the fittings factory manager.

Each form presents the information under two main headings; salaries and wages, and expenses. It compares actual expenditure for each item with the

budget for the period and cumulatively for the periods to date.

Although the forms were intended to be used as a basis for control, it has been ascertained that managers do not use these forms for control at all.

It has also been ascertained that managers are not followed up on the basis of this information. For although there is a weekly meeting to discuss actual performance in comparison with budget as well as other technical matters, and this is regarded by top executives in the organisation as follow up, it has been ascertained that in fact the meeting amounts to a discussion of technical matters as well as the overall performance of the factory. As such it is of great value to managers as it puts them in the picture as to the profit and loss of the factory, but it is of no value whatsoever as a basis to follow up managers; in fact it is not a part of the control system as far as overheads are concerned. Therefore, follow up of overheads is virtually non-existent. In fact, it is left to the manager concerned to use his overhead budget and information or not. However, investigation proved that very little use is made of it mainly as a result of poor education and non-follow up.

To conclude, the monthly information provided although intended to control overheads, in fact is hardly used at all as a basis for control.

To sum up, the information provides production managers with daily and weekly information to help them control the efficiency and utilisation of labour on the different machines and production processes, and with periodic information to control overheads. In fact, very little use of the information is ascertained by shop floor

3. Service Managers' Information System.

The only form provided to service managers is the periodic overhead statement; this is identical with the periodic form presented to production managers.

As to its use, it has been ascertained that top managers do not follow up on the basis of the information at all. In fact, it is left to the manager concerned whether to use it or not. As investigation shows in some instances it was used by most managers on their initiative as the main basis for control; however, in a few cases it was not used at all.

Managers did not use the information in this case out of follow up as this was non existent. However, by comparison between the managers who use the information and those who do not, one finds out that high education is the main factor behind use. It was also found out that participation does not establish use, as some managers who participated did not use their budgets, whereas some managers who did not participate used theirs.

To conclude, service managers are provided with monthly information to control overheads. In fact this is used as the basis for control in most cases.

C) EVALUATION OF THE EMPIRICAL SYSTEM :

This is a highly developed system which incorporates the following advantages:

1. The system is designed to enable management control the overall performance of the factory as well as the departments - a practice which coincides with the general theory. As Professor Harold C.Edey (1) puts it:

"... the process of management is to a considerable degree the continuing study of different sections of the business, one by one, combined with overall studies of groups, sections and of the whole business. Sectional studies alone will not be conclusive for they do not take account of happenings elsewhere in the business. Overall studies alone will provide no conclusive evidence about which part of the business is responsible for what is happening. Both kinds of study are needed".

2. The system provides information to production managers, sales managers and services managers concerning their performance and cost. As such the system provides information about the main problem areas.

3. The information is compared with budget; as such it works as the basis of discussions for all managerial levels and the criterion of comparison and evaluation of actual performance.

4. The information gives first the whole picture in a summarised form. Then it details the constituent parts on different forms, thus helping managers first to see the whole picture, second to identify the main problem areas, and third to investigate these areas as a basis for corrective action. In a word, this form of presentation enables management by exception, thus saving the manager's time and informing him about his performance, and problems, in the least time.

(1) Harold C.Edey, op cit. p.18.

5. The information helps to show the trend; this is the most constructive piece of control information as it shows the manager, apart from historical information, what should be done to achieve his budget.

6. The information is pinpointing, and as such helps the manager to identify his problem areas at a glance.

7. The periodic financial report is a means of exceptional reporting in ordinary language.

8. The canvassing (selling) campaign by the financial director in introducing the management information system to top managers helped to secure their backing and so gives the system a higher probability of success.

9. The explanation of figures by accountants formally and informally helps top management to a deeper understanding of the figures and information, as such it gives the information a higher probability of success.

10. The basis of the information and costing system is the marginal standard costing, a highly developed approach which is most suited to the circumstances and set-up of the factory.

11. The regular and constant follow up by group and local top management supports the use of the system by factory top managers which in turn supports the use of the information by the lower levels of management. This suggests that the system is highly developed. However, the main criticisms are :

a) Although top managers are given an accountant's service, both formally and informally, there is no formal service or help beyond top management level. It is up to the manager concerned to initiate this by querying any items of the information. This assumes that all managers are highly budget and cost conscious, even so they must have this service for although top managers are highly cost and budget conscious, they still get the service and the service has proved to be beneficial to them.

b) Variable budgets and information are highly tentative. In the circumstances of this factory, a study of degree of cost behaviour and variation is most important since sales, the key factor in the budget and information, varies a great deal. Therefore a statistical analysis of cost behaviour and variation is imperative here.

c) Sales mix budgeting and information should be improved in order to suit the particular circumstances of the factory.

d) No limits or bands of tolerance as suggested by the theoretical model are adopted. In this case, this is extremely tentative as it is left to managers' experience and judgement.

To sum up, apart from the criticisms outlined above, this system compares favourably with the theory, and also takes into consideration the particular circumstances and problems of the factory.

Thus, the control system is reasonably satisfactory. As such it does not represent any major obstacle to prevent managers' from using the budgetary information. On the contrary, it should encourage such use.

SECTION IV
FINDINGS CONCERNING MANAGERS' USE OF BUDGETARY INFORMATION

So far, the organisation, the scientific standards, the environmental circumstances and problems of the factory budgetary planning and control systems have been studied, and although found not as perfect as the theory, they do not seem to present any major obstacles which prevents managers from using their budgetary information.

In order to identify the factors which support or hinder managers' use of the budgetary information, the findings of the case study were analysed from a different angle; looking at the manager himself and not the budget. As a result the factors behind managers' use were identified.

This part presents the findings of the case study which concerns managers' use or otherwise of the budgetary information. These findings came about as a result of investigating managers' use of their budgets and the factors which affect such use.

Each manager was taken as an individual case study (1) in himself in order to establish whether he used his budgetary information or not. Moreover, as a result of comparing each manager first with other managers who belong to the same control system - such as production, sales or services, and second with other managers who belong to the other control systems, the factors behind use or otherwise, as the case may be, were identified.

The basis of the findings is the manager's interview. However, this was cross-checked with the other interviews of the accountant and the senior manager. Moreover, the study of documents and departmental figures, and the personal observations of the research worker, provided other information to cross-check the managers' interviews. As a result of weighing these pieces of evidence together, managers' use of their budgets and the factors behind such use were identified.

(1) For a detailed discussion and illustration of the method of analysis adopted in establishing managers' use and the factors which affect it. see Appendix 'D', Volume II. p.129.

This was a time consuming process, however it was found to be the only reliable alternative to establish managers' use and the factors which affect it.

As a result of applying this method, it resulted in a considerable amount of detail. Because there is so much detail in the evidence and for clarity of presentation, the methodology of establishing use and the factors which affect it have been described in detail for Factory 'A'.(1) Exactly the same procedure was followed in the other factories. However, the results have been summarised in each case and presented in the text.

In presenting the findings a distinction is drawn between those findings which are based on managers' opinions alone and those which are based on an independent investigation by the research worker to cross-check managers' interview responses. This distinction is observed throughout the text and the appendices. The text presents a summary of these findings whereas the appendices (2) present the details which support these findings.

Managers' Use of Budgetary Information

The evidence (3) suggests that out of the twelve managers studied, three use their budgets in accordance with the theoretical model, six use their budgets in a limited sense, and three do not use their budgets at all. (Fig. V.1)

The twelve managers studied belong to the three major detailed control systems outlined in the last section. On the sales side, five managers were studied. The analysis of the evidence proved that only one of the managers uses both his sales and cost budgets in accordance with the theoretical model, whereas the other four managers use their sales budget only and do not use their cost budgets.

(1) Ibid, Volume II, p.129.

(2) Appendix 'C', Volume II, p. 85 for findings based on opinions alone and Appendix 'E', Volume II, p.156 for findings based on cross-checked opinions and facts.

(3) Appendix 'D', Volume II, p.129, 133, 147 & 155.

On the production side, four managers were studied. As a result it has been found that two managers use their production budget information and do not use their cost budget information. Moreover, the other two managers neither use their production nor their cost budgets.

On the services side, three managers were studied, As a result it has been found that two managers use their budgets in accordance with the theoretical model, whereas the third manager does not use his budget.

Thus, to conclude, most managers use the system. However, only a quarter of them use it in accordance with the theoretical model of use. Moreover, managers tend to use the most relevant budgets only since most of them use the production and sales budgets and do not use the cost budgets.

Factors which Affect Managers' Use

a) Findings based on managers' opinions alone

According to managers' views (1), it seems that the factors which support use in this case are participation in budget-setting, regarding the budget as practical, and senior manager's follow up.

Moreover, the evidence suggests that the manager's participation in budget-setting is very important since it improves his morale and status, and furthers his interest, backing and achievement of his budget. Moreover, it results in a practical budget. However, according to the findings of cross-checked opinions and facts, participation results in a little tight budget.

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(1) See Appendix 'C', Volume II, pp. 85 - 128.

On the other hand, the evidence seems to suggest that participation furthers the manager's interest in his own department and as such furthers his departmental-centredness. However, participation improves cooperation between the managers with the same status, and between the manager and his senior manager whereas it does not affect cooperation between the manager and his foremen and between the manager and the accountant.

Furthermore, the evidence suggests that the senior manager's follow up helps to communicate the departments' problems to the senior manager, and furthers the manager's use of his budgetary information. Moreover, follow up has a good effect on the manager's morale.

On the other hand, it seems that follow up does not affect cooperation between the managers with the same status, between the manager and his foremen, and between the manager and the accountant, whereas it improves cooperation between the manager and his senior manager.

b) Findings based on cross-checked opinions and facts

The analysis of the factors (1) which affect manager's use of their budgetary information suggests that of the three managers who use their budgets in accordance with the theoretical model, two use them mainly as a result of high education for although they are not followed up, as a result of an unfavourable attitude of the senior manager concerned in these budgets, they use their budgetary information. (Fig. V.1.)

However, one may argue that use in this case could be due to participation rather than education. In fact this is not true for although the two managers use their budgets,

(1) See Appendix 'D', Volume II, p. 147 and Appendix 'E', Volume II, p. 180.

only one of them has participated whereas the other was not even consulted on his budget. Moreover, another comparison between the three managers who belong to the same system of control shows that out of the three, two use their budgets and one does not. Also, that two have been consulted and one has not. As a result of relating use to participation, it has been found that although two managers have participated only one uses his budget and that although the third did not participate, he still used his budget. Thus, use here cannot logically be due to participation.

As to the third manager who uses his budget in accordance with the theory, it has been found that he uses his budget mainly as a result of senior manager's follow up, for although he is poorly educated, he uses his budget. Thus his use cannot be logically due to high education. Moreover, if the same manager is compared in the two years under the study, it becomes apparent that his use is mainly due to follow up and not participation. In the first year under the study, the manager concerned used only the most relevant budget to his job and did not use the less relevant budget. However, he participated in the most relevant budget and did not participate in the less relevant one. So, on the face of it, the evidence seems to suggest that the manager's use here is mainly due to his participation in budget-setting. This, however, is not true since in the second year of the study, the same manager used the less relevant budget although he did not participate in its preparation. In fact, the only factor which has changed is that in the first year the manager concerned was not followed up on the less relevant budget whereas in the second year he was followed up on the less relevant budget. Therefore, manager's use here is mainly due to senior managar's follow up.

As to the other six managers who make a limited use of their information, the analysis of the evidence suggests that

one manager uses it as a result of high education, another manager as a result of both high education and follow up, with the other four using it as a result of follow up. In the first case, the manager concerned used his most relevant budget only as he thinks that this is the most important. In the second case, the manager concerned used his most relevant budget only partly as a result of this attitude and partly as a result of follow up. As to the other four managers, although they are poorly educated, they make a limited use of their information as a result of follow up. In fact, they only use those parts of the information which are followed up by their senior managers.

Thus, managers in this case use their budgets mainly as a result of high education, or senior management's follow up, or both.

As to the three managers who do not use their budgets, it has been ascertained that two of them do not use them as a result of poor education, for although they are followed up on their budgets, they use their experience rather than the information for control, as the managers concerned are poorly educated. As to the third manager, he in fact does not use his budget as a result of non-follow up. However, by comparison of the same manager in the two years under study, it has been found out that participation in budget setting achives deeper understanding of the information; for in the first year under the study the manager concerned did not participate in budget-setting and the interview proved that he does not understand his information. In the second year, however, all what changed was that he participated in setting his budget, and the interview proved that he had a better understanding of the information than the year before. Therefore, although his non-use in the first year may be related to poor education, non-follow-up and non-participation, in the second

year however, his use may only be attributed to non-follow up as he participated and this in effect improved his knowledge of his budget. Moreover, this suggests that participation by itself does not establish use.

Therefore, managers in this case do not use their budgets as a result of non-follow up or poor education.

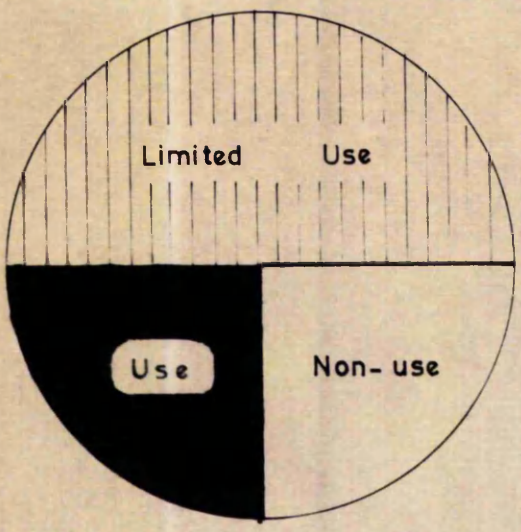
As to the other supporting factors, those which do not by themselves establish use but support it, in this case these are: participation in budget setting, long experience in budgets, regarding the budget as relevant, accountant's role as interpreter, and incentive in terms of reward and security of the job.

However, as to the accountant's role as an interpreter, it must be emphasised that this service is only provided to senior and top management only. In fact, it is not provided to shop floor managers, those who most need it as they are poorly educated. Moreover, foremen do not come to the budgetary system at all, and as such this limits the use and value of the system. The logical improvements in this case would be if the accountant provides the interpretation service to shop floor managers and foremen be trained to understand and use the information. In this case a simplified form must be used. Furthermore, as to the managers who do not use the system since the main reasons are poor education and non-follow up, this in itself suggests the remedy for the problem.

Conclusion

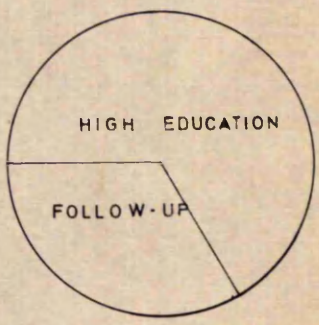
To conclude, the findings of this case suggest that managers use their budgetary information mainly as a result of high education, follow up, or both. Furthermore, the results suggest that participation by itself does not establish use.

This concludes the first case study. Thereafter the same method of analysis and presentation is adopted for Factory 'B', 'C' and 'D'.

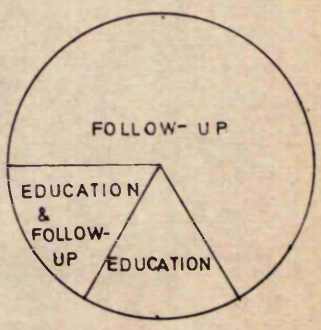


EXTENT OF USE

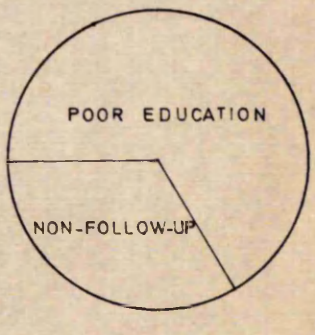
REASONS BEHIND USE



REASONS BEHIND LIMITED USE



REASONS BEHIND NON-USE



.V.1. EXTENT AND REASONS FOR MANAGERS' USE OF BUDGETARY INFORMATION IN FACTORY "A"

CHAPTER VI

THE SECOND CASE STUDY: FACTORY 'B'

The object of this chapter is to present the budgetary planning and control system in Factory 'B'. It also presents managers' use of the system and the factors which affect use.

This chapter is divided into four sections as follows :

SECTION I: presents the Environment of the Budgetary System :

- Environmental Circumstances
- The Cost Structure of the Industry
- Ratio Analysis
- Main Problem Areas

SECTION II: presents the Planning Stage :

- The Theoretical Model of Operational Budgets
- The Empirical System of Operational Budgets
- An Evaluation of the Empirical System

SECTION III: presents the Control Stage :

- The Theoretical Model of Control
- The Empirical System of Control
- An Evaluation of the Empirical System

SECTION IV : presents the Findings Concerning Managers' Use of Budgetary Information :

- Managers' Use of Budgetary Information
- Factors which affect use :
  - (a) Findings Based on Managers' Opinions
  - (b) Findings Based on Cross-checked Opinions and Facts.

- Conclusion.

CHAPTER VI

SECTION I: THE ENVIRONMENT OF THE BUDGETARY SYSTEM

The object of this section is to present the environmental circumstances to which the system of budgetary planning and control was introduced.

A. Environmental Circumstances:

1. Although the two factories 'A' and 'B' belong to one company, and are engaged in the same industry, factory 'B' is presented as a separate case study since its budgetary planning and control processes are different from those of factory 'A'.

2. Factory 'B' is also involved in the production of corrugated cases, but its products are heavier than those of Factory 'A'. The factory's board corrugating machine is slower than of Factory 'A's and as such is best suited to produce heavier products.

3. Although the manufacturing process is defined as batch production, as the factory processes several hundred orders a week of different characteristics, it has some features of mass production owing to the repetitive nature of some machines, and in respect of the corrugated board machine, some resemblance to continuous flow.

4. The factory does not sell directly to consumers; it sells to other industries or farmers, and so it provides a service to other industries.

5. As the factory does not deal with standard products, orders are obtained through the submission of estimates.

6. The main production processes are: corrugating, fittings, boxmaking and closing. The works is considered as one unit or a large department, and is under the works manager who has a works superintendent as his assistant with a foreman for each process. However, foremen , unlike the set -up of factories 'C' and 'D', neither have the name nor the status of a departmental manager. The foreman's responsibility is to supervise his team to produce whatever the production planning

department orders them to. Therefore it is not surprising to see that this feature, among others, conditions the system of budgeting and management information.

7. This is a relatively new factory in the group, which started production in 1960. The factory is one of company 'A's main plants and is under the same company board as factory 'A'. However, it is smaller than factory 'A' since it employs 200.

8. There are five main levels of management: group top management, local top management, factory top, senior and junior management foremen. (Chart VI.1.)

9. The factory is under the direction of a general manager who is a director of Company 'A' and a member of its board. Since 1965 he reports directly to the deputy managing director whereas in 1964 he used to report directly to the managing director. This has helped to get factory 'B' under closer control of company 'A's top management. Before 1965 the factory was considered as a separate unit, and in a sense rival to Factory 'A'. However, in 1965 the company's works director was promoted to a deputy managing director in order to get Factory 'B' under his closer control, under the closer control of Company 'A's top management.

10. In 1965, as a result of bringing the factory under closer control of company 'A's top management, the factory's production policy changed structurally from producing all kinds of products to a concentration on the products which the factory is most suited to produce; heavier products.

11. Although in theory it is assumed that heavier products secure higher rates of profitability, the factory is operating at a loss and is only occasionally profitable.

12. The factory is operating in an expanding industry; the volume of production of principal packaging materials during 1962 exceeded that of 1954 by 40% while that of the manufacturing industry as a whole rose by only a quarter. At the same time, the demand for packaging appears to have increased one and a

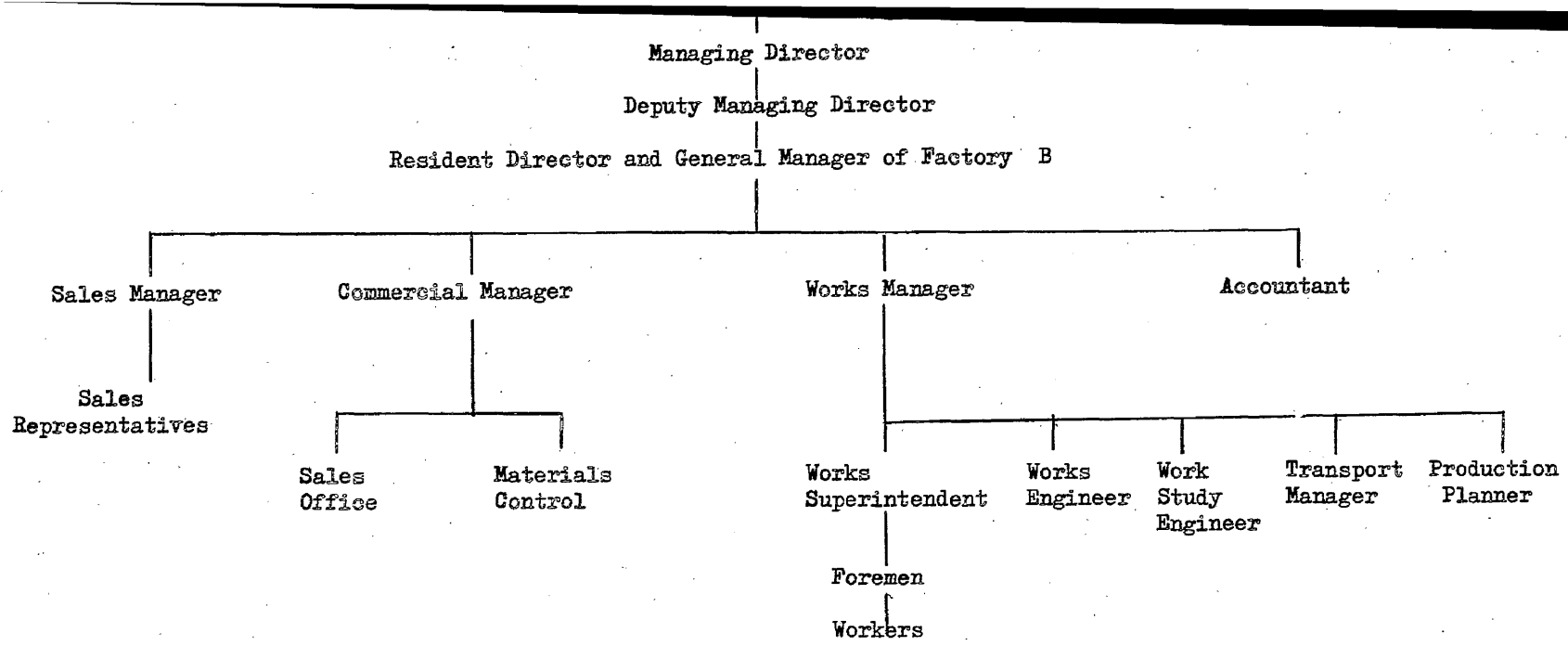


CHART NO. VI. 1. ORGANIZATION CHART FOR FACTORY "B"

half times as rapidly as the rise in real wages and the volume of consumer expenditure. The corrugated cases market of 1962 has exceeded that of 1954 by 126% and between 1959 and 1964, the market increased by 73.3%.

13. The factory is not working under maximum practical capacity. Furthermore, as a result of the new policy of concentrating on certain products, the factory will not be working at a maximum capacity until some time in the future when the development of the new products is completed and their market is fully explored.

14. The factory's general manager, senior production manager, and some service managers are highly educated. They give a strong backing to scientific tools and to budgetary control.

15. The factory's sales manager is partly responsible to the general manager and partly to company 'A's sales director.

16. In 1964, the factory had a highly qualified accountant. However, in 1965 the factory's accountant was promoted to the post of company 'A's management accountant, and a less qualified accountant was appointed in factory 'B' who works as an assistant to the company's management accountant.

17. In 1965, the system of accounts changed to a centralised one in company 'A', with factory 'B's accounting department, providing a limited service to local managers, and mainly working as a service department to the management accountant in company 'A'. However, factory 'B's accounts are still presented separately from those of factory 'A's.

B. <u>The Cost Structure of this Branch of the Industry</u> is as follows :

Materials represent	68%
Labour	6%
Overheads	26%

a) As to materials, the major and most expensive item is paper. The most significant item for control is material waste. This is even more important in factory 'B' than in factory 'A'

since the heavier the products, the heavier the materials used and the more expensive is the cost.

According to the factory's accounts, the material waste ratio is not under control; variations are not reasonable in extent, and random in movement. However, the significant adverse variations are those due to the new heavier products rather than the conventional lighter ones. This is natural since the heavier products are still relatively new to labour and as such their experience is limited; a factor which limits their efficiency which in turn limits the control process.

The control of material waste starts at the production planning process; the customer orders are analysed and sorted so that like grades of board can be produced together. Assorted widths are married together so as to deckle out of available rolls of paper; always trying to use the widest rolls possible for maximum output, but at the same time paying attention to the percentage of edge-trim waste.

Material usage is controlled through scientific standards whereas material price is fixed by agreement.

b) Since most of the labour is direct labour employed on the actual processes, utilisation of machine time and of labour to a large extent go together. The use of indirect labour is not planned, but is left to shop floor supervision owing to continually changing needs and priorities. Therefore, the control process of direct labour is more important than that of indirect labour. As to labour pay rates, these are controlled by agreement.

As to labour utilisation, this is partly controlled by the production planning department through planning machine utilisation and partly controlled by shop floor supervision through minimising non-productive time which minimised overheads per unit.

In comparison with Factory 'A', utilisation indices are much lower in factory 'B'.

As to labour efficiency, from the previous analysis of scientific standards and actual performance, it seems that labour efficiency in this factory is much lower than that of Factory 'A'. One factor which contributes to the low efficiency of labour is the limited experience as the factory is relatively a new one in comparison with factory 'A'.

As to other factors affecting labour cost such as overtime and the like, this is apart from being a policy decision is a production planning responsibility shared with the works engineering department.

c) As to overheads, these are as follows :

14% works overheads
7% management
3% transport
2% sales

Overheads can be controlled in two ways; either reducing it or keeping it at a frozen rate; through responsibility budgeting, at the same time keeping the volume of production as near maximum capacity as possible. However, although the two methods are important, the second is more important than the first and must be kept even at a higher cost.

The application of volume control is not practical in the present empirical circumstances because of the changes in policy of concentrating on certain products and working only on a one shift basis. However, the general effect of the policy on the overall performance of the factory is much better than the old one. As the factory is operating at a loss any way whether it is increasing its volume or not, what the new policy does is to try to build the efficiency of the factory first through a concentration on the main important products, and when this is achieved, the factory can then build its volume. The object of management at present is to break-even in the short run and secure profits in the long run.

From a profitability point of view, this is even better than the old policy, as in the past factory 'B's losses affects factory 'A's profits adversely, and as such reduce the profitability of the company. This is remedied under the new policy in that if factory 'B' breaks even, other things being equal the company's profit would be greater than in the past.

Thus, most of the cost can be controlled by managers.

C. Ratio Analysis:

Unlike factories 'C' and 'D', there are no management ratio scheme to indicate the relative position of the factory's profitability and cost with the industry. As an alternative, the detailed accounts in the factory in comparison with factory 'A' and the financial director's report will be used to pinpoint the factory's problem areas.

D. Main Problem Areas

1. The return on capital employed is negative since the factory is operating at a loss, and as such is much lower than the average return which could be expected in this industry.

2. The turnover of capital employed is much less than in other members of the group and than what could be expected in the industry. Although this indicates a sales problem, it is in fact mostly due to inefficient production at a high cost.

3. % profit on sales is much less than could be expected in the industry, since the factory is operating at a loss.

The return on capital is negative and the two elements of sales and profits are too low. Also, the factory was working at a lower level of capacity utilisation. This indicates two problems of efficiency and volume. However, as a result of the new change in policy efficiency is treated first, with volume only when the factory reaches a satisfactory level of efficiency.

4. Fixed cost has increased over recent years and must be closely under control. Again this is related to under capacity problem.

5. Sales per £ of fixed assets is lower than could be expected and than that of the group .

To sum up, the main problem areas are :

1. material waste
2. labour efficiency and utilisation
3. increased non-variable cost
4. low return on capital
5. low profitability
6. under-utilisation of plant

The keys to all these problems are efficiency and volume. As efficient utilisation of material, labour and cost would minimise cost and securing the maximum practical volume would deal with the under utilisation problem and reduce non variable cost per unit of production. However, since these have been tried together up to 1964 with the result that the factory is still operating at a loss, the production policy has changed to concentrate on the heavier products; the most suited products to the factory's machines.

Thus top management decided to tackle the efficiency problem first and then deal with the volume problem. This is a much better proposition because tackling all the problems at the same time had proved to be a failure. Again, this is also better from the company's profitability point of view.

Finally, whether management builds efficiency or volume or both, this needs control. As such these circumstances necessitate the application of an effective budgetary system.

SECTION II: THE PLANNING STAGE

This section presents the planning stage in three parts. The first constitutes a theoretical model. The second presents the empirical system and the third evaluates this system.

A. The Theoretical Model of Operational Budgeting.

There are three main approaches in general theory, the sales budget approach, the production capacity approach, and the profitability approach. Furthermore, the theory states that each company's particular circumstances are best suited to a certain approach rather than the others.

If management adopts the sales budget approach this requires a special study of the existing market, potential market, seasonal and cyclical variation patterns and the probable trends of sales. Furthermore, a study of the market possibilities of the new heavier products is imperative in this case, since these are relatively new products in the market, and past information does not help much in ascertaining the probable trends. Experience cannot help here either since the products are relatively new and experience is rather limited.

The only available alternative then is to survey the market in order to discover the marketing possibilities of the new products. This also stems from the fact that the factory is operating in an expanding industry which is not directly related to underlying economic trends.

Apart from this special study, the factory's management has to go through a laborious process to survey the market. This, apart from the general study of trends gives a specific programme of action as to how to arrive at and achieve a realistic budget. This survey could be carried out in the same way as explained in Factory 'A'. (1)

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(1) Chapter VI, Section II, p. 114.

This proposed method of general and specific surveys of the market, apart from being scientific is most important in this factory whatever approach is adopted by management. For one thing, the policy of concentrating on certain products, and certain volume in order to achieve the break-even level, means that the achievement of the budget is imperative. In order to achieve this production wise, the sales budget must be realistic in that it must tell specifically how the budgeted volume and mix would be achieved.

For another thing, the sales budget conditions all the other budgets either wholly or partially and as such must be as accurate as possible. Furthermore, being a factory with a selective sales policy necessitates a progressive and accurate sales forecast. All these circumstances together make the proposed method highly preferable to experience or past figures.

Thus, sales planning could have been carried out as accurately as possible according to the proposed method. However, the factory's management did not choose this approach. Whatever approach management adopts, it must plan sales, and must plan it as accurately as possible and as the proposed method provides such results, it still stands, whatever approach is adopted.

However, as the company policy is to concentrate on certain products and attain certain volume in order to break even, it appears that the production capacity approach is more suitable to the circumstances of this factory than the sales approach. As the two forecasts are balanced together and agreed, this lessens the significance of this criticism. Furthermore, the criticism is directed against which approach the factory should adopt rather than the method itself, and as mentioned earlier, whatever approach management adopts, it must plan sales as accurately as possible, and this can best be provided by the proposed method.

The second approach which management could have followed is the production capacity. Briefly, this approach adjusted to suit the

policies and circumstances of the factory, entails the evaluation of the actual and potential productive capacity of the factory with special emphasis on the products concentrated on according to top management's policy. This approach also entails the planning of a certain volume which breaks even or is slightly profitable, giving a percentage for unforeseen difficulties (safety margin). This approach also entails careful planning of product mix, with the object of achieving the best possible combination of products which would achieve three objects.

First, a concentration on certain products, and as this is not usually practical because customers may want certain other products as well, the factory either has to produce those other products (although this is against top management policy) or ask Factory 'A' to produce it. However, taking into consideration that it operates on a selectivity and profitability basis it may produce it or not. Here, top management's policy needs adjustment; it would be either to accept the first alternative providing that they produce only a minimum level of other products or the second alternative again providing it is a minimum level which means an adjustment of top management's policy for Factory 'A' of selectivity and profitability.

Second, the level of production should be such as to break even or slightly secure profits, and since this is the main object of the change in policy, this must condition the whole exercise. And, third, the product mix should be planned very carefully in order to balance the work within the factory. The production planner must participate in this to ensure that the budgeted mix is achievable.

Furthermore, the change in policy of concentrating on certain products in order to build efficiency before volume necessitates a training programme of labour and supervision. It also necessitates integrating gradually higher levels of efficiency as objectives or targets for labour to achieve.

The detailed study of production capacity and mix could help to pinpoint certain anomalies and bottlenecks in the production capacity

structure, if certain machines are bought or certain machines are planned to work more shifts, or certain machines are removed or transferred to factory 'A', the production mix and balance of work through the factory could be improved.

However, in order to build a realistic forecast, discussions must take place with all concerned on the shop floor, with production management and services departments in the same way as in Factory 'A'.

The third approach which could be adopted in theory is profitability. However, as the profitability objective is determined to break-even the planning process would be as to how to achieve this objective. This would entail serious and detailed planning of most aspects of the firm's activities; sales, production, and cost. This is by far the most objective approach to follow in this case since it stems from the firm's objective of building efficiency and provides a programme of action which solves the main problem areas of efficiency and volume. However, unlike the other two approaches which start from the base of the managerial pyramid, this approach starts by viewing the factory's problems from the top and initiating programmes of action to follow them. As such this is most suited to the particular problems and policies of this factory.

However, unless detailed sales, production and cost plans are adopted, this approach would lose most of its value.

As management has decided to solve the main problems one by one, the application of the approach should be gradual according to top management's policy rather than trying to solve all the problems at the same time. However, the problem of efficiency is a multi-dimensional one which involves almost all aspects of the business, sales, production, cost, labour and management. Therefore, trying to solve the problems all at once would either result in a complete collapse of the programme or at best only partial success. The logical solution would be to concentrate on the main aspects of efficiency one by one, and to try to solve the problems one at a time. However,

the inter-relationships between the problems may present a difficult problem. Although this in fact is so, it is much better than trying to solve all the problems at once which might result in a complete collapse of the programme or a limited success.

This approach then although suited to the policies and circumstances of the factory, must be integrated together with detailed planning of sales, production and cost.

It must be emphasised that cost control under these circumstances would largely depend on managerial control, at the same time trying to keep the budgeted volume.

This provides a theoretical budgeting model which apart from applying the general theory of operational budgeting, allows for the particular problems, circumstances, policies and objectives of the factory. Thus, the model could be applied to the factory in the short term, building its profitability gradually through gradual improvement of efficiency and volume.

B. The Empirical System of Operational Budgets

The main representative sample of the empirical system is the 1964 budget. However, this is supported by changes in the 1965 and 1966 budgets, also the evolution of the system since 1966 when the system actually started, a date which coincides with that when the factory was first opened.

a) The system of operational budgeting started in the factory in 1960, mainly because of the factory accountant, and in order to compare the performance of two factories at Company 'A's board level, and to compare all the main factories in the group at the group boardlevel. The system was first introduced by the factory accountantand parallelled that of factory 'A' in order to plan profit, to provide information to management, and to be used as a basis for control. Although the system developed gradually since 1960, one could distinguish two main phases of development; the 1960-62 and the period after 1962

is taken as the landmark for many reasons; most members of local top management were new and a new financial director was appointed who implemented a new system of management information for the two factories, 'A' and 'B'.

b) Before 1962, the budget was an accountant's model, prepared by him to aid local top management to plan profit and group top management to check the plan. The budget was a general and rough estimate of what the factory would expect to do next year. It was done mainly by the accountant with minimum consultation of factory and local top management. At that time the accountant only produced a master plan with no detailed budget. It was mainly based on whatever figures of expected production were given by local top management. At the time the system was developing and was actually used to give information rather than use it for control purposes. As a matter of fact serious trials for control did not start until 1963.

c) In 1962, a new managing director, a new financial director, and a new production manager were appointed. This marked the first year, as mentioned earlier, for Factory 'A' to have a detailed production budget prepared by the new production manager which was taken as the basis for all other budgets. This year also marked the preparation of long term master budgets for five years, the preparation of capital budgets by the new managing director, the preparation of balance sheet budgets, the statement of planned movement of funds, and the introduction of a new system of marginal costing in amalgamation with standard costing by the new financial director. He also proposed the introduction of a variable or flexible budgeting system but delayed its introduction until the original budgeting system stands on its own feet.

Factory 'B's accountant is periodically in consultation with factory 'A's accountant, as he attends Company 'A's board meetings on the recommendation of the new financial director, this new system was applied in Factory 'B'.

d) No structural changes took place in the system between 1962 and 1966, although some changes and developments took place, therefore the 1964 budget gives a fair picture of the empirical system. The 1964 budget was prepared in this way.

1. The starting point of the budget is a total production figure suggested by the factory top manager. The accountant then on the basis of this figure prepared all the detailed budgets. The budgets of the two factories were prepared by the two accountants in Factory 'A's headquarters.
2. A meeting between the local managing director, the works director, (at present deputy managing director), Factory 'A' cost accountant and Factory 'B' accountant.
   In this meeting the managing director gave the accountants the agreed figure in terms of sales value for Factory 'A', and asked them to prepare a rough master estimate for the two major factories of 'A' and 'B'.

   Within several hours the accountants prepared a rough master forecast for the two factories, based on the figure suggested by the managing director for Factory 'A' and that suggested by the general manager for Factory 'B'. These were rough calculations based on scientific standards for materials, labour and transport, with cumulative actual performance rates up to period eight in 1963 with minor adjustments.

   The material forecast was based on scientific standards provided by the work study engineer multiplied by standard prices. As to labour, the known revised rates of pay were applied. The efficiency and utilisation indices were taken on the same basis of last year. The level of production in the production centres was taken as that for 1963 with adjustment for estimated increases in the production level for 1964. Using these rates and information the accountant calculated the labour forecast for the two factories 'A' and 'B'.

The transport cost was based on the rates prevailing for 1963. With regard to overheads; works, sales and administration, each item was considered in the light of the 1963 level of expenditure and was adjusted to cover the increases in production.

At this stage, the expenditure items have not for the present purpose been agreed by the responsible managers. However, the report mentioned that these items would be agreed with the responsible managers before the final budgets were prepared.

The revenue forecast revealed a greater reduction of planned gross margin percentage for Factory 'B' than that of Factory 'A'. This was mainly due to the reduced gross margin expected for the new products.

The revenue forecast also indicated that the planned level of profit and return on capital employed showed a satisfactory level of improvement on the 1963 actual performance.

The accountants, as a result of calculating and comparing two master forecasts for the two factories, found that there is a considerable under-utilisation of capacity at Factory 'B'. As a result of this, they recommended an increase of planned sales figure of 15% of the original figure. They also recommended that the increase in the sales figure could be achieved at little more than direct cost and would increase the profit margin considerably by about 87.5% of the original estimates margin. However, they also recommended that the increase in sales should be of a type similar to the work which is being done at Factory 'B' at that time.

This recommendation was accepted by the managing director and his deputy and as such was implemented in the provisional master forecast.

The forecast showed much lower percentages of profit to sales, net profits to sales, and return on capital for factory

'B' in comparison with Factory 'A', with the result that the ratios for the company as a whole has been pulled down greatly. For example, the return on capital ratio was reduced by 25% of the original ratio for Factory 'A' alone.

3. The forecasted revenue account was then presented to the 1963 October local board meeting when after being approved, it was taken to represent the 1964 provisional budget. The accountants were then asked to prepare the final budgets and present them for approval to the November board meeting.

This concluded the provisinnal budget stage and marked the beginning of detailed forecasting on the basis of the approved provisional budget to provide the final detailed forecasts, which if approved would represent the final budgets.

4. Before the preparation of the provisinnal forecast, the sales forecast for the company as a whole has been prepared by the sales force. The steps of arriving at the forecasts are exactly the same as those discussed earlier under factory 'A'.(1)

5. However unlike Factory 'A' the production forecast was prepared by Factory 'B's accountant, and although prepared in the same way as that for Factory 'A', it was based entirely on last year's figures, adjusted according to the accountant's experience and judgement rather than that of members of the production managemant.

6. The cornerstone of the budgetig system is the prodution forecast, in turn the cornerstone of the production is the corrugator output forecast. This is the basis of the provisional and final budgets.

As all paper has to be corrugated, this is the basic technical process, however not all corrugated paper has to be printed and not all cases have fittings.

The first step in calculating the production forecast is to calculate the corrugator output forecast. The forecast is

(1) Chapter V, Section III, p. 127.

calculated for each period in the year, the total of the individual forecast for the different periods in the year represent the total forecast of the corrugator, for the first period. In order to prepare it, the following information must be available; number of weeks in period, (this is a standard adopted by the whole group), normal available hours in the week (this is the weekly hours minus meal breaks), the utilisation index, (this is taken as 1963 actual performance), and the square feet of corrugated paper produced per hour, (this is taken as the average production standard prepared by the work study engineer adjusted according to the actual efficiency index of labour crew in 1963).

Collating this information, the preparation of the corrugator's forecast becomes a straightforward arithmetic process. By multiplying the available hours per week by number of weeks in a period, the result is the available hours in the period. In turn, this is multiplied by the utilisation index to give the hours expected to be spent on production, this in turn is multiplied by production in terms of square feet per hour, the result is the production forecast of the corrugator in terms of square feet for the period. A distinction between new products and other conventional products were kept in the forecast.

The same process is repeated for the other eleven periods in the year. The only adjustments made were those of the available hours figure to take care of holidays and number of shifts. The total of the twelve production figures then represents the 1964 production forecast of the corrugator. This figure is then multiplied by a sales price per 1000 square feet of production of corrugated paper. The sales price figure is an average which is calculated on the basis of last year's experience. The result of this is the forecasted sales value. This sales value figure is that taken in the approved provisional budget.

7. The product mix forecast was again prepared by the accountant on the basis of last year's figures, and on the same lines as the one prepared by the works director for Factory 'A'.

After preparing the corrugator output forecast, the next step is to calculate the production capacity of the printing machines. The capacity of the printing machines are calculated in the same way as the capacity of the corrugator. The information needed is the number of weeks in each period, the hours available in a week and the utilisation index which taken as production per hour as adjusted to the actual efficiency of labour prevailing in 1963. Through a multiplication process the available capacity for each printing machines was established.

As to the capacity of the fittings machines and closing machines, these were calculated in the same way. As to overtime, this was taken as last year and adjusted to the increased level of production.

However, one main difference between factory 'A' and 'B' is that no balancing of mix and production capacities of the different machines took place. Only the capacities of the different machines were calculated. As such this amounts to production forecast and not a product mix. The only product mix which was calculated in 1964 was that of allocating the total sales figure to the different products on the same basis as that of 1963.

8. Direct labour forecast: Once the production capacities of the different machines have been forecasted, the direct labour forecast for the machines and operations becomes a straightforward arithmetical exercise, since the utlisation and efficiency indices, the available hours, rates and bonus rates are known.

Furthermore, it is known whether a certain machine will be working overtime or not, and the extent of the overtime.

Through multiplication the direct labour forecast for the major sections of the factory are determined.

Indirect labour, on the other hand, is considered as an item of the overhead forecast.

9. Overhead forecasts: The overhead forecasts were divided by responsibility to eight responsibility centres as follows :

a) Works overheads :
   1. corrugator overheads
   2. machine times and fittings overheads
   3. factory administration overheads
   4. maintenance overheads
   5. welfare and canteen overheads.

b) Transport:
   6. transport and despatch cost

c) Selling:
   7. selling overhead

d) Management:
   8. management and administration expenses

Apart from transport, which is considered as a direct cost in this factory, all the others are overheads.

Responsibility centres 1, 5 and 6 are under the works manager, 2 is under the works superintendent, 3 and 8 are under the general manager, 4 is under the works engineer, and 7 under the commercial manager.

All the overhead forecasts were prepared by the factory accountant and managers were consulted on the final figures. What actually happened was that the detailed budgets were prepared by the factory accountant and were given to the general manager one day before the board meeting who called a meeting with his senior managers of sales, production, commercial and the accountant, who agreed to the budget without any adjustment whatsoever.

10. The collation of all these detailed forecasts by the factory accountant gives the master forecast. The factory accountant prepared a revenue account forecast for 1964, subdivided into periods taking into consideration the standard periods in the group and the number of working days in each period.

11. On the basis of the yearly master forecast, the factory accountant (in consultation with the local top managers) prepared a five year long termrevenue account forecast. It was more general than the yearly forecast as it was based on a simple progression basis. Its main object was to give the local and group boards a general indication of what is expected in the next five years in very broad terms.

12. On the basis of the master forecast, the factory accountant prepared the yearly capital forecast,balance sheet, and statement of movement of funds on the same basis as that of Factory 'A'.

13. All the final forecasts were presented to the factory's top manager who held a meeting on the night of the board meeting, to discuss the final figures with the factory's management committee, production, sales, commercial managers and accountant, who approved of the forecast without adjusting any figures.

14. All the final forecasts were presented to the November local board meeting where they were approved and sent to the December parent board meeting, where they were approved and the final forecasts became the final approved budgets of 1964.

15. In 1965, budgets were prepared on the same lines.

16. The 1966 budget implemented more consultation than those of 1964 and 1965 as a result of the switch in the new policy of building efficiency before volume. The top manager and senior production management were consulted on the labour budgets this year, as a result of the structural changes in manning caused by concentrating on certain products only.

C. Evaluation of the Empirical System

This part evaluates the empirical system critically in comparison with the theoretical model.

1. The main approach adopted by management is the production capacity of the factory, and although this may appear to be logical on the basis of the new policy of concentrating on the relatively heavier products, and to accommodate the structural changes in manning, the production capacity approach was not chosen as a result of the change in policy. As a matter of fact the production capacity approach was adopted in the three years under study, although the change in policy was in 1965.

   Even so, as mentioned earlier (1), this approach is not the most suitable approach under the new policy since the policy has another object of profitability; to break even in order not to pull the profits of factory 'A' down, and as such reduce the company's profitability, which necessitates the adoption of the third approach of profitability. Thus the approach adopted is not adjusted to suit the factory's objectives and policies.

2. Although sales planning for the new products must be done scientifically according to the theoretical model, since experience is limited and cannot substitute science in this case, sales planning again was done exactly in the same way as if nothing had changed and as if sales management knows the market possibilities of the new products for very long. This of course is an extremely tentative procedure from control point of view.

   This practice again is dangerous as it is not adjusted to suit the factory's new objective and policies. Furthermore, this practice results in an unrealistic budget figure, which results in variations because of the defects inherent in the planning process . This confuses the use of the budget for control because it confuses the objective evaluation of the actual performance through having general and vague comparisons which does not allow specific and pinpointing corrective action.

(1) Under the Theoretical Model, p.202 of this section.

3. Again the same criticisms of sales planning in factory 'A' applies in Factory 'B'. As the planning process followed the same pattern, although scientific planning according to the theoretical model is needed even more in factory 'B', since factory 'B' is operating at a loss and is developing some new products, whereas factory 'A' is operating at a profit on the already developed conventional products.

4. Although there is an actual sales seasonal variation pattern, this was completely ignored in the 1964 budget; the sales figure of the different periods was allocated on the basis of the number of working days only. This did not only affect the accuracy of the sales budget, but also the accuracy of the production and labour budgets as it resulted in planning the same production and overtime throughout the year. In fact, this assumption could never be true on two grounds; first of all there is an actual seasonal variation pattern and second production cannot be kept at the same rate since the factory does not produce to stock but produces to deliver directly to customer orders.

As such, the ignorance of the seasonal variation pattern can only be right if the pattern is flattened throughout the year as a result of changing sales or production policies or both.

As the factory cannot produce to stock except under very limited conditions, it cannot change its production policy. Moreover, chaning the sales policy to induce the customers of seasonal products to buy their packs earlier than peak periods as discussed under Factory 'A' is only partly successful and as such does not completely flatten out the seasonal variation pattern. Therefore, the seasonal variation pattern must be studied and integrated in the sales budget and its implications should be considered in production and labour budgets.

However, in the 1965 and 1966 budgets the sales variation pattern was completely recognised and integrated in the sales budget. However, its implications were not considered in the other budgets of production and labour.

Furthermore, although this solved the problem in principle, its application was extremely tentative as it was based entirely on area sales managers experience and judgement, a logical improvement here would be to use the available simple but more sophisticated statistical techniques; such as the method of least squares. Although this is more accurate and scientific than experience and judgement, it is not an alternative to experience in fact it only uses experience in a scientific way.

The application of the statistical techniques is within the reach of the company because it employs highly qualified accountants and managers.

5. The sales cyclical variation pattern is neither studied nor integrated in the budgets at all. Although in this industry it is important to study this pattern as the trade condition fluctuates from year to year according to allexecutives concerned. They claim that trade conditions were bad in 1961 and 1962, a recession at the beginning of 1963 which improves by the end of the year, a boom in 1964, and another recession at the beginning of 1965, as a result of the imports surcharge imposed by the Government.

The knowledge of this information after it actually happened is no good at all as it only works as a reason or an excuse as to why they did not achieve the budget. Unless the pattern for the industry and the company is studied in a scientific way in advance, it will not help management to plan its policy to overcome it in any way.

Moreover, this study would help to construct more accurate and realistic budgets, which would enable better control through realistic comparisons and pinpointing corrective actions. This would also give executives more time to think and recommend how to deal with the situation long before it happens. Furthermore, this could easily be done as the information is partly in the company, association, and the published statistics, and as the company employs highly educated executives.

6. The surveying of the market by sales representatives as suggested by the theoretical model, although on the face of it might appear to be done through submission of individual targets by sales representatives, is not done intensively at all.

Although this participation process was originally intended to force representatives to survey their territories in a systematic way, investigation proved that this is little since the practice is usually to add a percentage on last year's figures in order to arrive at an acceptable budget rather than to survey the market or provide a programme of action.

This in fact is encouraged by the practice that target forecasting is needed as a general figure only. The representative usually say - my forecast for the next year is £1 or £2, and in most circumstances he does not go to any depth or detail beyond this general figure. Thus, he does not show how he will achieve it, what mix is available, what price is prevailing, how he stands relatively to others in the territory, and so on.

The logical improvement here would be to ask representatives to survey their territories in more depth and detail in the same way suggested by the theoretical model. This applies even more in this case since the factory is dealing with new products, and the new policy is to concentrate on them and dispense gradually with other products.

This proposal, however, implies a training problem. All members of the sales force have practical experience rather than high education. As a result of this practical limitation the proposal should be implemented gradually, at the same time sales representatives should be trained and with top sales management educating that sales forecasting is a serious matter and should be planned in more depth and detail.

Furthermore, as the parent company in 1965 employed a market researchexpert, the most logical improvement would be the amalgamation of the general market research by the expert with specific area surveys by sales representatives. Thus forcing representatives to go more intensively to study and survey their areas, apart from resulting in a realistic programmeofaction, is a training process in itself. Although this could be criticised as wasting the representative time, in fact it would not as it could help him plan his time more beneficially through concentrating on the most needed work by the factory. As it stands at the moment, the representative may exert a great deal of effort to get an order which may be refused by the factory on the basis of a low price or an undesirable mix or many other reasons.

7. Sales mix planning is extremely tentative as it is based entirely on last year percentage in a very general way. As such this does not stem from the factory's new policy of concentrating on the new products. Moreover, having new products lessens the value of past experience.

The logical improvement here is that suggested by the theoretical model; of representatives surveying their territories. This would give sales management the information long in advance to help them plan a compromised sales and production mix in the context of the new policy and objectives of the factory. Planning of sales mix could easily be done by sales representatives. Each representative through surveying his territory can say that

the main customers in his area are so and so, potential customers are so and so, these customers produce so and so, and as such they need certain packs.

This, after being checked and rechecked by sales area manager, director and market research expert, if collated, would give a realistic sales mix forecast and if compared and compromised with production mix in the context of the factory's new policies would give a realistic mix forecast. As such the mix budget would be realistic, precise and pinpointing.

8. As the factory's objective in the short run is to break even it is imperative in this case to study the degrees of variability of cost. Moreover, as the factory's management has adopted the marginal costing principle since 1962, a study and analysis of the cost variation pattern becomes a necessity in this case. However, no such analysis was carried on. Instead, the accountant used last year's figures and his experience and judgement as a basis to determine the degrees of variation.

This is extremely tentative, as it entails a degree of inaccuracy in the budget.

9. As a result of having an inaccurate sales budget and as a result of change in estimated trade conditions, the original sales budget value was incomparable with the actual figures. Moreover, as sales conditions all the other budgets, either wholly or partly, comprison with the original budget became meaningless, and as such confused the control process.

In 1962, the financial director recommended the integration of the variable budget approach, which involves the revision of the original budget to have meaningful comparisons. In fact the variable budget approach was applied near the end of 1963 on an experimental basis and was completely followed in 1964, but abandoned altogether in 1965 and 1966. However, planning of cost behaviour and variation was extremely

tentative and unscientific. It was entirely done by agreement between the cost accountant of factory 'A' and the factory 'B' accountant, who decided in a meeting not to vary the budget figures at all if sales vary within 5%, and vary some figures totally, and others partially with sales. It was an extremely tentative process of saying that expense A varies while expense B would not and so on.

However, realising this, instead of studying degrees of variation and cost behaviour in a more scientific way through statistical analysis they dropped the preparation of the variable budget altogether.

Moreover, the variable budget was not a flexible budget in its strict sense, as it was prepared after the event at the end of the period, on the basis of actual variation in sales. As such, it was an adjustment of the original budget figures to make it comparable with the actual performance rather than changing the original budget figures to accommodate changes in the assumptions and conditions of the original budget expected in the rest of the year.

In sum, this was not a flexible budget, but rather an adjusted volume to make comparisons meaningful.

A logical improvement here is a study of cost behaviour and degrees of variation on a scientific basis. Again, as the factory is dealing with new products, and factory's management has a limited experience on them, the conditions and assumptions of the original budget are bound to change as they are originally tentative. Therefore, a flexible budgeting approach is needed here. However, this must be coupled with a statistical study of degrees of cost variation.

This would work as a basis for sound cost control and it would help management take decisions more easily as the break even point would be more accurately forecasted. Also, it is

most suited to the factory since it is working on the marginal costing basis.

10. The material budget is not detailed enough. It does not consider the different grades of paper. Rather it is a general figure based on the average standard usage, which does not enable specific and pinpointing corrective action for control. However, as material usage standards are scientific, the criticism becomes of degree rather than of kind.

The labour budget is a clear application of budgeting science, apart from the practice of taking efficiency and utilisation indices as those of last year. Taking the same indices as last year is the minimum practical budget which could be achieved if the same efforts are to be exerted in the budget year. However, as business is a dynamic concept, and as the factory's policy is to build up efficiency rather than volume in the relatively short term, one could reasonably expect better efficiency and utilisation the longer the experience of the factory's management and labour. Thus target indices, which build up efficiency gradually, should be planned and should be coupled with a training programme and effective supervision of labour.

Another criticism of the 1964 labour budget is that it was done by the accountant with non-effective consultation. However, in 1966, this was checked with senior and top production managers being consulted on manning before constructing the budget. However, foremen were not consulted at all.

11. Overhead budgets were prepared by the accountant without effective consultation whatsoever in 1964. As mentioned before, only senior and top managers were consulted on the night of the board meeting without rejecting any targets at all, as this was the only alternative open to them. They nominally accepted thebudget, as the factory's

general manager accepted it on the grounds that it is based on the same budget rates as that of 1963.

Moreover, most service managers who are actually responsible for the expenditure were not consulted at all, not even nominally.

Thus, consultation on the production and cost sides was concentrated round the top manager in the factory, with nominal consultation of senior managers, and no consultation at all of other services, production managers and foremen. A logical improvement here is to get all managers who are responsible about the budget achievement involved in their individual budgets from the very beginning through effective consultation, with a true intent to know managers' problems and to adjust the accountant's figures if necessary.

12. The procedure for preparing and compiling budgets in the factory is not outlined. This makes it extremely difficult for newly appointed accountants to prepare budgets on the same steps followed by the previous accountants, since the process is only kept in the accountant's mind. It also makes it difficult to revise and improve the system. Furthermore, there is no formal timetable to prepare the budgets.

To sum up, this is an accountant model of budgeting since the budget is prepared by the accountant with minimum consultation of top managers.

However, apart from non-consultation there is no other reason which may prevent managers from using their budgetary information. In fact, they accepted the budget as practical and therefore this should encourage rather than hinder their use.

SECTION III : THE CONTROL STAGE

This section presents the control stage in theory and practice, from accountant's point of view as a reporter of actual performance in comparison with budget, and from manager's point of view as a user of the information.

This section presents the control stage of the budgetary system in three parts. The first part presents a theoretical model. The second presents the empirical system, and the third presents an evaluation of the empirical system.

Theoretical Model of Control

Since the discussion here is confined to the general principles, therefore the same theoretical model of control presented in Factory 'A'[1] applies to this case as well. As to the detailed information returns, these are best discussed under the empirical system.

Empirical System of Control

This part presents the empirical system in three parts. The first presents the framework of the control system. The second presents the control process involved in the overall performance of the factory, and the third presents the major detailed controls.

a) Framework of the Information System

The system of management information started in the factory with the introduction of budgetary control in 1960, when the factory was first operating. The system developed gradually to the present system of an integration of marginal with standard costing techniques. However, the marginal costing technique was first introduced to the factory in 1962 by the new financial director, whereas standard costing started with the introduction of scientific standards to the factory since it was first operating.

The development stages of the system, however, followed exactly the same pattern as that of factory 'A'.[2]

(1) Chapter V, Section III, p. 155

(2) Appendix 'F', Volume II, p. 222.

At present, the system provides top management with monthly and quarterly information to help them control the overall performance of the factory, with detailed information provided to production, sales and services managers. As such there is one general system of control with three other detailed systems.

Overall performance of the factory's information is concentrated around the very top manager. In 1964, it was provided to all members of the management meeting, general, production, sales, commercial managers and the accountant. However, in 1965 the management meeting practice was no longer in existence and only the general manager got the information about the overall performance of the factory.

As to production managers, only senior managers are provided with information whereas junior (foremen) managers do not get any information whatsoever. The case is exactly the same with service managers who do not get the periodic information. Thus, information is concentrated here around the factory's top and senior management.

As to the sales manager, he gets the information through the company's sales director, with the representatives each getting his actual performance figure in comparison with his budget.

This is a general introduction of the information provided to different managerial levels. As to the accountant's role as an interpreter, it has been ascertained that in 1964 the accountant used to work as an interpreter to senior and top management through attending the management and the board meetings. However, his interpretation in the management meeting was highly technical as his philosophy was, it is better to get all managers to understand the standardised technical terms rather than explaining the financial terms in a simple language, so his interpretation was rather of limited value.

Furthermore, managers use to see the infomation for the first time in the meeting in order to have the management meeting soon after the information is out from the press and before the board meeting. What actually happened was that the accountant was expecting reasons for the variances from managers whereas managers did not have the chance to study the figures and discuss them with their foremen in order to know the real reasons and take the right actions, so they were expecting the accountant to explain the reasons for the variance, and being a small factory with each manager trying to extend and build his empire, this rather actuated the meeting and also actuated relations between managers and the accountant. Thus, the accountant's role as an interpreter was little effective in these circumstances.

In 1965 the accountant became the company's management accountant and the management meeting was stopped. However, the accountant continued his service as an interpreter each month, to the general manager only. This although proved to be very useful, its extent is rather limited to one top manager.

However, although of the concentration of the information round top and senior management and although the interpretation process is only concantrated round the very top manager alone, the responsibility of achievement of the budget was shared by other managers as well as senior and top managers, a practice which contradicts the logical implication of the general theory and the theoretical model.

b) <u>Overall Performance of the Factory's Control Information System</u>

Overall performance of control information system in the factory is operating on a monthly and quarterly basis. However, the two are complementary to each other, as the monthly information is concerned with profit control whereas the quarterly information is concerned with capital.

At the end of each period (4 or 5 weeks) a set of accounts is presented to local and factory top management; this is comprised of the following statements :

1. revenue statement
2. sales mix and profitability statement
3. variance analysis statement
4. overhead expenditure statement
5. financial report.

Thus, the statements provided are exactly the same as those of factory 'A' (1). Therefore, the same criticisms apply to them.

However, as to their use by top management, the information helps the board to discuss the main problem area, to follow up the general manager on its basis, and to influence the board policy decisions.

The general manager, in turn, uses it as a basis to determine the main problem areas and the extent of the significant deviations helped in this by the nature of the forms, being highly developed which enables an immediate spotting of the main problem areas, as well as to the accountant's role as an interpreter who facilitates the understanding of the implications of the figures by the general manager.

The general manager as a result of all these factors together as well as being highly educated and his long experience in budgets, standards and incentive schemes, uses his information in turn to follow up his works manager who in turn follows up the other managers.

Thus, to sum up, the control model model here is working, in practice, in accordance with the theoretical model.

Major Detailed Controls in the Factory

This part is divided into three sections ; the first presents

(1) Chapter V, Section III, pp. 161-168.

information provided to sales managers for control, whereas the second presents information provided to production managers and the third presents the information provided to service managers.

1. Sales Managers' Information System

The main statement is that provided by the company's sales director to the sales manager who in turn provides the individual actual performance in comparison with budgeted performance to each sales representative.

The origin of the statement is the sales performance statement which is presented to the company's sales director by the invoice section of the accounts department.

The statement presents for each representative in the area under the factory's sales manager the actual sales figure and the percentage of this to the sales target, for the period and cumulatively to date.

This form is divided into two parts; the first presents the above mentioned information for orders received by the factory whereas the second presents the same information for sales deliveries already affected. The main object of the form is to provide the sales manager with information to enable him achieve the yearly sales budget through controlling the periodic performances of each sales representative.

The information is given to the sales manager two and a half weeks after the end of the period concerned. The information is very easy to understand and is presented in a very simple form.

It is presented in this form to enable the implementation of the principle of management by exception through pinpointing problem areas in the least possible time as the manager can see right away which sales representative is doing worse than budget, and whether this is an odd performance or continues

all the time through comparing the percentage achievement for the period and cumulatively to date.

The sales manager after establishing the main problem areas can then follow up the sales representatives concerned as a basis for finding reasons and taking corrective action.

In fact, the information is used in this way; the sales director picks up the worse than budget performance for the area which concerns the factory's sales manager, he then decides according to his experience and judgement which are the significant deviations and then writes to the sales manager to ascertain the reasons for the deviations and tries to help the representative to achieve his budget.

The sales manager takes over from here, he again looks at the figures and writes to each representative informing him of his performance. He then picks up the significant deviations according to the sales director's letter and his own judgement and follows up the representative concerned to know the reasons and tries to help him achieve his budget.

If the representative's performance keeps going down with no apparent controllable reason, the sales director follows up the representative himself and if by the end of the year (providing that this is not the representative's first year with the company) his performance does not improve, he will be asked to leave the company.

This information, as mentioned earlier, is used as a basis for sales force reorganisation and for the representative's bonus. In fact, this form is used extensively by sales director and sales manager as a basis for following up representatives. As such it achieves its objectives. This, however, is a control system which operated within two other control systems; the overall performance of the factory and group sales control.

It is considered as a supporting detail to the overall performance system. As to the group sales control system it

is based on this information. It is, however, presented to the group sales director and company's sales director six weeks after the event; too late to be effective for local control. However, it achieves its object of informing group top management of the factory's sales position. It also facilitates comparison between all the factories in the group.

As to sales cost control, investigation proved that this was non-existent on the factory and representatives' level until late in 1965. At that time the sales cost was greatly over budget, so the sales director was followed up to improve it. He explained that the increase in cost was mainly due to having more representatives and as a result of an increase in storing charges, in order to keep the factory's capacity near the budgeted level.

However, as the extent of deviation (7% of the cumulative budget from the beginning of the year up to the end of September 1965) was significant in top mangement's judgement, the sales director was asked to watch it.

As a result of this, he wrote to the factory's sales manager asking him to watch his cost. The manager wrote back asking for the detailed information as he had not received it. As a result, the sales director sent him the detailed information for each type of expense. Whether this will be used or not remains to be seen. However, it is forecast that it will be used in the future but not as extensively as the sales performance information.

This, however, is an interesting incident, which shows how serious follow up by top management as an indication of their attitude has started a control system.

2. Production Managers' Information System:

The system provides senior production managers with daily, weekly and periodic information.

a) Daily information

The daily information presented to different levels of management concerns the three main production departments; corrugator, closing machines and fittings.

1. Corrugator Performance Return

As mentioned before, the corrugator is the basic and most important operation in the factory. This single process affects all other processes. Therefore its control is imperative in this industry.

The return presents the following information; for each shift (the corrugator was running on two shifts in 1964 and only one shift in 1965 as a result of the new policy of building efficiency before volume), it shows the available hours, the stopped time, the reasons for each stoppage, and the actual time spent on productive work. The second part of the return shows the allowed or standard hours produced on the different main products. The third part presents the efficiency, utilisation and activity actual indices for each shift and the average for all shifts whereas the fourth part of the form presents technical information. The objects of the return are :

1. To enable management to control the corrugator crew's efficiency and utilisation.
2. To be used as a basis for calculating bonus.
3. To be used as a basis for weekly and periodic information.

The source of the information is the corrugator running report which is provided by the shift foreman and approved

by the works superintendent. The form is produced daily by the accounts department and presented to different levels of management the second day after the event. The information is provided to top, senior and junior management, the general manager, the works manager, the works superintendent, the corrugator's foreman, and production planner and the commercial manager, with a file copy kept by the accountant.

The information is often and quick enough, easy to understand and enables comparison between the two different shifts. It also gives reasons for non-productive time for each shift and facilitates pinpointing responsibilities; as to which shift is pulling the average index down which results in having low indices of efficiency and utilisation.

However, the form does not show the budgeted indices of efficiency and utilisation. This makes it difficult for the user of the form; as he must have the indices at the back of his mind or has to refer to the budget. The logical improvement here is to include the budgeted indices in order to facilitate comparison between budget and actual performance and as such facilitates the use of the form. Moreover, the form is given to many executives who theoretically and practically cannot do anything about it.

As mentioned above, the return is used as a basis for bonus calculation, for periodic accounts and to control efficiency and utilisation of corrugator's crew.

In order to achieve the first and second objects, a copy must be kept by the accountant, and to achieve the third object, the corrugated foreman must receive a copy as he is the nearest level of management who can do something about it either before or when it happens. The works superintendent and works manager should also receive it

in order to enable each of them to follow up the next level down to the foreman.

The works engineer should also get a copy in order to help him plan and control the utilisation of the machine through minimising breakdown time, or even recommending renewals of certain parts of the machine or the whole of the machine if breakdown is significant and too often.

However, the nearest level who gets the information is the foreman. He mainly uses it as a basis to query the accountant about workers' bonus and to answer his crew's queries about the bonus, as such it is not used for control at this level.

In fact, its use for control is related to the works superintendent who follows up on its basis directly after he gets the information. However, as the foreman's background is long experience rather than high qualification, he then uses his experience and judgement for control and not the information, the main reason here is the educational status.

Other copies given to other senior managers although of interest are of no use whatsoever, and therefore redundant information.

This information should be given daily to lower levels of management up to the works superintendent level, to the works engineer, and weekly to higher levels; works and general managers. By doing this, the information carries a higher probability to be used by top levels.

Although it is preferable in the long run to give the information to the general manager periodically, in the short run it is better to give it on a weekly basis as the factory's policy is to build up efficiency. Therefore, the top manager needs the information more frequently until the factory's efficiency is built up. Then the information is better given on a monthly basis.

To conclude, apart from the above outlined criticisms, the form wholly achieves its first two objectives and to a great extent the third objective of control.

2. Fittings and closing performance returns

The accounts Department present a daily form for each of the other two main operations in the factory; fittings and closing.

Each of the two forms presents the following information for each machine or number of similar machines; it shows the clock hours, the standard hours and actual machine hours. It also presents the time wasted on breakdown, the available hours, the efficiency and utilisation actual indices and the amount of bonus. It also gives the total of average figures of the department as a whole.

The form enables management to pick up low performances right away and can be traced by responsibility at the same time. As such the form enables management to control through implementing the principle of management by exception. However, the form does not present any comparisons with the budgeted indices of efficiency and utilisation.

The returns are presented daily to the foremen, works superintendent, works managers and general manager. As such its distribution is rather more limited than the corrugator return. The logical improvement here is to provide the return daily to lower levels of management; foremen and the works superintendent; and weekly to higher levels; works manager and the general manager for the same reasons discussed under the corrugator return. Moreover, it would be more useful from top and senior management points of view to present a weekly summary of the three forms; corrugator, fittings and the closing machines, as these managers are busy and need not know all the details, only a comparison of actual and budgeted indices of efficiency and utilisation.

The pattern of use, although similar to the corrugator's in principle, is different in extent. Investigation proved that the only use here is that of the foreman's to initiate and answer queries about workers' bonus, as a result of his educational status. However, the foreman is not followed up at all on the basis of this information. This results from top and senior management's concentration on the corrugator's performance.

By comparison, this proves that follow up in this case is more effective than high education, training or experience in budgets, since the same managers with the same educational status use the corrugator return and do not use the fittings and closing machines returns. The only factor which has changed is top management's follow up in the first case and the absence of follow up altogether in the second and third cases.

To sum up, the daily system provides managers with information to help them control the efficiency and utilisation of labour on the different machines and the production process, and in fact only the important part followed up by top manager is used.

b) Weekly Information

At the end of each week the following returns are prepared and presented to management; corrugator performance return, fittings return, closing machine performance return and corrugator waste return.

As to the corrugator, fittings and closing machine performance returns, these are exaclty the same forms as presented under the daily information with one difference; the figures concern one week rather than a day. Therefore, the main criticisms outlined above apply to them with two more.

The first is that the form does not present any cumulative indices for the weeks to date, and as such does not help managers to know the trends and control on its basis. A logical improvement here would be to include the actual cumulative index in comparison with the budget.

Secondly, the form is presented to an even wider range of managers than the daily form. As mentioned before, the criterion for distribution should stem from the objectives of the form and as those are exactly the same as the daily forms, therefore their distribution must be the same. Therefore the logical improvement here would be to give the form to those managers outlined under the corrugator daily return.

As to the weekly corrugator waste return, this is prepared by the accountant once every week and is presented to the general manager, works manager, and the company's management accountant. Its main objectives are to help managers control waste and to help the accountant to prepare the periodic information.

As mentioned before, material waste represents an important area for control in this industry as material cost represents 68% of the cost structure. It is even more important in this factory as it operating at a loss, partly as a result of excessive material waste. Also it is important as labour efficiency is not as high as factory 'A'. Therefore, all the circumstances indicate that this is a very important area for control, especially with the new policy of building up efficiency before volume.

However, the information reports on corrugator waste only and not all waste. Corrugator waste is the most significant since it is nearly half the percentage of all material waste of all the production processes. Therefore this is an important area for control.

Since the production of the new products, two main reports are prepared, one for conventional products and the other for new products, a better practice from control point of view. Each return presents the following information: paper input and glue

input at standard cost in comparison with the corrugated board produced at standard cost, with the difference presenting excess over standard waste.

The return also presents the standard waste, the total waste and percentage of total waste to total input. As such the form is very concise, and enables comparison between standard and actual. It also pinpoints excess waste as an indication of labour efficiency.

However, the form could be even more concise by concentrating on the following information only; excess waste, standard waste, total waste and percentage total waste to total input, since these give the only needed information for control. The other information, although of interest, has no value for control.

The other main criticism is its limited span of distribution. As mentioned before, the form is only provided to the general manager, the works manager and the management accountant. As such it is only presented to top and senior management. Thus the information is not presented to the works superintendent and the corrugator foreman and they can only use their experience and judgement as an alternative for control.

The logical improvement here would be to provide the information to the corrugator foreman and the works superintendent in order to complete the cycle of control.

To conclude, this form provides information to control the corrugator's waste, and, in fact, it is used by top and senior management for that purpose.

c) Periodic (monthly) information :

At the end of each period (4 or 5 weeks) the following returns are provided to production and top managers; corrugator performance return, fittings performance return, closing machines performance return, corrugator waste return, and production overhead statements.

As to the periodic corrugator, fittings and closing returns, they are based on the weekly information, and provide exactly the same information with one difference; the figures concern one period rather than a week. Therefore the same criticisms apply here as well.

As to the periodic waste return, it presents exactly the same information as that on the weekly return. However, it presents the information separately for each week and the total figures for the period and as such it enables a comparison between the performance of the different weeks. Another criticism here is that the information does not enable managers to see the trend. An improvement here would be to present the percentage of waste cumulatively to date, which in comparison with the budget would enable the manager to see the extent of efforts needed to counter balance the adverse variance and achieve the budget. Apart from this, the same criticisms as those of the weekly form still stand.

As to periodic overhead statements, these are intended to help management control production overhead cost and to help the accountant prepare quarterly and yearly accounts. The production overheads are grouped by responsibilities and are provided to management on three statements as follows : corrugator overheads, machine lines and fittings overheads, and factory administration overheads.

Responsibility centre number one is under the works manager, whereas responsibility centre number two is under the works superintendent and responsibility centre number three is under the general manager.

The form presents the information under two main headings: salaries and wages, and expenses. It compares actual expenditure in comparison with budget for the period and cumulatively for the periods to date. However, the main criticism of the form is that its distribution is limited to top and senior management only.

A better distribution which stems from the object of the form is to provide the corrugator return to the corrugator foreman and the works superintendent, and similarly the machine lines and

fittings returns to the foreman and the works superintendent, with summaries of these only to the works and general managers, thus enabling lower levels of management to controlthe expenditure with top and senior managers to follow them up.

As to the factory adminis tration, this should be given to the works manager with a summary only to the general manager, to enable the works manager to control the cost and the general manager to follow it up.

In fact, these forms were used in 1964 as a result of top manager's use of the budget as a ceiling over the expense. At that time all purchases had to be authorised by the general manager who made sure that the expenditure was within the budget, and thus the control process was at source.

In 1965, the stock controller used to warn managers if they approached their budgets. However, the control process was relaxed a bit in 1965 as the budget was not considered as a ceiling over expenditure. It is still up to the manager concerned to exceed his budget. Thus, it is the process of control at source rather than the information which is used as a basis for control in this case.

3) Service Managers' Information System:

Service managers get periodic overhead statement related to the function under responsibility. In fact, the following statements are provided to management; transport, engineering, selling, canteen and welfare and management and administration.

Although the transport statement is not provided to the transport manager and likewise the maintenance statement is not provided to the works engineer, each of them is respectively held responsible for his budget.

In fact the transport statement is provided to the works manager whereas the engineering is provided to the general manager. This can be criticised on two grounds; the first is the fact that the manager concerned does not get the information is an indication that management is not serious

about control and therefore he would not take the trouble to use the system. Alternatively assuming that the manager concerned is highly conscious of budgets as a result of his education, training and experiene, this would mean to him that senior or top management are keeping the information from him and as such would frustrate him and deteriorate his relationship with his senior manager.

Secondly, the practice means in fact the concentration of the control process of different activities in top and senior managers, which would result in their concentrating on the most important areas alone, and as such would not use the overhead statements. In fact, this was exactly the case in this factory. As to the other statements, although they are provided to the manager responsible for expense, in fact apart from control at source described above, little use of them is maintained.

An Evaluation of the Empirical System

The system incorporates the following advantages :

a) The information is compared with budget; as such it works as the basis of discussion for all managerial levels; as the criteria of comparison and evaluation of actual performance.

b) The information gives first the whole picture in a summarised form, then it details the constituent parts on different supporting forms; thus helping managers first to see the whole picture, second to identify the main problem areas, and third to investigate these areas on the detailed form as a basis for corrective action. In sum, this form of presentation enables the implementation of the principle of management by exception, thus saving the manager's time and informing him about his performance and problem areas at a glance.

c) The information helps to show the trend; this is the most constructive piece of control information as it shows the manager, apart from historical information, what should be done to achieve his budget by the end of the year.

d) The information is pinpointing and as such helps the manager to identify his problem areas at a glance.

e) The periodic financial report is a means of exceptional reporting.

f) The canvassing or sellig campaign of the financial director in introducing the management information system to top managers helped them to understand it and received their backing and as such gave the system a higher probability of use.

g) The role of the accountant as an interpreter to top management, formally and informally, helped top management to a deeper understanding of the figures and the information, as such it gave the system a higher probability of success.

h) The basis of the information and costing system is an integration of the marginal and standard costing principle, a highly developed approach which is most suited to the circumstances of the factory.

i) The regular and constant follow up by group and local top management supports the use of the system by factory top managers.

However, the main criticisms are :

a) The concentration of consultation and information round the very top manager.

b) The concentration of the interpretation service round the very top manager.

c) Variable budgets and information are extremely tentative. In the existing circumstances of this factory, a study of cost behaviour and the degrees of variation is most important as a basis for cost control as one element of building efficiency.

d) Sales mix budgeting and information must be improved to suit the particular circumstances of the factory.

e) No limits or bands of tolerance as suggested by the theoretical model are adopted. In this case this is extremely tentative as it is left to managers' experience and judgement.

Apart from the criticisms outlined above, this is a developed information system which considers the particular circumstances and problems of the factory. As such, apart from non-provision of the information to some managers, there are no other reasons which prevent managers from using the information. On the contrary, the system should enhance such use.

SECTION IV: FINDINGS CONCERNING MANAGERS' USE OF BUDGETARY INFORMATION.

This section presents the findings of the case study which concerns managers' use of the budgetary information. The findings are presented in two parts; first findings concerning managers' use and second the factors which affect such use.

Manager's use of Budgetary Information

The evidence (1) suggests that out of the nine managers studied, one uses his budgetary information in accordance with the theoretical model, six use their information in a limited sense, and two do not use the information at all.

The nine managers studied belong to the three major detailed control systems of sales, production and services.

On the sales side, three managers were studied. The analysis of the evidence suggests that the three managers use their sales budget information and do not use their cost budget. As such, their use is limited.

On the production side, five managers were studied. As a result, it has been found that one manager uses his production and cost budget information, with two only using the production budget information, and the other two neither use their production, nor their cost budget information.

On the services side, one manager was studied. As a result it has been found that he uses only limited parts of his budgetary information.

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(1) For a detailed discussion and illustration of the method of analysis adopted in establishing managers' use and the factors which affect it, see Appendix 'D', Volume II, p. 129.

Thus, to conclude, most managers use the system. However, only one of them uses it in accordance with the theoretical model of use. Moreover, managers tend to use the most relevant budgetary information only, since most of them use the production and sales budgets and do not use the cost budgets.

Factors which affect Managers' Use

a) Findings based on Managers' Opinions Alone :

According to managers' views (1), it seems that the factors which support use in this case are participation in budget setting, regarding the budget as practical, and senior manager's follow-up.

Moreover, the evidence suggests that manager's participation in budget-setting is very important since it improves his morale and status. It also furthers the manager's interest and backing to his budget. However, on the basis of managers' opinions alone, it is difficult to conclude the effect of participation on the accuracy of the budget. But, on the basis of cross-checked opinions and facts, it seems that participation results in a practical budget.

On the other hand, the evidence seems to suggest that participation furthers the manager's interest in his department and thus furthers his departmental-centredness. It also deteriorates cooperation between the managers with the same status. However, it must be emphasised that this is a small and a new factory, with each manager trying to extend his authority.

However, it seems that participation improves cooperation between the manager and his senior manager, and does not

(1) Appendix 'C', Volume II, Tables C_1 to C_{42}, pp. 85-128.

affect cooperation between the manager and the accountant. But on the basis of managers' opinions alone, it is difficult to deduce the effect of participation on cooperation between the manager and his foremen.

Furthermore, the evidence suggests that the senior manager's follow-up helps to communicate the department's problems to the senior manager. It also furthers the manager's use of the budgetary information. Moreover, it seems that follow-up improves the manager's morale and the cooperation between managers with the same status. It must be emphasised, however, that this is a small sample.

Moreover, the evidence seems to suggest that follow-up improves cooperation between the manager and his senior manager, and does not affect cooperation between the manager and the accountant. However, it is difficult to deduce the effect of follow-up on cooperation between the manager and his foremen.

b) Findings based on Cross-checked Opinions and Facts

The analysis of factors (1) which affect managers' use of the budgetary information suggests that the manager who uses his budgets in accordance with the theoretical model, uses it mainly as a result of high education. For he uses the information even before he is followed-up and moreover although he is followed-up on one budget and not the other, he uses both budgets whether he is followed up or not.

As to the six managers who use the budgetary information in a limited sense, three managers use it mainly as a result of follow up. For although they are poorly educated they use their budgets. Moreover, they use only those parts of the information which are followed-up by their senior manager.

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(1) Appendix 'D', Volume II, p.147 and Table D_1, p.154

One manager uses the budgetary information as a result of high education, for although he is followed up the effect of follow up is so small in this case since he uses his budgets even before he is followed-up. Moreover, follow-up is only occasional in this case. Thus, follow up in this case does not establish use but only supports it.
The other two managers, however, use their budgets as a result of both education and follow-up since they use a little more of the information than those parts which are followed-up. Therefore, use in this case is not only due to follow-up but also to education.

As to the other two managers who do not use the information their non use is related to their attitude of close supervision. As such they use their experience as a basis for control and watch their workers closely rather than study the information and control on its basis. This attitude of close supervision may be related mainly to their long experience without budgets and poor education.

Follow up is not effective in this case as one manager is followed up and still uses his experience as an alternative to the information, whereas the other, although not followed up, uses his experience as an indication of his attitude of close supervision.

The evidence suggests that managers use the most relevant information only, and that they use those parts of the information which are followed up by their senior manager.
As to the other supporting factors(1), those which do not by themselves establish use, but support it, these are :

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(1) Appendix 'E', Volume II, p.185.

training and long experience in budgets, participation or consultation in budget-setting, accountant's role as an interpreter, and incentive in terms of reward and security of the job. Moreover, the provision of simple information to managers supports use.

As to the factors which hinder or limit use, these are : poor education, lack of training in budgets, non-consultation in budget-setting, non-follow up, regarding the information as irrelevant, the non provision of the interpretation service by the accountant, and having long experience without budgets. The evidence also suggests that provision of too much information and the non-provision of information to managers limit use.

The identification of the factors which affect managers' use of the budgetary information in itself suggests the remedy to the problem of non-use of the information and that of limited use. Thus, since the main reasons behind non-use are poor education and non-follow up, the remedy becomes that of educating managers and following them up on the basis of the information.

CONCLUSION

To conclude, the findings of this case, on the whole, confirm those of the first case study since they suggest that managers use the budgetary information mainly as a result of high education or senior manager's follow up, or both.

CHAPTER VII.

THE THIRD CASE STUDY : FACTORY 'C'

The object of this chapter is to present the budgetary planning and control system in Factory 'C'. It also presents managers' use of the system and the factors which affect such use.

This chapter is divided into four sections as follows :

SECTION I presents the Environment of the Budgetary System:

- Environmental Circumstances
- Cost Structure of the Industry
- Ratio Analysis
- Main Problem Areas

SECTION II presents the Planning Stage :

- The Theoretical Model of Operational Budgets
- The Empirical System of Operational Budgets
- An Evaluation of the Empirical System

SECTION III presents the Control Stage :

- The Theoretical Model of Control
- The Empirical System of Control
- An Evaluation of the Empirical System

SECTION IV presents the Findings Concerning Managers' Use of Budgetary Information:

- Managers' Use of Budgetary Information
- Factors which Affect Use
  - (a) Findings Based on Managers' Opinions
  - (b) Findings Based on Cross-checked Opinions and Facts.

- Conclusion.

SECTION I: THE ENVIRONMENT OF THE BUDGETARY SYSTEM.

The object of this section is to present the different environmental circumstances of the budgetary system.

A. Environmental Circumstances

1. This is a high quality jobbing printing factory. It handles all kinds of jobbing printing with the exception of specialities in the trade such as stationery and the like.

   The Federation of Master Printers divides the industry into different branches :

   1. Letterpress printing
   2. Multi-process printing
   3. Book printing
   4. Carton printing

   The first two branches are further sub divided by size.

   Factory 'C' compares with the multi-process printing group, since it does not specialise in certain lines , or certain printing techniques such as letter press or Lithography.

2. The factory employs 350 workers, which is considered to be a fairly medium-sized firm in this branch of the industry. This branch is sub-divided by the Federation into two main groups; those employing less than 100 workers, and those employing more than 100.

3. There are four main levels of management; group top management, factory top management, factory senior management and factory departmental management. (Chart VIII.)

4. Recent changes in top management brought about new policies.

5. This is a jobbing factory which does not deal with a standard product; orders are obtained through the submission of estimates.

B. The Cost Structure of the Industry is as follows :

Materials	30%
Labour	34%
Overheads	36%

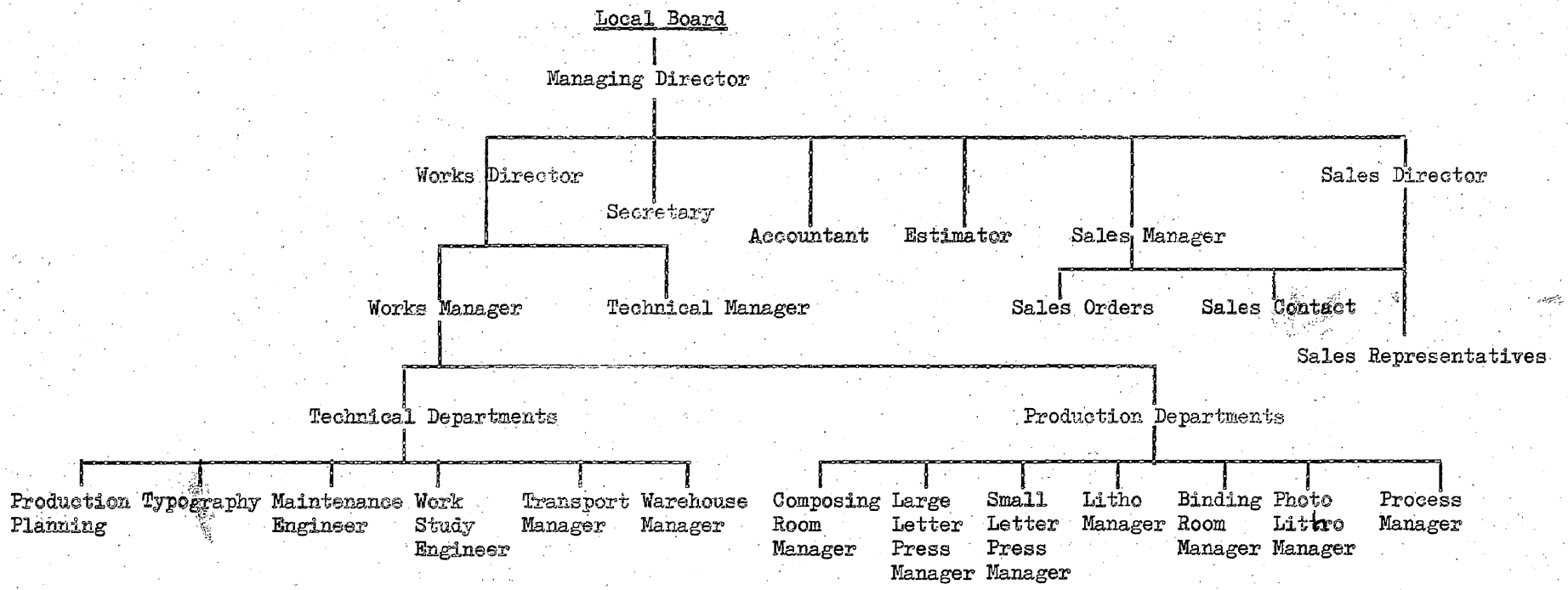

CHART No. VII 1. ORGANISATION CHART FOR FACTORY C.

a) As to materials, the main controllable item is waste (spoilage). Although in comparison with the industry, the ratio seems to be under control, the factory accounts reveal that this is not true since the deviation from budget is neither reasonable in extent nor random in movement.

The main problem with the control process in this case is that it is tentative since there are no scientific standards for waste or materials usage. Moreover, unlike the case with factories 'A' and 'B' waste in this factory is spread on different production processes. Therefore, it is relatively more difficult to control. Thus, waste control necessitates greater efforts on the part of the departmental managers.

b) As to labour, this represents nearly a third of the cost structure. Thus its control in this factory is more important than in factory 'A' and 'B'. However, the control of labour is facilitated by the development of scientific standards. However, the control of labour is concentrated round labour's efficiency and utilisation. As such, this again is the departmental manager's responsibility.

c) As to overhead, this represents nearly a third of the cost structure. Overheads may be controlled in two ways; on the one hand through keeping the budgeted production volume, and on the other through responsibility budgeting. This again is the departmental manager's responsibility.

Thus, most of the cost structure is controllable by the manager.

C. Management Ratios' Comparisons

The factory on the whole does not compare favourably with the average firm in the industry. This is indicated from a study of the Federation's ratio scheme. The standard comparative ratios in the scheme are those of the lower quartile, median and upper quartile firms in the industry.(1)

(1) The median and quartiles of a group may be defined as follows : if the members of a group are ranked in order according to the measurement under consideration, then the measurement of the member most nearly one quarter, one half, and three quarters respectively along the rank are the lower quartile, the median, and the upper quartile.

The ratios are those of 1962. This branch of the industry compares with 37 firms. The comparisons are as follows :

a) Return on capital; this ratio shows how factory 'C' generally stands in comparison with other firms in the industry. It shows that the return of factory 'C' is less than the average, and upper quartile firm. However, it is better than the lower quartile firm. It is in the mid-point between the lower quartile firm and the average firm. This ratio is affected by operating costs and use of capital. So the next step is to see how factory 'C' compares with these ratios.

b) Profit % of value of production (which is net sales adjusted for differences in opening and closing work in progress, less diredt materials). For factory 'C', the operating profit ratio is less than the average and upper quartile firm. However, it is much higher than the lower quartile firm. This is probably an indication that operating costs are unduly high.

c) Cost of production % is higher than the average and lower quartile firm.

d) Cost of transport and selling % is higher than the average and lower quartile firm.

e) The only cost which is less than the average firm is cost of administration. This is partly because the firm is one of a group(large-scale management organisation), and that some functions have no managers.

So right away, the ratios show that operating cost of production, selling and transport does not compare favourably with the average firm in the industry, and only the cost of administration compares favourably with the average firm and nearest to the lower quartile firm. So, one main problem of this factory is the unduly high cost of production, selling and transport.

f) Use of capital ratios:

i) Net sales/capital employed. This ratio shows a grave situation, as the ratio is lower than all comparative ratios in the industry. It shows that sales (value) is not high enough to fill the available capacity (value). The ratio is less than the lower quartile by 22.2%, less than the average firm by 36% and less than the upper quartile by 54.5%.

This right away shows a problem of increasing sales value. This can be done either by increasing sales volume, or price, or both. However, as it is almost impossible to increase price as competition is very high, the only available answer is to increase sales volume. (This if the factory can keep the 1962 prices would increase the return ratio as the factory would be working near full capacity).

ii) Fixed assets/capital employed. This ratio is higher than the average firm which means that the percentage of capital left to finance current operations is less than the average firm in the industry. However, this is not a serious problem in this case since the factory depends largely on the group for finance.

iii) Materials consumed/stock of materials. The ratio is higher than the average firm in the industry and very near to the upper quartile. However, the problem of having some customers who provide their own material inflates the ratio,

iv) Trade debts/sales per day. This ratio is higher than the industry. This is one of the disadvantages of the group since the factory more or less depends on the parent company for cash and finance. This works as an incentive to give longer periods of credit in order to attract sales and not to offend customers.

D. Main Problem Areas

The above mentioned ratios give a general indication of the company's cost and financial position and its comparative position in the industry. It indicates that on the whole the factory is worse than average and upper quartile firms, however it also shows that the factory is better than the lower quartile firm. In fact, it is the 23rd firm out of 37, assuming that the industry is ranked from best to second best, etc.

From the ratio analysis it appears that the main problem areas therefore are :

1. Cost of production
2. Cost of transport and selling
3. Sales
4. Capacity
5. Credit terms

As to cost of production, direct production material compares favourably with the average and upper quartile firm. However, it is slightly over the lower quartile firm. Furthermore, spoilage ratio is compared favourably with the upper quartile and average firms, it equals the lower quartile firm . So there is no problem as far as material cost and spoilage is concerned, this can be deduced to be reasonably under control.(1) The main problem areas in production cost must therefore be wages, or overheads, or both.

The keys to all these problems are efficiency and volume. Both necessitate the implementation of an effective system of control. As such these problems encourage rather than hinder the development of budgetary control. In fact, it is an absolute necessity that managers should use their budgetary information in this case.

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(1) However, in comparison with the factory's accounts it seems that spoilage is not under control since the deviation is neither reasonable in extent nor random in movement.

SECTION II: THE PLANNING STAGE

This section presents the budgetary planning system in three parts. The first part constructs a theoretical model, the second presents the empirical system, and the third evaluates the empirical system.

The Theoretical Model of Operational Budgets

There are three main budgeting approaches in general theory; the sales budget approach, the production capacity approach, and the profitability approach. Furthermore, the theory states that each company's particular circumstances are best suited to a certain approach rather than the others.

Taking the three main approaches one by one, the sales budget approach is difficult to apply in this case, since this is a jobbing factory and according to the Federation's statistics the job size is not very large. The ratio of value of production to printing jobs is £194.2 per job, and although this is larger than the industry generally, it is still a small job value. This means that on average the factory is dealing with many thousands of jobs a year.

So if the factory's management adopts the sales budget approach, it has to go through a laborious job to survey the market. This could best be done in the same way suggested for factory 'A'.

However, the main disadvantage of such a proposal is that it is quite a laborious exercise since it would mean more or less evaluating each potential order and the ability of the company to secure it. Taking into consideration that the industry on average has about 250,000 orders a year, this shows how laborious the exercise could be, but considering that sales represent one of themain problem areas of the company, and that each member of the sales force and sales management participates in this exercise, it becomes a matter within the reach of the factory.

Sales planning then, being most difficult in this case, could have been carried on as accurately as possible according to the proposed method. However, this firm's management did not choose

this approach.

The main second approach which the firm could have followed is the production capacity approach. Briefly this approach entails the evaluation of actual and potential capacity, and within the profitability objective of the factory the estimated capacity could be arrived at, and agreed with sales and general management, first to see whether this production capacity could be filled by sales, and second to see whether the agreed sales production capacity tallies up with the factory's objectives. This approach would result in a practical production budget, but rather vague and unrealistic sales budget unless the earlier proposed method of sales planning is adopted on the sales side. Taking into consideration that the main two problems of the factory are sales and under-capacity utilisation, the two problems are inter-related, although dealing with one alone does not automatically solve the other; as the ancillary problems of sales mix and balancing the work through the factory would then appear. So solving the sales problem through detailed sales planning and effort may actuate the problem of balancing the work volume through the factory, although it may in part solve the under-capacity problem. On the other hand, solving the problem of under-capacity through detailed planning of production capacity may result in a vague sales budget and may accentuate the sales mix problem.

However, although this approach would give the factory's management an objective basis to evaluate production, departments' actual performance, unless coupled with a detailed and careful sales planning, as that proposed previously, would result in a vague and total figure for sales budget and sales mix which would not be achieved except by chance since no detailed plan of action has been given by sales management.

The third approach which could be adopted by the factory is the profitability approach. Management could have said that our return on capital is too low as compared with the industry, and other members of the group, so our objective would be to achieve a better return index through increasing sales, trying to maintain sales price or

decrease it in a less proportion than the increase in sales, more utilisation of production capacity, and decreasing the cost of production selling and distribution. However, this would mean a serious and detailed planning of most aspects of the firm's activities; sales, production capacity and cost. This, by far, would be the most theoretical and objective approach to follow in this case since it provides a plan of action which starts by how to solve the main problem areas. However, unlike the other methods which start from the base of the managerial pyramid, this approach starts by viewing the company's problems from the top and initiating plans of action to follow them, from the top. It also entails laborious and detailed planning exercises in four main aspects: profitability, sales, production and cost.

This approach however, althoug logical, means trying to solve all the main problems of the factory at the same time. It also assumes a dynamic management from top to bottom. So this is difficult and unfeasible to apply in the existing empirical circumstances of the factory. Another approach has to be found which meets the theory in broad terms, and at the same time considers the practical difficulties and limitations and tries to deal with the main problems one at a time.

This new approach would have to involve a careful and detailed planning of sales, at the same time an independent detailed planning of production capacity and a decisive compromise (co-ordination) of the two independent sides within the firm's profitability objectives. This new approach entails using the best of all three theoretical approaches, as well as taking into consideration the peculiar circumstances of the factory since apart from being applicable, it deals with the two main problem areas of sales and under capacity utilisation. However, solving these two problems would automatically solve the cost problem in part, since the overheads would not increase in the same proportion as the volume of sales and production , and so would be distributed on a larger number of products.

The previous discussion provides a theoretical budgeting model which, apart from considering the general theory of operational budgeting, it allows for the peculiar circumstances, problems and resource limitations of this factory. Thus this model could be applied to the company in the short term on the assumption that the factory may need to switch to the third approach of profitability as the system develops within a year or two. Then, when the main problems of the company are solved, the factory can then switch either to the sales approach, or to the production capacity if it approached a full practical capacity level.

D. The Empirical System of Operational Budgets

The main representative sample of the system is the 1964 budget. This was prepared in this way :

1. An estimated sales figure of £6 (1) was arrived at in a meeting of the group sales director, the managing director, and the works director. It has been ascertained from interviews with top management that this figure was more or less the managing director's figure. It so happened that the factory nearly achieved this figure in 1963. However, it was less than the budgeted figure of £7.10 by 20%.

   The managing director, being of strong personality, suggested that figure. The works director, seeing it as an easy target and knowing how the 'wind of power blows', supported his managing director, so the group sales director had to accept it, and thus the figure was accepted by the local board. In an interview with the managing director he claimed that he arrived at that figure in the light of past experience and production capacity of the factory. He also said that if the factory achieved this budget it would be working at maximum capacity, and that arriving at a target figure in this way makes it more difficult for the sales force than otherwise would be the case if the sales management arrives at a target.

(1) This is an imaginary figure which coincides generally with the actual figure. Its value will be apparent as the discussion develops.

However, it has been ascertained that this argument is not true for many reasons; the budgeted figure of 1964 more or less coincided with what actually had been achieved by September 1963, as the factory's actual sales then were £5.17. The factory was not working at full capacity level at all as can be seen from the Federation's ratios, making it a difficult target is again not true since the group sales director suggested a higher figure and this was lately recommended by the parent board. Therefore, the whole argument is groundless.

The explanation is that the budgeted figure was a result of balancing personal powers of directors in the board room, and that the managing director did not want to exert any more efforts than that exerted in 1963; that he wanted to provide an easy target so that if he achieves it or goes beyond it, he will have even more power against the group directors, and if he achieved that figure in the year before, he was sure he could achieve it again.

2. The total estimated figure of £6 was then divided by the sales area director in consultation with the managing director into individual targets for representatives in different areas according to past experience (what has already been achieved) and what the managing director thinks is feasible to be achieved by each representative. Thus no market surveys, sales analysis as to mix, quantity or price were carried on at all. In fact no sales planning at all was carried out, it was just a total figure proposed by the managing director and subdivived into individual targets; sales were just given in value, we expect to sell (£6) next year.

3. In mid October 1963, before arriving at the sales estimated figure, the preparation of the production budgets started by the factory's secretary, and then group system designer, who actually designed the system of cost control information for the factory. He started by the labour budgets. The factory accountant compiled information about the actual number of people working in each cost centre,

and he compiled their actual wages from the pay roll. The figures were then checked by the secretary and presented to the works director for approval and to provide the potential labour needed in the light of his experience.

4. By November 1963, the secretary knew that the estimated sales figure was £6. The secretary then estimated the overtime needed in the light of 1963 actual overtime. The estimated figures were then approved by the works director.

5. The main basis of the direct labour budget was arrived at in two consecutive meetings attended by the factory's secretary, the accountant, the works director and the work study engineer. At the first meeting, the following matters were agreed :

a) Number of additional staff needed for each department

b) Overtime for each department

At the second meeting :

c) The true performance (efficiency index) was agreed at 133.

The efficiency figure actually achieved in the three months of putting the new incentive scheme into experimental operation were discussed, and the estimated efficiency index of 133 was taken as the figure for the 1964 budget in the light of expectations of the consultant firm who put the incentive scheme into operation. The main considerations to adopt such figures (according to the meeting minutes and interviews) were :

1. The expectation of the consultant firm

2. The factors which govern any department up to 133 performance should be controllable.

3. A more accurate picture from a control point of view will be shown by using a 133 index, since the factory will not be building any inefficiencies into the budget rates (selling rates used for estimation). The meeting minutes' report continues "we calculate that in doing this we should not lose anything in terms of under-recovery of overheads, as the more efficiency departments currently balance out the less efficient ones".

d) Departmental Activity Indices : in calculating this figure which indicates the % of attendance, time spent on productive work (attendance time less the non-productive time) expected in 1964 for each cost centre, the particular activity index and non-productive time for each cost centre were compiled for three periods in 1963 to help budgeting for 1964. The three periods were 8, 9 and 10 (1) - with only period 10 under the new incentive scheme and scientific standards system. The mean index of the three periods was generally taken as the estimated index for the 1964 budget. This average was then discussed with the works director and minor adjustments were made according to expected circumstances.

As the wage rates were known from the pay roll, and the future changes can accurately be calculated according to terms of employment and trade unions' agreement, the direct labour budget becomes a simple arithmetic exercise. This then becomes the weekly direct labour budget

, The periodic (nearly a month), quarterly and yearly direct labour budgets are calculated on the same basis with minor adjustments for holidays. The compilation of this gave the 1964 direct labour budget.

6. A third meeting was held to discuss and agree the indirect labour budget figures. The main problem was to determine the number of employees leaving and the additional number of staff required in each department.

7. All of these estimates and calculations were then sent to the group cost accountant, who prepared the direct and indirect expense budgets, the master budget, the balance sheet budget and a five years long term budget.

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(1) These periods denote roughly October, November and December.

Direct and indirect expenses were based on past history and the group cost accountant's experience. A certain average was arrived at by him and adjusted for expected changes.

He also estimated the opening and closing stock figures for 1964.

As to the material estimate, he took a certain percentage to sales, determined through his experience, on the basis of past data, to represent the material budget. No material mix, price or quantity were estimated. It was only a figure; our material budget is X% of sales, that is so much sterling pounds.

He then coordinated all these estimates into a master estimate (the estimated profit and loss account). This then concluded the operational estimate for 1964.

The master estimate was then submitted to the local and parent board for approval. The estimate was approved by the local board.

8. After studying it, and consulting the group sales director, the group financial director recommended the parent board to reject it on the basis that the sales figure is too low. The figure was then adjusted to £8, a 33% increase on the original estimate. However, the figure represents a minimum increase of £-.10s.0d. on 1963 budget which was £7. 10. 0d.

This final estimate was then approved by the local and parent boards, and was regarded as the 1964 approved budget. The only figures which were adjusted accordingly as a result of increasing the sales figure by a third were the material figure, the variable, and the semi-variable expenses. The direct and indirect labour budgets were not changed at all.

9. To complete the picture, the group cost accountant prepared a balance sheet estimate and a tentative 5 year long term master

estimate. The fixed assets estimate was based on top management's recommendation (managing and works director) of their requirements and disposal of capital goods. Once this information is known, he estimates the fixed asset balance at the beginning of 1964 (actual balance in September 1963 - depreciation for three months + additions - disposals and depreciation).

The current assets apart from cash are estimated on a number of sales weeks targets. Stock must be four weeks, and debtors so many sales weeks and so on.

Then the sources of finance are estimated; the balance between the two sides represents the estimated cash for 1964.

10. The 1964 budget represents the first budget to be prepared in this way. Before then all the budgets were prepared by the group cost accountant on the basis of past data and experience. The main difference in 1964 was a more detailed labour budget. The system of budgeting started in 1957, because the financial director thought it necessary to prepare budgets at that time. It was developed in 1964 in the above outlined way because a new financial director was appointed who thought the old system was not detailed enough.

11. In 1965, the budget was prepared on the same basis, and the same target figures of labour budgets were taken again in 1965. However, the main difference was that the sales figure was planned by the company's secretary (the present de facto budget officer).

He compiled a minimum budget of £7.10.-. on last year's performance, and then suggested the figure of £9.-.-. which was more than 1964 budget (£8). The figure of £9 was approved by the local and group boards and was taken as the approved budget figure. All other budgets were prepared in the same way as last year (1964).

Evaluation of the Empirical Model

1. Although sales represent one of the main problems in the factory, sales planning was extremely tentative. No market survey or research techniques were adopted at all. Top management however, claimed that their industry provides a service to other industries and as such does not sell directly to the consumer, and that therefore the application of market research techniques are useless here. This conclusion although based on a statement of fact is untrue, since it assumes that market research techniques are only applicable to direct selling consumer goods. However, in comparison with the theoretical proposed model, it can be seen that the surveying of each representative's sub area, actual demand, industry's and factory's potential demand, the main competitors and their policies, his reasons for success or failure to meet his budget, is an essential market research technique in this case.

2. Simple statistical techniques were not used to analyse past data on a scientific basis, instead past experience was the criterion.

3. While everybody claims, and in fact there is a seasonal variation pattern with two peaks a year, no such pattern was calculated or accounted for in the sales budget. In fact the sales budget was more or less the production budget with the minor exception of estimating stock. Even here, there was no mention of sales variation pattern in the system. Faced with this, top management claimed that the seasonal variation is in certain types of print and not all. The group cost accountant claims that production and sales should be kept at a steady level all the time; and sales variation pattern is only an excuse to provide easy budgets.

These two arguments are basically unrealistic. To start with, the fact that certain products are seasonal does not mean that a seasonal variation analysis is unnecessary. On the contrary,

this makes seasonal variation analysis an imperative exercise, since by knowing the seasonal variation pattern of each product, and by evaluating the peak periods and the recession periods, management could then work to try to induce the customer firms to print those products at an earlier date, thus not only flattening the variation pattern but also helping to ease capacity problems at peak times and fill the under-capacity at recession times. This exercise is not outside the group reach, as the accountants in the factory and the group are professionally qualified, the techniques are very simple to apply, the past data is there, and this analysis is done in the same group, e.g. in factory 'A'.

4. Again no cyclical variation of the company's sales and the industry is carried out in order to help constructing long term capital, and master budgets, although the simple techniques of time series analysis, seasonal and cyclical variation are simple to apply.

5. The analysis of sales mix, although highly significant in this case since the company deals in all kinds of jobbing printing and uses different printing techniques, was not carried on at all.

6. Although sales is a basic problem in the company, no effort was made to solve it in 1964. It was not until a new local general manager had been appointed that action was taken to solve the problem. In 1964 the budget was put at a higher figure than 1963. However, no plan of action of how to achieve the figure was proposed by management. The group sales director claimed that he was studying the reorganisation of the group sales force on a group basis, rather than a factory basis, to have more control on factory 'C's sales force. However, this was never put in practice. The then managing director claimed that he was in the process of appointing a new sales manager. This only happened when the managing director resigned and a new general manager took over early in 1965.

Again, in planning the 1965 budget, the new secretary , who was the group system designer a year before, almost alone prepared the sales budget. He prepared a minimum budget of £7.10.- on what actually has been achieved in 1964, allocated it by territory and sales representative on the basis of 1964 performance, and suggested that the sales budgeted figure for 1965 should be £9. This was accepted by the sales area director and the board, but no plan of action on how to achieve it was proposed or agreed upon.

So the inference is that local management sees the sales budget as a budget and not as a programme of action, as they never tried to provide a plan of action to achieve the budget.

7. Even the least expensive kind of market research techniques, that is the one proposed under the theoretical model, is not applied. This if adopted could help in many ways :

a) If the estimates are not absolutely accurate, at least they are practical, based on realistic evaluation of the representative's area, and in this sense better than what top management think each representative should be able to get.

b) Information as to probable quantities, orders, mix and prices would be as practical as possible as they are based on factual information, and on the views of the nearest level of management to the area concerned.

c) Management would secure the backing of the sales representative by getting him very much involved, from the beginning, in the budgeting process, as well as by securing the phsychological benefits of consultation. However, this was discussed with nearly all managerial levels at the group and the factory's levels.

The old managing director did not approve of the idea of consultation on the basis that the representative would prepare a low or easy target for himself. The new sales manager thinks

that if they had been consulted as well, they would prepare an easy target. The new managing director does not think they should be consulted as this would change all representatives to managers and that the consultation process should stop at the sales manager level.

These arguments, although may seem to be true, are not factual, because they assume that once the representative prepares a target the management has to accept it. In fact they could be checked by his immediate senior manager, by the accountant and up to the top level in the sales management.

Another factual evidence from the same group which contradicts this argument is that in factories 'A' and 'B' representatives prepare their own targets and according to the sales manager and director, some prepare low targets, some practical targets and others prepare high targets, but it is the sales management's job to check all targets and make sure they are realistic and practical.

If the proposed method under the theoretical model is accepted, the representative cannot get away with easy targets as this would be checked by his own past performance by the accountant, his own estimate of probable demand, his senior manager's opinion as to whether the target is practical or not, and whether these targets tie up with the policies and the overall objectives of the factory.

It is only with these three main cross-checkings that a practical budget, accepted by all levels of management in the organisation, is secured.

8. The 1965 labour budget used the same indices of activity and efficiency as that of 1964 budgets. This is extremely tentative and involves :

a) That departmental efficiency and activity figures are static, and managers should exert the same theoretical effort as that of the 1964 budget .

b) That this practice does not take advantage of the actual performance information of 1964.

The first assumption is rather untrue. The efficiency index is wholly influenced by labour efficiency whereas the activity index is only partly influences by labour efficiency. Labour efficiency is never statis unless either the labour force achieved a differential maximum level or standards are extremely accurate and labour has arrived at maximum efficiency level. In the latter case this is almost impossible to achieve in a jobbing factory.

As to the first case, this would have been partly true in one department which uses the stabiliser, as it encourages inefficient labour to arrive at a differential level below the 133, as they get the same bonus as if they were efficient and achieving 133. However, as this may theoretically be true, factually it is not. It so happened that the manager of this department is very cost conscious, and through his effort he gets his department working at an average of 133 even with the stabiliser. This argument is also untrue as far as efficient labour is concerned as they were observed to be achieving 145 and 150 performances.

Although the mere assumption of 133 performance for all cost centres may be right in the 1964 budget as the scientific standards and incentive schemes were first tried then, it is not absolutely right for 1965 budget. This is proved by the departments' actual performance figures of 1965 which shows a favourable variance on efficiency figures for all productive departments except one. Therefore, it would have been better to take the trend value of the actual efficiency index in 1964 as a basis for the 1965 budget rather than taking the budgeted index of 1964.

As efficiency index trends seem to increase rather than to decrease as workers get more experienced with their jobs, and as workers' turnover ratio in this factory is reasonably long, it is realistic to assume that the efficiency index would increase in 1965 and 1966, providing that the minimum budgeted index should be 133, in order to pinpoint inefficiency and to tell senior managers where to guide and follow up.

Again this would seem that the activity index for 1965 should be increased as a result of the increased experience and efficiency of labour. Therefore the trend value could be taken as the 1965 budgeted index. However, it seems that, other things being equal, the same budgeted indices would be taken again in the 1966 budget. This would mean that departmental and factory efficiency would remain static which is neither logical nor factual. The business world is a dynamic organism and the budget officers have to take care of that if budgets are to remain as a tool of management.

9. In changing the sales estimate figures from £6 to £8, the labour budget was not changed. This is evidence that there is no correlation between the sales budget and the labour budgets in any scientific way and that the empirical correlation used is a very tentative one. The overtime figure estimated to produce £6 sales was the same to produce £8 sales. This is an extremely tentative practice which results in an inaccurate budget and as such makes it extremely difficult for the budget to be used as a measure of managerial efficiency of performance.

Theoretically speaking, the correlation of sales to production or vice-versa is done either by changing sales to production in terms of standard hours by using the efficiency index, or by changing it the other way round in terms of standard hours by using the standard selling rates. However, neither of these methods were applied, therefore relating sales to production is an extremely tentative and unscientific process.

10. Budgeting the material and expenses degrees of variation is extremely tentative and subjective, since it is based on the group cost accountant's view. This makes controlling material and expenses very difficult and subject to accusation by managers that the budget is loose here and tight there.

11. Department production managers were not consulted at all about their targets.

12. No procedure for preparation and compilation of budgets in the factory or the group is outlined. This makes it extremely difficult for newly appointed accountants to prepare budgets on the same steps followed by the previous accountants, as the process is only kept in the accountant's mind. It also makes it difficult to revise and improve the system. This procedure, if prepared, could be used to train junior accountants in the group.

13. There is no formal time-table as to which budgets are to be prepared and to their time sequence, although this is preferable according to the general theory and sound practice. In fact, however, there is a kind of informal time table which arose from the needs of the parent board, as the budgets must be submitted to the parent board for approval by the first week in December. Therefore, all subsidiary company's budgets must be prepared and approved by the local board before that time. The local board meetings are usually in the third week of November, therefore this is the last date by which all budgets must have been prepared. However, it is up to the secretary to start when and with which budgets. In fact he starts some time in the middle of Octoher and starts usually with the labour budgets.

14. As far as the general theory and theoretical model are concerned, the managers must know their approved budgets before the beginning of the New Year, and before they are asked whether they have achieved it or not.

So a copy of the departmental budget must then be provided to the departmental manager, and a summary, copy of all departments to senior and top managers, with a master budget for all top managers. In fact, no copy of the budget has been issued to any marager before the beginning of the New Year. On the production side, the first the manager knew about his departmental budgeted indices was after the first month when the works director asked him to provide reasons for low performances. It is from then onwards that the budgeted indices were to appear at the top of the daily information sheet.

As to the other items on the departmentalbudgets,the manager does not know them until he gets the actual monthly statement which is two weeks after the end of the month concerned. As the indices did not change in 1965, it could be concluded that managers knew their budgeted indices on the third day of the year. As to senior managers, they know the budgets from discussions and weekly information. However, as they never discuss material and expenses budgets, they do not know them until the first actual monthly statement.

As to top managers, they know them from board discussions and actual information statements. This practice seems illogical as the manager is held responsible for something from the beginning of the year and does not know about it until six weeks later on. However, the group cost accountant claimed that it was not done because of time. This was neither done in 1964 nor in 1965, and other things being equal, it will not be done for 1966.

The secretary claimed that departmental managers were consulted about their targets and therefore know about them before the budget year. Moreover, all managers interviewed said they were not consulted and their senior managers confirmed this.

To sum up, the labour budget is the only one which is near to the application of scientific principles with all the other budgets more or less approximations based on accountant's experience.

Thus, the budgetary process, apart from the labour budget, is extremely tentative. As such this is bound to have an adverse effect on managers' use of the information.

SECTION III: THE CONTROL STAGE

This section presents the control stage of the budgetary system in three parts. The first part presents a theoretical model. The second presents the empirical system, and the third evaluates the empirical system.

Theoretical Model of Control

Since the discussion here is confined to the general principles, therefore the same theoretical model of control presented in Factory 'A'[1] applies to this case as well. As to the detailed information returns, these are discussed under the empirical system.

The Empirical System of Control

This part presents the empirical system of control in three parts. The first presents the general picture or framework of the control system. The second presents the control process involved in the overall performance of the company, and the third presents the major detailed controls in the factory.

a) The framework of the control information system

The information system has developed gradually with the introduction of budgetary control by the group financial director in 1959, and the development of the system by the new group financial director in 1963 through his group system designer. Before 1963, the system provided monthly and quarterly information to top management, with quarterly information only to departmental managers.

The system at that stage was never used by departmental

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(1) Chapter V, Section III, p.155.

managers, because senior managers did not show any interest in it. It was not used by top management since they believed in close supervision, 'living close to it', as an alternative, and the only effective media of control.

Although the then group financial director and the group cost accountant explained the object of the system and regularly interpreted the information to top managemet on board meetings, the system was never used as a control model by top or departmental management. Top management at that time made very little use of it whereas departmental mangers took no notice of the system at all. Thus, although the system was designed by the accountant as a control model, in practice the system was never used by managers as such.

The main factor responsible was the opposition of top management to the system. Their attitude was that they have been controlling for years through 'living close to it' and no budgeting system would change that. The then top manager came through long experience rather than high education . He was a strong personality in his own right and was trying to build an empire within the empire; as such he was afraid of group control, influence or interference in the running of his factory. This was the main unfavourable factor which hindered the development of the system as a control model.

The system developed as a model of control only by the end of 1963, in spite of unfavourable top management's attitude as a result of the new financial director's interpretation and following up. Before 1963, the system was only a planning process for top management's interest, its main use was as a basis of fixing hourly rates for estimation.

In 1963, the group system designer through improving the old system, designed the present one. It is since that time that managers started to take notice of the system. The system provides different levels of management with daily, weekly,

monthly and quarterly information of actual performance in comparison with budget. The object of the monthly and quarterly information is to control the overall performance of the company, whereas the object of the daily and weekly information and some parts of the monthly information is to concentrate on certain areas thought to be important for control.

b) Overall performance of the Factory's Information System

This system of overall performance of the factory is operating on a monthly (periodic) and quarterly basis, However, they are complementary to each other since the monthly information is concerned with revenue whereas the quarterly is concerned with capital.

At the end of each period (4 or 5 weeks) a set of accounts is presented to management. This is comprised of the following statements.

1. Revenue account
2. Sales mix and profitability statement
3. Variance analysis statement
4. Financial report
5. Overhead expenditure statements

1. Revenue Account

This information is prepared by the group cost accountant and is presented to top management periodically. The revenue statement is the principle form with all the other forms as supporting details. This approach of reporting is most suited to top management's needs taking into consideration the time problems and the essence of top managemet's responsibility. A top manager is a busy man with responsibility for the overall performance of the company, and therefore the information given to him must consider these two problems. In practice, the information presented to top management does consider these problems. Presenting the main items in concise form on the top sheet gives the manager the whole picture, at the same time pinpointing the main problem areas. The top manager

can then turn to the more detailed statements to follow up a certain problem in greater detail. This, as mentioned before, saves the manager's time, gives him the general picture, thus helping him to see the wood from the trees, and enables him to study in greater detail the main problem areas.

However, the form is more concise than it should be. It gives less than the minimum breakdown needed. It presents the information in two parts. In the first part it presents sales, standard cost of sales , standard profit, and percentage profit to sales. In the second part it presents variances from standard profit; variances are divided into volume and expenditure, with a further subdivision of the expenditure variance to controllable and non-controllable variance. As a result of arithmetical calculation the form shows the actual profit figure. As such the form is very concise. In comparison with factories 'A' and 'B' the form does not show the gross margin or the main categories of cost.

As to gross margins, it is important to present it in this case as the variable cost represents the major part of the cost structure, namely 60%. Also as sales fluctuate greatly from the budget, then the effect of this on profitability and overheads must be shown separately. Presenting the gross margin would also enable the distinction of excess material and labour cost and as such help management spot excess cost.

However, although this was thought to be desirable, it was claimed that it is difficult to present the form in the proposed way, under the present accounts system. Another problem was the lack of standardisaion of materials. As to the first problem it should not be that difficult; technicalities govern the presentation to top management's needs which should govern presentation rather than the accounts department's problems. As to the second problem a temporary solution is to use the estimated material cost as the standard and whatever is over or under this figure be regarded as the excess material cost.

Again, as to the division of cost into different categories, although this is very important for control, it is not presented on the form. As such the top manager, unlike factories 'A' and 'B' cannot see the major cost deviations on the top form, and therefore he cannot pinpoint the main problem areas. This is a major draw-back of the form.

The form compares the actual performance figures with the original budget and shows the variance separately. This is presented for the period and cumulatively for the periods to date. Another comparison is with last year's cumulative actual figures to date. Thus the form does not compare actual performance with the variable budget, and although this seems to be important since sales fluctuate greatly from budget which makes comparison with original budget only meaningless, it is not of great significance here as the form only presents very few items which are self explanatory without the variable budget. However, if greater details are to be included on the form, and the same problem of sales fluctuations from the budget is still existent, a comparison with the variable budget becomes a necessity since comparison with the original budget only becomes meaningless.

The subdivision of expenditure variance to controllable and non-controllable variance is a crude one; the non-controllable was taken to represent the difference between the original and the variable budget, whereas the controllable variance represents the difference between the variable budget and actual performance. As mentioned earlier, the basis of the variable budget is a crude and non-scientific one. As such this division helps a general discussion but not a responsibility pinpointing and detailed one.

The form is presented periodically, two weeks after the event, and as such is frequent and prompt enough. Its language, as long as it is explained by accountants, is reasonably easy to understand. Its form of presentation is the columnar form which is relatively easy to understand by non-accountants.

As to responsibility of the different items on the form, these can be assigned as follows : fluctuations in the standard profit, the ratio of standard profit to sales and volume variance are sales management's responsibility as they mainly result out of variances in sales price and volume whereas controllable expenditure variance is mostly works management responsibility. The volume and non-controllable expenditure variances are mainly sales management's responsibility. However, a part of the variance is due to the collective responsibility of both sales and works management.

Although theoretically the accountant's view was that the form is a control model, in practice management never used it as a control model. The form was used by group top managers to follow up local top managers and point out problem areas. However, the effectiveness of following up here depended to a great extent on the personality of the group top manager. In fact, following up by some functional group top management was ineffective.

The form was also used by the group financial director, group cost accountant and the company's secretary as a means of educating local top management. The financial director did follow up certain points and explained their financial implications. However, the form was not used by local top managers at all; their main use was to provide excuses rather than factual reasons for worse than budget performance. Even their attitude was unfavourable towards budgets. As a result they used their experience, judgement and informat reporting through being close to the technical process as the main criteria for control rather than budget or figures. However, as a result of constant group pressure and following up, they used certain parts of the information as will be seen later on.

The scene at local top management level has changed gradually through reorganisation. A new group managing director was appointed; as an expert on reorganisation with directorship powers. In 1965 the managing director retired and a new

general manager took over, the system designer was appointed as company's secretary, and the production planner as the works manager. The new general manager appointed a new sales manager who started reorganising the sales force, and the area sales director became the company's sales director. All this resulted in new policies, and more important still, a new attitude towards group management.

This is evidence of how much reorganisation was needed but could not be implemented because of the managing director's personality and attitude. It also shows how many changes could be implemented as a result of the appointment of a new top manager.

It is still to be seen whether local top managers will use the budget in the future. It can however be deduced that group top management will keep using the budget and the information as a basis for following up certain problems and through joint discussions on the board will suggest specific remedies and policies and then leave it to local top management to implement them, with group management following up the effect of those policies.

Although local top management are still new and therefore not familiar with the information, their attitude to budgets is favourable. The main problem at present is an educational one. If this is moved, it can be envisaged that top management will make a greater use of their budgets and information.

To conclude, although this form was intended to be a control model from the accountant's point of view, in practice the form was not used as such by top management, as the old management had an unfavourable attitude to budgets and the new management is still in the education stage.

2. The Financial Report

The report is prepared by the group cost accountant and is presented to top management. The report is a comment on the overall performance of the company which pinpoints the main problem areas, and as such it is a reporting by exception.

This report is even more important to managers since it explains in non-technical language the results of the period and pinpoints the main problem areas.

However, the use of the report by managers follows exactly the same pattern as the revenue statement.

3. Sales Mix, Volume and Profitability

This is a detailed supporting statement to the revenue account. It shows the main products of the company under the main production processes; letterpress, lithography and process or block-making.

It presents the actual figures of sales and profits in comparison with budget, for the period and cumulatively for the periods to date. Another comparison is with last year's actual cumulative sales to date.

However, the major drawback of the form is the crude general classification of products. A detailed classification based on the major products of the company should be adopted as this would help control as well as planning.

As this is a supporting statement to the revenue account, its use follows the use of the principle statement. As such little use is secured.

4. Analysis of Variance Statement.

The form presents a summary of departmental cost. It is divided into two parts, the first presents a summary of production departments labour and overhead costs, whereas the second part presents the factory's indirect expense and the cost of other service departments in the company such as engineering, administration, selling and delivery.

The first part shows the standard direct labour cost, and the excesses as a result of variations in non-productive time, efficiency, pay rates, overtime premium and bonus. It also gives the cost of departmental indirect labour and indirect expense. The total represents the total cost under shop floor managers control, as such it is the works manager's responsibility.

The second part of the form presents other overheads which are grouped by functional responsibility, factory indirect expense, engineering, selling, delivery and administration. Thus this statement, apart from being a supporting detail to the revenue account, is in a sense a complementary part of it.

The form compares the actual performance with both original and variable budgets, and shows the controllable variance for each item; the difference between actual performance and the variable budget. This is presented for the period under consideration and cumulatively for the period to date. As such the form explains in greater detail the variance figures on the principal statement; i.e. the revenue account. Therefore this is an integral part of the revenue account and the control system. It pinpoints the controllable variance for each item, and therefore pinpoints their responsibility and facilitates following up by top management. However, as mentioned before, this part like the revenue account, is not used for control.

Although all the items on the form apart from selling and administration concern the works and therefore come under the works manager's responsibility, investigation shows that the works manager does not get the form. If he did receive the form, it would facilitate the works manager's understanding of the overall performance of the works and as such would give a higher probability of use. The fact that the senior manager who can control most of these items does not get this information is a major drawback in the system and as such hinders its use.

5. <u>Departmental Labour and Overhead Statements</u> :

These are detailed supporting statements for all departments in the company. They are given to top managers to help them follow up certain problems on the major forms, revenue account and variance analysis. The statements concern certain managers who are responsible for the expenditure, and they pinpoint responsibility and enable the exercise of following up as a state of control.

Each statement presents the direct labour cost at standard and the excess cost in terms of variations in non-productive time, efficiency, pay rates, overtime premium and bonus. It also presents the indirect labour cost and overhead under major items.

As to their use, however, it follows the revenue account pattern. Thus it is not used as a model for control.

To sum up, these are the main statements provided periodically to enable the overall control of the company's revenue performance by the company's group and local top management. To complete the picture, quarterly information is provided to top management to enable them control the overall capital expenditure. The statements provided are the balance sheet, the capital statistics statement and the movement of funds statement. Their design is exactly the same as in factories 'A' and 'B'(1). Unlike factories 'A' and 'B', however, no graphs are presented to management.

Moreover, although the forms are highly developed as mentioned before (2) they are only used by the financial director as a basis for group capital control.

Although in theory and in the accountant's view the information could be used as a control model in practice managers do not use the information as a basis for control.

c) Major Aspects of Detailed Control Information System:

The discussion will follow the different control systems actually working in the factory. These are as follows :

1. Production managers' information system
2. Service managers' information system
3. Sales managers' information system.

1. Production Managers' Information System:

The system provides managers with daily, weekly and monthly statements.

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(1) Chapter V, Section III, p.161.

(2) Chapter V, Section III, p. 168.

a) Daily Information

The factory has seven production departments, each of them under a departmental manager. However, only five of them are on scientific standards. Each manager receives daily, weekly and periodic information to enable him control his department's activities.

The daily information for production departments on scientific standards is collated and presented by the work study department to the departmental managers. The information comes originally from the shop floor, through the work sheets which are filled by workers and checked by the manager or the foreman.

The work study department evalutes the work sheets, prepares a daily control sheet for each cost centre within the production department, and presents it to the departmental manager concerned two days after the actual performance, e.g. Wednesday for Monday's work.

The form presented the following information :

(i) clock hours; total attendance time sub divided to productive and non-productive time, with a further subdivision of non-productive times into its major components.

(ii) Standard hours; productive time in standard hours; calculated on the basis of the scientific standards provided by the work study engineer according to the stop watch method.

(iii) Activity and performance indices; with a further sub division of performance index into effective, pay, and true performance indices. Furthermore it explains how each index is arrived at.

It is a returnable form which is returned each day to the work study department, in order to enter the actual performance of the following day.

At the top of each form the budgeted indices of activity and true performance are shown.

In order to evaluate the form, one must study the object of the form and see whether the information provided satisfies the object and whether managers' use it.

The main objects of the form are :

1. To enable the departmental manager to control his direct workers' performance, activity and efficiency, and as such indirectly their cost.

2. To be used as a basis for periodic accounts.

The form shows the activity index; which is the percentage of clock hours spent on production to total clock hours, and compares it with the budgeted index. It further analyses the non-productive time to its major components; thus enabling the manager to control his non-productive time through concentrating on the main causes and re-allocating his superivsion time, thus enabling management by exception.

It then provides the manager with the efficiency of labour through the performance indices. It first gives an overall guide of efficiency of labour through the effective performance index which shows the percentage of standard production to attendance time; clock hours. It then proceeds to give the index of true performance which is the percentage of standard production to attendance time spent on production only, thus showing the effectiveness of efficiency of labour in performing the productive work. Then it presents the pay index which is the percentage of standard production plus non-productive time to attendance time; thus giving an indication of labour cost.

Being a reutrnable form which shows the performance of all the days in a period on the same form, it enables the manager to watch the trend of activity and efficiency of labour performance for the period under consideration day by day. This can then be used for control through allocating the time of supervision on the main non-efficient centres on the basis of the information. The problem of limited control in the sense that the information is later than actual

happening and therefore the manager cannot do anything about it does not stand to a great extent, since the manager can extract the trends and allocate his time on the problem areas.
It is partly true in the sense that if a machine has broken down it is too late to depend on the information, and in such a case the manager must depend on his experience, close supervision and informal reporting. However, it was never meant for the budget to take ower the manager's job; its main purpose is to help him manage better and this can be performed by budgetary control as one of the ways and means of management.

As will be shown later, this form is the most used of all the information provided by production managers.

In theory, the form is well devised to achieve its objects. At first it did not compare with the budget. However, as a result of following up this came out as an excuse and the system was remedied to include the budget indices of activity and efficiency so as to facilitate comparison and suggest the extent of effort needed to achieve the budget by the end of the period. The form also shows the trend and gives an analysis of non-productive time, and as such it enables the manager to control through concentrating on the main problem areas in the main cost centres.

The form is regular and prompt enough, easy to understand and enables comparison from day to day and with budget.
However, the form gives too much information, for example performance pay and effective indices are neither useful in theory nor in practice to the manager from a control point of view.

The manager can only influence activity through controlling the controllable part of non-productive time, which is not due to production planning or delays in other departments. The manager can also influence efficiency through concentrating on the less-efficient centres, encouraging and training workers to be more efficient. Therefore he is only concerned with activity indices together with the analysis of non-productive

time and the true performance of efficiency index of his labour force. It follows that the other information of pay and effective performance indices are redundant information as far as managerial control is concerned. Moreover, effective performance index reflects the combined effect of efficiency activity and as such it is a repetition and could confuse managers who are not well trained to understand and use the information. Again, as the payment side of labour is controlled through agreements, the manager cannot influence it except through maximising efficiency and minimising non-productive time, and therefore again this is redundant information from control point of view and could have a confusing effect.

The form explains the meaning of the different indices. Also the form and its use has been explained to departmental managers by the company's secretary; the then group system designer. This is a favourable practice which works as a canvassing campaign to sell the form to managers, and as such ensures their understanding and cooperation. It shows the manager in a practical way that the accountant provides a service to him and does not work for top management; thus giving the form a higher probability of use by managers.

An important factor here is the accountant; whatever way is followed, it should be with the object of securing manager's understanding and cooperation and never as a directive. Managers usually do not accept directives from accountants on the assumption that they are not line senior managers and are completely detached from shop floor problems. The main essence of the campaign should be in the spirit of providing a service and a help to the manager, but never as a directive. In practice, the interpretation process carried on by the secretary was a complete success which encouraged managers to ask for a regular monthly interpretation from him. This in fact was carried out.

Another advantage of the form is that it gives the information for each cost centre separately. The manager can then see which parts of the departments are doing better and worse than budget, thus enabling management by exception.

Again, as this is detailed information which concerns a department, it is only given to the departmental manager concerned.

However, no daily information is provided to the other two managers whose departments are not on scientific standards.

Thus, in theory the form is a very useful model for control. In practice, the form is used by all five production departmental managers in one way or the other; but the extent of their use differs greatly from one manager to the next. Only one manager uses the information as a model of control, through acting on it. The efficiency of the department has been raised from 120 performance to 133 on average within two years, as a result of using the information. In comparison with another manager whose department's efficiency was kept at 125 within the two years, it has been ascertained that that manager did not take any notice of the figures because he was not followed up on them, he was only followed up on certain technical matters.

The other three managers used the information indirectly in the sense that they followed up activity through close supervision and the application of their technical experience, when the event happens rather than controlling on the basis of the information. As to their efficiency they were within the 133 budgeted index. This wag attributed partly to labour efficiency as a result of the incentive scheme and partly through loose standards in some cases. One of the managers writes the resasons for each breakdown when it happens so that he can answer his senior manager; this as was ascertained from interviews, was the only use by that manager.

Thus, in fact one manager used the information as a control model, another did not take any notice of it, and the other three used the information as a matter of interest or to answer senior managers if they were asked about it, at the same time acting

on their technical experience for control rather than the information. As will be seen later on, this is the most used information by departmental managers.

b) Weekly Information

As the weekly information provided to departmental and senior managers is different, they will be discussed in two stages.

(i) Production managers weekly information

In 1964, departmental managers used to get the weekly information. However, in 1965 this practice was stopped. The practice and the reasons for stopping it will be discussed as they are important to the control model.

The weekly information was by and large a summary of the daily information. It also presented the effect of the actual technical indices on labour cost. Initially it was intended to provide managers with the form in the same way as that of the daily information. What actually happened was that the system designer thought it better if the factory accountant takes the form to each manager and explains its contents, thus achieving three purposes; summarising the daily information, showing the effect on cost and making sure that the manager got the same message intended to be communicated and as such giving the information a higher probability for use. This would also mean that managers did not only understand the weekly information, but the daily as well.

However, investigation shows that the production managers unanimously agreed that they neither knew what the weekly information is all about, nor did they understand its purpose. What actually happened was that the accountant took the form, went to each manager and toldhim in a very quick way that his performance is so and so. Managers did not get any help out of this at all, and the practice defeated its own purpose as it confused rather than helped them.

Although on the face of it this may seem to be against the idea of the accountant working as an interpreter, investigation of the reasons behind the failure of the practice showed that, although this was needed by managers and they had good relations with the accountant, the main obstacle was that the accountant himself did not quite understand the implications of the information he was trying to interpret and communicate to managers.

The accountant was not highly qualified nor trained to do this job. In fact, it was ascertained that his main job, although named the accountant, is to check up estimates.

However, had this been done by the system designer himself, it would have achieved its purpose. As a matter of fact, the present secretary, the then system designer, has a monthly session with each manager explaining to them the information and its implications. They all agreed unanimously that this is a useful practice which should be kept going.

This is an important point which shows that although Accountant's interpretation may be needed and looked upon as important by managers, unless accountants are highly qualified or at least understand what they are trying to communicate to managers, the whole practice defeats its own purpose. It may, as it did in this case, ruin the image of the accountant in the managers' eyes; one of them said that "the accountant used to explain figures which he (the accountant) did not know more about than I (manager) did, so we (manager) convinced another one (the secretary) to do it".

By the second visit in 1965, it was found that the weekly information, although prepared and used as a stage in preparing the periodic accounts, is no longer provided to departmental managers and as such is no longer a part of the control model.

(ii) <u>Senior Production Managers' Weekly Information</u>

This information was initially designed in 1963, to be provided daily to senior and top managers. At present, the

form is provided weekly to management by the work study engineer. This is a better practice since senior and top managers tend to treat the daily information as routine on the basis that they are too busy. However, one disadvantage of the information is that it is given to all top managers and to most of them it is irrelevant. The form should only be given to managers who can use it, mainly those who can follow up on its basis. This is only applicable to the works manager in the present circumstances.

The form's main objective is to provide information to senior manager so that he can follow up departmental managers on their worse than budget performance. In practice, the form was only used once a month, as a basis for following up by the top manager concerned. Therefore, up to a month, the less frequent the information the better, or else the information will not be used and as such would be redundant from a control point of view.

Again, in theory if a departmental manager is held responsible for the immediate results of his department, a senior or top manager should only be concerned with the pattern rather than one isolated case. In order to build a pattern or a trend one must have at least several immediate results, therefore weekly or monthly information would suffice top management's requirements from a control point of view. Another theory is that constant following up every day would be regarded as a matter of routine and gradually would lose its effect. The manager who is followed up daily could claim that the worse than budget performance is due to isolated cases and does not constitute a pattern or a trend.

A senior or top manager should not follow up on the basis of one incident; that Tuesday's performance was not up to the budget level. On the other hand, he should want to see whether thare is a pattern or not, else he will

always find a certain excuse for Tuesday's performance, being one isolated case. More important still he should try to find out the basic weaknesses in a performance of a centre or a department since the responsibility of senior management is to follow up in order to see that the budget as a whole is achieved rather than whether Tuesday's performance is up to budget or not. Achieving the budget would come only if the trend of actual performance is going the same way as that of the budget and not through whether an isolated incidence is up to budget level.

Again, if a senior manager follows up on a weekly or monthly basis he may find out that Tuesday's performance being worse than budget is offset by Wednesday's better than budget performance, and as such there was no point in follow up in the first place, except to find out reasons which may likely constitute a pattern.

What is more important is to find out that the department's activity or efficiency is falling down constantly for several days, weeks, or months. Here a senior manager must find out the reasons that constitute a basic weakness in performance which, if remedied, would improve the pattern of performance of a department. This again stems from senior management's responsibility to achieve the monthly or yearly budget rather than the hourly or daily one, as this should be left to the manager himself.

Accepting this argument, providing senior managers with weekly rather than daily information is a better practice.

The weekly form presents, for each cost centre in the five major departments on scientific standards, the actual efficiency and activity indices in comparison with budget together with the major sub division of non productive time under coded letters. Each of these letters, A, B, C etc. represent different reason for non productive time. Each manager who gets the information has a permanent list which explains the different letters.

Thus the information does not show cumulative figures to date, and as such it does not enable the manager to see the trends which lessens the value of following up as it leads to a specific following up on specific isolated cases rather than constructive following up which is based on trends and directed to find out the main weaknesses in the general structure of actual performance which constantly affect the achievement of the budget.

The original daily form which was provided to top management in 1963 and 1964 is better than the present one in that it is condensed; i.e. all the information on one sheet, whereas it is on two sheets in the new form. It also presented the norms and the tolerance limits whereas the present form does not. It also gave the major sub divisions of non-productive time on the same sheet. Under the present form the manager has to exercise a double effort, read two sheets in order to understand the information, as such and with senior managers being busy, this practice hinders rather than helps use of the information by managers.

Apart from these criticisms the weekly form like the original daily one enables management by exception since it shows at a glance which centres are worse and which are better than budget and as such it enables the senior manager to follow up as it pinpoints responsibilities.

Its main disadvantage is that it shows a weekly figure and not the trend. So, if the manager wants to see the trend he has to go through many forms, thus wasting a lot of time, whereas if the cumulative figure to date is included it would enable him to see the pattern at a glance thus saving his time, since time is an important factor to senior management, this enlarges the benefits of including the trend on the form.

In fact, this information was used in 1964 as a basis for monthly following up by the top manager. Most production managers did not like the way following up was practised on the basis that it was an accusatory one. One manager described it as "being in a court room". As a result of this one manager left the organisation. He was usually called up to answer for delivery dates and was always ruled out. As a result of this attitude, he used to give easy targets expecting top manager to tighten them up.

This way of following up tensified relationships between departmental managers and the top managers concerned, but it resulted in use of budgets and information by managers. In some cases, it led to the wrong form of use, through allocating poor grades of labour to do a higher quality job, as this would be reflected in the cost figure, the manager's cost would be less, but with detrimental effects to the other objectives of the company, i.e. quality and labour training.

This however concerned only the production departments on scientific standards. The other two departments neither had the information nor were they followed up on it. It was originally intended to provide them with the weekly information explained by the accountant, but when this practice stopped they did not get the information at all.

In 1965, the situation changed through reorganisation. The managing director retired and a new general manager took over. The production planner was promoted to be the works manager and the works director was removed from the day to day running of the works which was left to the new works manager. The new works manager, being the de facto planner and manager, became the de facto works manager since he had to deal with a lot of different functions at the same time. As a result, his following up on figures

was one aspect of the many functions, and as such his following up became rare and in many cases was overcome by the other aspects of his job. Although it was ascertained that managers considered his way of following up an intelligent approach in comparison with the accusatory approach by the old top manager, the fact still remains that following up on the basis of the figures was rare.

However, towards the end of 1965 the situation changed again as a new production planner was appointed. This would relieve the works manager and give him more time and less functions, thus helping him to concentrate on his own job. However, whether following up on the basis of the information will be improved or not remains to be seen.

Since the works manager's attitude to budgets is favourable as he considers following up as the main reason behind managers' use of budgets and information, and as he has more time and less responsibilities, it could be foreseen that more following up and more use of the weekly information from a control point of view could be envisaged in the future.

c) Periodic (monthly) Information

Two weeks after the period ends, a departmental operating statement is presented to each departmental manager; whether production or service. This part will discuss the statement given to production managers so as to complete the production information system.

The statement is prepared by the group cost accountant and presented to the departmental manager concerned as well as to top managers. As mentioned before, this is a supporting statement as far as top managers are concerned.

The statement's objects are :

1. to show the effect of the actual performance for a period on the cost.
2. to control departmental cost.
3. to be used as a basis to calculate the cumulative figures and the quarterly and yearly accounts.

The statement provides the following information: direct wages at standard rates, the excess cost in terms of non-productive time, efficiency, rates, overtime, premium and bonus, and the indirect wages under the major functions of labour and the indirect expenses under the main kinds of expenses.

It compares actual performance with original and variable budgets, an adjusted figure based on the actual volume of production, for the period under consideration and cumulatively for the periods to date.

As such information gives the cost effect of the daily controls of efficiency and activity, the two figures which represent these are the efficiency and non-productive items of excess cost. Efficiency excess cost shows the sum of cost effect of the monthly variation of actual efficiency from the budgeted index, whereas non productive excess cost shows the same thing for variations in the activity index from budget. As such, the information shows the effect of the control effort exerted during the month by the manager, and the affect of such effort on the department's cost. From the top manager's point of view, he can see the effect of such efforts on the cost of the company as a whole and its profitability.

The statement presents the trend in terms of cumulative actual performance to date, which if compared with budget could give the extent of control effort needed to achieve the budget at the end of the year, or to balance out the variations in the next period. This information is the most constructive help from control point of view since it does not criticise directly, rather tells the manager the extent of action needed to achieve his budget.

Although in theory from the accountant's point of view this information is intended to work as a control model, in actual fact the information is not used by managers as a control model at all.

What actually happens is that some managers use it for interest whereas some do not take any notice of it at all. Investigation shows that there is no following up on the basis of this information whatsoever. The only following up is done by the secretary; this however amounts to interpretation as a part of educational process. Although this did in fact help some managers to understand the information and take some interest in it, this factor alone was not strong enough to secure managers' use.

All managers neither understood nor properly used the variable budget. In fact investigation shows that the variable budget presented in this way has a confusing effect on managers and as such either hinders use completely or leads to improper use; both with detrimental effects to the company.

The logical improvement here would be either not to present the variable budget at all or to explain to the managers what it means and how it should be used. As to the first suggestion, this is impractical in the present circumstances since the actual performance figures vary a great deal from the original budget which makes comparisons with the original budget alone meaningless. Therefore, an adjusted budget figure must be presented in order to put sense into comparisons. If this is needed, the most logical way out is not to present the original budget figures on the statement provided to departmental managers but to present the adjusted figure only for several periods until such time that the managers understand the meaning, value, and use of the adjusted budget, when the present method of presentation could be adopted.

Another evidence which supports this proposal in practice is that some managers have no confidence in the information

basically because of the great variation between the original budgeted figure and thevariable (adjusted) one.

If the proposed presentation is adopted, this problem of confidence would be gradually overcome, thus giving the information a higher probability for its use.

Another problem here is the tentative basis of the variable budget. The degrees of variationwere partly determined by the secretary and partly by the group cost accountant. They are entirely reflections of their personal opinions and experience. Degrees of variation of direct labour excesses were based on the 1964 original budget whereas those of expenses were based on the group cost accountant's experience in determining for each kind of expense whether first of all it should be regarded as variable or not and what the percentage of variation is. As such this is a tentative exercise which is far away from scientific budgeting, Simple statistical techniques for determining the degrees and patterns of variation are not adopted although they are in the reach of the company, since it employs highly qualified accountants.

Another disadvantage of the form is its technical language in describing excess cost, since it uses the term "direct workers - overhead charges" instead of excess cost.

Again the information does not distinguish between the controllable and non-controllable items as far as managers are concerned. Although it is regular and prompt enough, it is not easy to understand.

Although the information does not show the variance, in fact it was ascertained that this is a better practice, since the old form has the variance and managers were extremely sensitive about being put in the red by the accountant and as such facilitate following up by top managers. However, it was also ascertained that this is related to a particular set up of relationshop between managers and their senior manager. It is highly probable that under the

present circumstances even if the variance was put in red colour, managers would not be sensitive since they are dealing with a different senior manager who follows them up with a different approach.

Again, although managers do not use this information, and although the unfavourable factors in this case are non-follow up, non-education, non-consultation, and technicality of the information, by comparison with the use of daily information the main factor behind non use in this case is non-following up since education is more or less the same under the two systems and it is even more favourable to use here as the accountant works as an interpreter whereas nobody does in the case of the daily information.

The non provision of suitable information from senior management's point of view is another reason which hinders following up in this case. The senior manager gets all the departmental statements together.

A senior manager does not need to see the performance for each manager separately, although this is his ultimate interest since this is the basis of following-up, and his ultimate responsibility is the works as such and not each department separately. As such a senior manager needs to see the whole picture for his own department; first pick up the main weaknesses, follow them up on individual departmental statements, in order to find out the main weaknesses which pull his budget down, pinpoint responsibilities and follow up as a basis for corrective action. As such a senior manager needs mainly a summarising form with the departmental forms as supporting information.

To sum up, this information is neither used by managers nor by senior managers.

2. Service Managers' Information System

The only information presented to service managers is the periodic departmental operating statement. The form, however, only presents the indirect expenses part. As such its main objective is to enable service managers to control their expenses. However, not all service managers get the information, only those who were thought by the system designer to have control over expenses.

Other service managers whose main expenditure is wages or salaries are not given any information, and their departmental cost is included in the general managers' statement as administration expenses.

Investigation shows that not even one service manager used the information for control although in theory and from accountant's point of view it was originally designed as a control model.

One manager even said that the purpose of the provision of the information was not even explained to him; he just received the information without any earlier notice. Another manager did not get the information at all although it was prepared.

In fact, the information was not used at all and was not even considered by managers as a matter of interest.

3. Sales Managers' Information System

The main form in 1964 was that provided by the group sales director on the basis of the actual information provided by the factory.

The information was provided to group and local top managers. As mentioned before, sales was under the general control of top management until 1965 when a sales manager was appointed. This in itself was a major defect in the control system since it resulted in rare or non effective following up of sales representatives performance and cost.

The objects of the form were :

1. Mainly to report to group top management, i.e. the parent board on the performance of the factory.

2. To enable local top managers to control sales performance.

The form presented the information in three main parts. The first part presented sales in terms of deliveries.

The first part was in turn sub divided into three sections; the first section presented actual sales value for each period in 1964 and 1965, thus enabling comparison between the year under consideration and the year before, whereas the second section presents comparisons with budget as it presents the budget figure for each period, the number of working days and the percentage of actual performance to budget, and the third section presented the trend in terms of the moving annual total for the year under consideration and the year before, and it also presented the percentage of the moving annual total figure for the year under consideration to that for the year before.

Thus at a glance, this part of the form presents the sales figures for each period in the year under consideration in comparison with the budget and the actual performance of the year before. It also shows the trend for the year and the year before. The percentage of actual to budget shows right away the extent of variance. However, one main drawback is that the form takes the production budget as a basis for comparison and as such it does not take care of sales seasonal variation pattern. However, this is a drawback which should be remedied at the planning stage.

The second part of the form presents the analysis of deliveries according to mix; types of print. It is subdivided into sales to letterpress, Lithography, process and living art. For each of these categories it presents the actual sales figures compared with budget and the percentage of actual to budget for the period and cumulatively to date. As such this part of the

form helps top management to follow up the trends of the different types of print, and adjust their policies in the light of the information.

The third part of the form gives a detailed analysis of sales by responsibilities; actual performance of each sales representative. It presents for each representative his actual sales figure in terms of deliveries and orders accepted for the period under consideration and cumulatively to date. As such, this part of the form helps to pinpoint responsibilities and inform top management of the performance of each representative in comparison with his budget and the percentage achieved of the budget. For group top management this is considered as a supporting statement of the first and second parts of the form since they are mainly concerned with the general policies and trends of the group and not with the performance of sales representative X in the subsidiary company Z.

Since the main responsibility for following up before 1965 falls on the local top management, this part of the information becomes as important as the firstand the second. However, in actual fact investigation proved that this information was not used as a basis of following up at all. Top management's attitude at that time was that of close supervision and that they knew (without the information) their representatives well enough to tell who is working hard and who was not.

The result of this was that most representatives never achieved their target, and that the sales pattern was not in a state of control, variations were neither random nor reasonable.

However, this scene was improved as a result of reorganisation and the appointment of the sales manager earlier in 1965.

Although his appointment was after the approval of the budget, he first called a sales conference with his representatives which in a psychological sense amounted to a consultation process, and, more important, as an indication of the change in top

management attitude towards budgets and their achievement. This was the main event which changed the sales model to an effective control model.

The sales manager was provided with the information described above. However, this information was too late to be effective for his control since it was provided nearly six weeks after the period end. As a result he devised a weekly form to help him know what his representatives are doing and whether they are going in the right direction ; achieving their targets and getting the kind of mix needed by the factory.

Apart from this, the local board approved of a change in the sales policy in order to help the sales force counter competition. The weekly form presented a full description and the values of the estimates and orders provided by each representative. However, it did not compare with budget. It did not help to compare each representative with the others as each representative's performance was recorded on a different form. Again it did not help the manager to see the trends in comparison with budget. Its only and main advantage is its quickness and frequency. However, the two forms could work together to provide the main information needed for control, taking the monthly form as giving the general picture and the weekly as supporting statements. Another alternative would be the preparation of the monthly form much earlier than it is at present. However, in order to do this, it must be prepared at the factory and not at the group headquarters. This last proposal is logical enough as the information is provided in the first place by the factory and the group takes six weeks to present it in its present form. So, having the information, the form could be prepared in much less time.

In fact, the manager uses the weekly information as a basis of following up and the monthly information as a matter of interest. However, depending on the weekly information alone means that the manager depends to a great extent on his experience rather than the information as a basis for following up.

This concludes the control model of sales performance. As to sales cost, before 1965 the expenses were presented as one figure on the variance analysis statement, which is provided as a supporting statement to the revenue account to top management. However, in 1965 a departmental overhead statement presented the sales department's cost under major items of expenses. Although this statement was presented to the sales manager and all members of top management, investigation proved that management did not use it as a part of the control model.

An Evaluation of the Empirical System

As each of the different forms has been evaluated separately, this part will present an evaluation of the system in general.

1. The production model of control is devised to enable management to control labour's efficiency and activity daily, and departmental labour and overhead cost monthly. As such the model enables management through labour's efficiency and activity to control production in terms of standard hours. However, it does not give any information about waste, although material represents a third of the cost structure. Even though waste is not as significant as in factories 'A' and 'B', it is still important to control as it is second in importance to overheads.

   One argument against this may be that according to the Federation's statistics waste is under control. However, although this was true in 1962, it was not true in 1964 and 1965, according to the factory's accounts. The spoilage figure is reported once each period as a works indirect expense to the works manager. However, it is only reported as one figure for the whole works and as such is not allocated on departmental basis and does not pinpoint managers responsibility. As ascertained from the investigation, the information is not used, since the information is presented in such a way that it does not enable the senior manager who gets it to follow up as it does not pinpoint responsibility. As such the senior manager

concerned can either ask for a cost investigation or use his own experience as a basis for follow up. To follow his own experience rather than the information is in itself an evidence that the information is not good enough and as such is a motivation against managerial use of the information.

On the other hand, if he asks for a cost investigation, although this is more scientific than experience alone, the results would be too late so that even though he can pinpoint responsibilities, the departmental manager concerned has probably forgotten all about it by the time he is followed up on it. However, late follow up is still much better than no follow up at all, at the very least it shows departmental managers that senior management is concerned about spoilage and that departmental managers have to be more careful in the future.

Whatever approach is adopted, the manager who can really control waste on the spot, when it happens, is the departmental manager. He, however, does not get any information about waste. If he chooses to control it, the only available alternative to him is his experience. This as mentioned before is an encouragement to use experience as an alternative to scientific tools and as such is a motivation against managers' use of such tools.

One argument against all this is that materials are not on scientific standards. (1) Although this is true, it is a groundless argument since no one can stop management from having scientific standards or even experienced estimates of standards for waste. Although this is in fact done, in two cases, estimate and budget, in order to submit estimates to customers and in order to have a revenue budget, however it is rarely used for control.

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(1) Chapter IV, p. 76.

In fact, the main control process is that which is exercised by the warehouse manager before the event as he only issues the materials allowed in the estimate. This, however, does not guarantee that there will be no more waste since production processes waste may result in issuing more raw materials.

Under the previous top management of 1964, the accountant used to check estimates on the practice of 'vetted cost', previously explained. He then used to report to the managing director if waste was over the estimate. However, investigation proved that this was rarely done and was rarely taken as a means for control. The only alternative used was experience.

To conclude, although waste is an important area for control in this factory, the empirical model does not take it into consideration.

2. Although the daily information gives simplified information to managers, the investigation proved that only a small part of it, activity and efficiency indices are used. Apart from the other two indices of effective performance and pay which confuse rather than help managers, the rest of the information is details which can be used to explain the main indices used. Therefore, either the two indices of effective performance and pay should not appear on the daily form or an intensive explanation of their use should be carried on.

However, as the educational status of managers is not high enough, it is preferable to give them as simple information as possible, and therefore it is better in these circumstances not to provide effective and pay performance indices to departmental managers.

3. One simple and logical rule in control is that the information must be suited to the manager's educational background, for if it is not, the manager would not understand it. As a result he would not take any notice of it. This simple rule, although adopted in the daily information, is not adopted in the

monthly information. As ascertained from the investigation, most managers do not understand fully the monthly information, although the company's secretary works as an interpreter to departmental managers once a month.

In order to remedy this three main alternatives are available, to simplify the information to suit managers' educational background, to educate managers up to the level of the information, or to do both. Educating managers can be done mainly by attending an independent course or by constant interpretation by the accountant, or both. Any alternative although better than nothing, needs a longer time to implement than simpligying the information. Therefore, the best practical solution is to simplify the information and for the accountant to interpret the information regularly to departmental managers.

4. Although the company's secretary interprets the information to departmental managers, individually once a month and the accountant once a week, the investigation proved that this service is not provided to all departmental managers, and that the accountant's role as an interpreter proved to be a confusion rather than a help to managers.

However, the main reason behind the failure of the accountant's practice is that he is neither qualified nor trained to work as an interpreter. This in itself is evidence that the weekly information is difficult enough for an accountant to understand. As such, stopping the practice was better than confusing managers.

In the case of the secretary, managers who had this service treated the information as a matter of interest, where other managers did not take any notice whatever. Again, all managers who had this service agreed that it is useful to them. Therefore, the logical improvement here would be the extension of this service to other managers. The disadvantage of this, however, is that it would take

too much of the secretary's time. In order to remedy this, the interpretation process could well be practiced in a meeting rather than an individual interpretation. However, in order not to part with the advantages of individual interpretation altogether, managers with the same educational background should be grouped in one meeting and so on. If this is adopted , only one meeting in the case of production managers would be necessary since all managers but one had the same educatinnal status. The other manager is of a higher status than the others, and therefore could attend the meeting.

5. As mentioned before, the monthly information is compared with original and variable budgets. However, investigation proved that the inclusion of two budgets, original and variable, on the form has a confusing effect on managers since the variable budget is neither accurate nor understood by them.

Since the inclusion of the variable budget is essential in this case, as sales fluctuate greatly from budget and as a result all the other budgets are affected which make comparisons with the original budgets meaningless, it would be better if the variable budget alone is included in the period's figures with the original and variable in the cumulative figures. This would simplify the information and facilitate comparison, at the same time showing the effort needed to be exerted to achieve the original budget for the year through a comparison of the cumulative figures.

As to the accuracy of the variable budget, a more sophisticated technique, that of statistical analysis to determine the direction and degrees of variation, should be adopted.

6. No daily information is given to managers whose departments are not on scientific standards. The logical improvement here would be to present this information to managers. However, as the information is prepared weekly rather than daily, it should be presented weekly to the managers concerned.

7. As to the overall performance system, this incorporates the following advantages :

a) The information gives first the whole picture in a summarised form then it details the constiuent parts on different forms thus helping top managers first to see the whole picture, second to identify the main problem areas and third to investigate these areas as a basis for corrective action. However, as mentioned before, the form is too concise.

b) The information is compared with budget, as such it works as the criterion of comparison and evaluation.

c) The information helps to show the trend, as such it helps the manager to see the historical information and the extent of action needed to achieve his budget by the end of the year.

d) The information is pinpointing and as such helps the manager to identify problem areas and responsibilities.

e) The periodic financial report is a means of exceptional reporting in ordinary language.

f) The selling campaign by the financial director, the group cost accountant and the system designer in introducing the mangement information system to top managers helped to secure top management understanding.

g) The explanation of figures by the secretary helps top management to understand it.

h) However, as mentioned before, the main problem for the system in the new setting is partly top management's attitude, and partly non-understanding of budgets and information; both factors need a constant and regular training by the accountant.

To conclude, the control system is in a transitional stage. However, it has moved from a difficult stage of unfavourable top management's attitude to a partly favourable attitude. As such, this could be a start toencourage rather than to hinder managers' use of the budgetary information.

SECTION IV: FINDINGS CONCERNING MANAGERS' USE OF BUDGETARY INFORMATION

The object of this section is to present the findings of the case study which concerns managers' use of the budgetary information. The findings are presented in two parts; first findings concerning managers' use, and second the factors which affect such use.

Managers' Use of Budgetary Information :

The evidence (1) suggests that out of the eighteen managers studied, seven use the budgetary information in a limited sense, and eleven do not use it at all.

The eighteen managers belong to the three major detailed control systems of sales, production and services.

On the sales side, three managers were studied. As a result it has been found that the three managers use limited parts of the sales budget and do not use the cost budget at all.

On the production side, eleven managers were studied. The analysis of the evidence suggests that only four managers use limited parts of the production budget and do not use the cost budget at all.

On the services side, four managers were studied. The analysis of the evidence suggests that all the four managers do not use the information.

Thus, to conclude, a limited number of managers use the budgetary information in a limited way since out of the eighteen managers, only seven use limited parts of the information. Moreover, it seems that managers tend to use the most relevant information only, since all the seven managers use the sales and production budgets and do not use the cost budget.

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(1) For a detailed discussion and illustration of the method of analysis adopted in establishing managers' use and the factors which affect it, see Appendix 'D', Volume II, p. 129, and Table D_1, p.154.

Factors which Affect Managers' Use

a) Findings based on Managers' Opinions Alone :

According to managers' views (1), it seems that the factors which support use in this case are : participation in budget-setting, regarding the budget as practical, and senior manager's follow up.

Moreover, the analysis of managers' views suggests that the manager's participation in budget setting is very important since it results in a practical budget, improves the manager's morale, and furthers his interest and backing to the budget.

Unlike the findings of Case 'A' and 'B', it seems that participation does not affect the manager's status. It must be emphasised however that the evidence in this case is based mostly on the opinions of managers who did not participate in setting their budgets.

Moreover, on the basis of managers' opinions alone, it is difficult to deduce the effect of participation on the manager's interest in his department. However, it seems that participation furthers manager's interest in his department since the managers agreed that participation furthers their departmental-centredness.

However, it seems that participation does not affect cooperation between the managers with the same status, between the manager and his senior manager, between the manager and his foremen, and between the manager and the accountant.

The evidence also suggests that the senior manager's follow up helps to communicate the department's problems, and furthers the manager's use of the budgetary information. Moreover, it improves the manager's morale. However, it does not affect cooperation between the managers with the same status, between the manager and his senior manager, between the manager and his foremen, and between the manager and the accountant.

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(1) Appendix 'C', Volume II (Tables C_1 to C_{42}), pp.85-128.

b) Findings Based on Cross-checked Opinions and Facts

The analysis of the factors (1) which affect managers' use of the budgetary information suggests that the seven managers who use the information in a limited sense, use it mainly as a result of senior manager's follow up since they only use those parts of the information which are followed up by the senior manager.

Moreover, it seems that if there is strong and regular follow up, managers would use the system even if they are poorly educated. Furthermore they would use the system even if the practice of follow up is stopped for some time. However, their use in this case would be as a result of resumed follow up. In fact, this was evident through observing three managers under the two years under the study. In the first year they used their budgets as a result of strong and regular follow up. In the second year although this was no longer there, they still used their budgets on the assumption that they may be followed up by their senior manager.

This case seems to suggest that managers are extremely sensitive to follow up, since they resent needling. This in fact seems to tensify relationships between managers and their senior manager.

In fact, this is the only case study out of four where managers think that follow up does not improve cooperation between the manager and his senior manager with a greater margin than all the other cases. Thus, follow up may on the one hand result in use while on the other may tensify relationships between the manager and his senior manager. Moreover, in one instance, needling resulted in the wrong form of use which would harm the factory's interest in the long runbut would make the figures of the department seem to be all right for the period under consideration. Thus, the way of follow up is important as it may tensify relations between the manager and his senior manager.

(1) Appendix 'D', Volume II, p.147, and Table D_1, p.154.

As to the eleven managers who do not use their budgetary information, the evidence suggests that seven managers do not use their information as a result of non-follow up, two as a result ofnon-provision of the information, and the other two as a result of poor education, for although they are followed up on their budgetary information, they do not use it as a result of close supervision attitude which in turn is a result of poor education and long experience without budgets. Thus, non use in this case is due to non-follow up, non provision of information or poor education.

Moreover, the evidence suggests that the factors which do not by themselves establish use, but support it,(1) are : long experience in budgets, participation in budget-setting, and the accountant's role as an interpreter.

As to the factors which hinder or limit use, these are : poor education, lack of training and experience in budgets, non consultation in budget-setting, non follow up, and the non provision of the information and the interpretation service to managers.

The identification of the factors which affect managers' use of the budgetary information in itself suggests the remedy to the problems of non-use and of limited use. Thus, since the main reasons behind non use are poor education, non follow up, and non provision of the information, the remedy to the problem becomes that of educating managers, providing them with the information, and following them up on its basis.

Conclusion

To conclude, the findings of this case suggest that managers use their budgetary information mainly as a result of follow up. Moreover, they do not use it as a result of non-follow up, non provision of the information, and poor education.

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(1) Appendix 'E', Volume II, p.190

CHAPTER VIII

THE FOURTH CASE STUDY: FACTORY 'D'

The object of this chapter is to present the budgetary planning and control system in Factory 'D'. It also presents managers' use of the system and the factors which affect such use.

This chapter is divided into four sections as follows :

SECTION I presents the Environment of the Budgetary System :

- Environmental Circumstances
- Cost Structure of the Industry
- Ratio Analysis
- Main Problem Areas

SECTION II presents the Planning Stage :

- The Theoretical Model of Operational Budgets
- The Empirical System of Operational Budgets
- An Evaluation of the Empirical System

SECTION III presents the Control Stage :

- The Theoretical Model of Control
- The Empirical System of Control
- An Evaluation of the Empirical System

SECTION IV presents the Findings Concerning Managers Use of Budgetary Information :

- Managers' Use of Budgetary Information
- Factors which Affect Use
  - (a) Findings based on Opinions alone
  - (b) Findings based on Cross-checked Opinions and Facts .
- Conclusion.

SECTION I: THE ENVIRONMENT OF THE BUDGETARY SYSTEM

The object of this section is to present the environmental circumstances to which the system of budgetary planning and control was introduced.

A. Environmental Circumstances

1. This is a high quality carton printing and packaging factory. The manufacturing process must be defined as batch production since the factory processes several hundred orders a week of different characteristics.

2. The factory is the largest in the group and one of the largest factories in the industry as it employs 1100.

3. The factory does not work under maximum practical capacity level, thus there is a spare capacity.

4. The factory does not sell directly to consumers. It sells to other industries and as such provides a service to them.

5. The factory's selling policy is to concentrate on a number of customers who place large orders directly with the company, with other small orders to fill the capacity. As such, the factory has a small selling force which grows at a very slow rate.

6. The factory's market (1) has increased by 48% in the last ten years up to 1964, whereas the total market has increased by 30%. However, the company's percentage of the total market increased only by 14% in the same period.

7. Whereas the factory's capital did not increase at all in the last ten years, its sales increased by 55%.

8. The factory is one of the old members of the group. It secured the largest share in the group profit for a long time, which helped to counter ~~effect~~ the effect of losses of the other factories, and pays a reasonable dividend to the parent company's shareholders.

(1) Source of statistics is the returns of the British Carton Association from 1955 up to 1964.

9. However, the relative importance of the factory in the group is declining as the new members of the group, mainly factory 'A', is expanding at a much greater rate than factory 'D'. Although factory 'A' is less than half the size of factory 'D', between 1959 and 1965 itssales expanded greatly up to the same level of factory 'D'.

Moreover, as factory 'D' is expanding at a very small rate, (3-4% a year) factory 'A' is expanding at a greater rate. It is forecast that other things being equal, factory 'A' will replace factory 'D' in its relative importance to the group.

10. There are four main levels of management: group top management, factory top management, factory senior management, and factory departmental management. (Chart VIII.1)

11. As the factory does not deal with standard products, orders are obtained through the submission of estimates.

B. <u>The Cost Structure of the Industry</u>.

The cost structure in this industry is as follows :

Materials	60%
Labour	20.7%
Overhead	19.3%

a) As to materials, the main controllable item is waste (spoilage), however this compares favourably with the industry. Even so, its control is very important since materials cost represent nearly two thirds of the cost structure. The responsibility of controlling waste depends to a large extent on the departmental managers.

b) As to labour, this is second in importance to materials. However, it only represents one fifth of the cost structure. Even so, its control is still important. However, this is facilitated by the development of scientific standards and the application of the incentive scheme. The control process

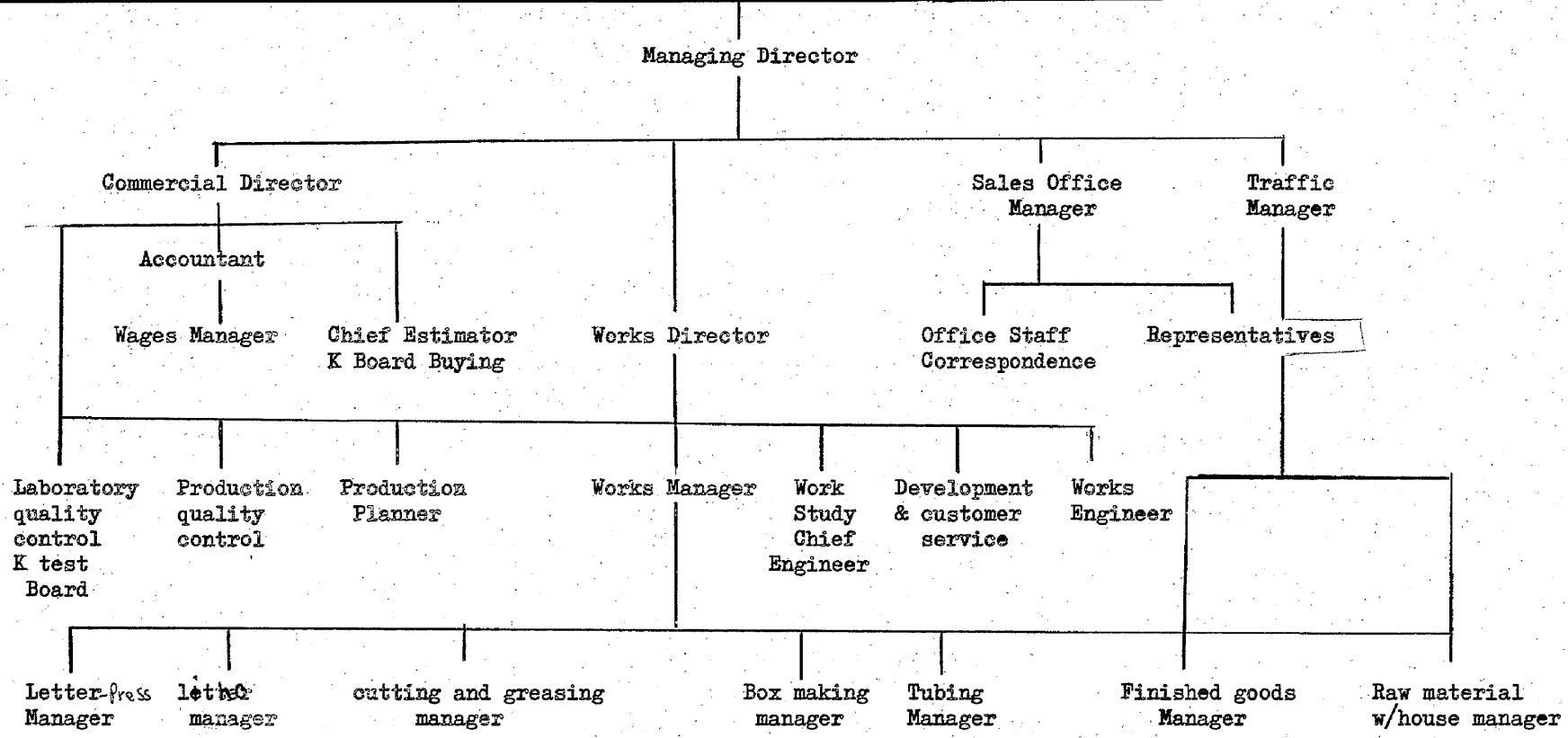

CHART NO. VIII 1. ORGANIZATION CHART OF FACTORY "D"

is concentrated around labour's efficiency and utilisation. As such, this again is the departmental managers' responsibility.

c) As to overheads, this nearly represents a fifth of the cost structure. Overheads may be controlled in two ways; on the one hand, through keeping the budgeted production volume, and on the other, through reducing expenditure or keeping it at budget level through responsibility budgeting. This again is the departmental managers' responsibility.

Thus, most of the cost structure is controllable by the manager.

C. Management Ratios Comparisons (1)

(a) Return on Capital

In 1958, the ratio was lower than the average and the upper quartile firm, but it was higher than the lower quartile. It shows that the factory at that time was less profitable than over half of the competitors in the industry. In 1959, the ratio was average, but was much higher than that for the previous year. In 1960, the return ratio was much higher than the average and a little lower than the upper quartile. In fact, the ratio improved on 1959 by about 6%; a little improvement which correlates with top management policy. Again, in 1962 the ratio was higher than average but less than the third quartile. However, the ratio was less than that of 1960. In 1963, the ratio was much less than average and than that of 1962; however, it was higher than the first quartile.

Thus, although the ratio of the average firm in the industry increased steadily between 1958 and 1959, it dropped in 1960, but increased steadily since. The factory's ratio fluctuated greatly in the same period, it was nearly doubled in 1959, increased in 1960 very near to the upper quartile, decreased

(1) The Federation of Master Printers provides the factory with comparative management ratios for the industry. These ratios have been studied for five years (1958, 1959, 1960, 1962 and 1963) in order to identify the main problem areas.

in 1962, and very much decreased in 1963, less than that of 1958.

Thus, unlike the industry the factory's return ratio fluctuates unsteadily.

(b) Operating Costs

1. Profit % of value of production

In 1958 the ratio was higher than the average firm. However, it was less than the upper quartile. It means that the general cost position of the factory was better than 50% of the firms in the industry. In 1959 the ratio was much higher than the upper quartile. However, this was partly due to inflating the profit figures by purchases' profit. Again in 1960 and 1962, the ratio was much higher than the upper quartile. In 1963, however, the ratio dropped to a lower level than average, and a little higher than lower quartile.

The average firm in the industry, however, increased in 1959, dropped in 1960, increased in 1962, and dropped again to a much lower level in 1963, nearly half that of 1958.

On the other hand, the firm's ratio increased steadily until 1960, then dropped in 1962 and 1963. In fact in 1963 it was very much lower than 1958.

2. Cost of Production/Value of Production

In 1958, the ratio was lower than average and higher than the lower quartile. It means that the factory's cost of production position is better than 50% of the industry. However, taking the other ratio of cost of production to total cost excluding direct materials, the ratio coincides with the upper quartile. It means that cost of production apart from materials is higher than 75% of the industry; this is a problem area in this factory.

In 1959, the same problem was ascertained since cost of production to value of production ratios were higher than nearly 75% of the firms in the industry.

In 1960, the ratio was lower than the average firm but higher than the lower quartile. However, direct production materials to value of production was much higher than the upper quartile. It means that the factory uses higher than average materials and as the firm secures profits through buying large and selling small, it inflates the profits and hides the higher cost. So again in 1960, cost of production represents a problem area.

In 1962, the same thing happened again, since the cost of production ratio was lower than the first quartile. However, it was mainly so because the operating profit ratio was much higher than the third quartile, i.e. it was not a result of reduction in cost. On the other hand it was a result of higher profitability and because the profitability is inflated by materials as the direct materials ratio was higher than the third quartile. This supports that cost of production apart from materials still represented an area problem.

In 1963, the ratio was much higher than the third quartile, i.e. the cost of production was higher than 75% of the firm in the industry. The 1963 ratio unlike the other years shows the right trend since the operating profit ratio was much lower than in the previous years.

To sum up, production cost apart from direct materials represents a problem area.

3. Details of Cost of Production:

In 1958, value of production per £1 of factory wages ratio was the upper quartile firm. It was higher than 75% of the industry, which signifies that wages are not a problem in this factory. However, the ratio of overheads and direct expenses per £1 of factory wages is higher than the third quartile in the industry. This then represents a problem area for this factory. However, it is partly related to a smaller

volume of production and partly to over-spending on these items.

As the direct production materials consumed per factory employee is higher than even the upper quartile firm it confuses the results. In fact it means that those outside purchases bear a percentage of profit and thus the firm derives a greater profit from those commercial operations than the industry generally. It is essential, therefore, to allow for this factor when interpreting the return and other profit ratios. The confusion comes from the fact that profits are high not as a result of efficiency of the factory but rather and to a great extent because of advantages from outside purchases; commercial operations. This results in inflating profit ratios and deflating cost ratios.

This problem was again stressed by the 1959, 1960, 1962 and 1963 ratios.

However, spoilage does not represent a problem; for the spoilage ratio was less than the first quartile in 1959 and was average in 1960 and 1962.

4. Cost of Transport and Selling

The 1958 ratio of cost of transport and selling to value of production is lower than the lower quartile, it is better than 75% of competitors. All supporting ratios on this area assume the same pattern. Cost of transport and selling to total cost is the lower quartile firm. Cost of transport and selling per factory employee is less than the average firm and a little higher than the lower quartile firm. Cost of selling per factory employee is lower than the lower quartile firm, probably the lowest in the industry.

Again, net sales per £1 of selling cost is higher than all ratios in the industry and probably is the highest.

Although this on the face of it may appear to be a satisfactory position, in fact it is related to sales policy rather than effective control of distribution cost. Top management's policy is a conservative one of securing large orders from a few customers, a policy which results in a satisfactory selling cost position through employing a small number of sales representatives, but carries a great deal of risk.

Cost of transport per factory employee is higher than average but lower than the upper quartile; it is higher than 50% of firms in the industry. This represents another problem area, although this is a large scale organisation with a few customers; two factors which affect the ratio beneficially.

However, net sales per £1 of transport wage is much higher than the upper quartile firm. Although this is a favourable comparison, it is largely due to conservative sales policy and to transport policy of depending largely on outside contractors.

Net sales per £1 of transport cost although higher than average is lower than the upper quartile firm. This supports the fact that the factory depends to a large extent on outside carriage rather than on its own vehicles.

Therefore, although cost of sales is satisfactory, it is largely due to a conservative sales policy which carries a great deal of risk. Cost of transport on the other hand is higher than average, as such it represents a problem area.

Again, the same problems were stressed in 1959, 1960, 1962 and 1963.

The 1963 selling cost to value of production was less than the lower quartile whereas the transport cost was higher than the third quartile. This again stresses a transport cost

problem and a satisfactory sales cost position which is due to employing a small number of sales representatives and securing large orders from a few customers.

5. Cost of Administration

The 1958 ratio of cost of administration to value of production is a little lower than the average firm, but higher than the lower quartile firm. All the other supporting ratios stress this fact. Cost of administration to total cost is average. Cost of administration per factory employee although higher than the lower quartile is much less than the average firm. Again, net sales per £1 of administration wages is much higher than the upper quartile and probably is highest. Also, net sales per £1 of administration costs is much higher than the upper quartile.

However, administration staff wages per administration employee is much higher than the upper quartile. It means that although administration cost is reasonably lower than the average firm in the industry, this is not due to low paid staff. On the contrary, in spite of highly paid staff, administration cost is reasonably lower than average; this is largely due to large scale organisation.

Again the 1959, 1960, 1962 and 1963 ratios stress the same fact.

To sum up, the ratio analysis proves that operating costs of production and transport do not compare favourably with other competitors in the industry; as such these represent two main problem areas. Moreover, if the effect of commercial operations is excluded, the ratios show low operating profitability.

(c) Use of Capital Ratios

1. Net Sales per Capital Employed :

The 1958 ratio is less than the lower quartile and probably the lowest in the industry. It signifies that sales are too low to fill the available capacity. In 1958, the group financial accountant, commenting on the ratios, recommended that sales should be increased at least by one third in order to remedy the situation.

In 1959, the situation improved; the ratio was average but much better than that of 1958.

However, in 1960 the ratio was again much lower than average in fact it was the mid-point between the lower quartile and average firms. It was a little less than that of 1959. However, it stresses the problem of under utilisation of capital.

In 1962, the ratio was again much lower than the average firm. However, it was higher than the lower quartile firm and than that of 1960.

In 1963, the ratio was again lower than that of the average firm but much higher than the lower quartile. However, the ratio was much less than that of 1962.

Although the ratio of the average firm in the industry improved steadily between 1958 and 1962 and dropped in 1963, the factory's ratio improved greatly in 1959, dropped slightly in 1960, improved slightly in 1962, and dropped again in 1963. However, the factory's ratio was always less than average except in 1959 when it was equal to the average firm.

Therefore, this signifies an under-utilisation problem.

2. Fixed Assets/Total Assets Ratio :

In 1958, this ratio was higher than the third quartile, which means that the factory's ratio is higher than 75% of its competitors. This pinpoints two main problem areas, spare

capacity and at the same time the current assets ratio is much lower than 75% of the industry which means a shortage in working capital.

In 1959, the ratio was again higher than the upper quartile firm, and showed an improvement on the 1958 ratio. The 1960 ratio again stressed the same fact, with an improvement on 1959.

The 1962 ratio however was a little lower than the upper quartile firm and was again lower than the 1960 ratio.

However, the 1963 ratio showed a different pattern; for although it was higher than the upper quartile, it was again higher than that of 1962, 1960 and 1959. On the whole the factory's ratio although higher than the upper quartile improved gradually up to 1962, However, in 1963, the position was worse. This again pinpoints a problem area.

Although it can be argued that this is not an important problem on the grounds that the factory is a subsidiary and as such depends on the group for finance, and although this is true to a great extent, it has been ascertained from the group financial director that the cost of finance is rather high as the parent company borrows the needed money from its bank at a high interest rate.

This analysis supports the under utilisation problem and suggests a new but a related one; shortage in working capital.

3. Materials Consumed/Stock of Materials Ratio

The 1958 ratio is higher than the average firm. It signifies a satisfactory turnover of materials; better than 50% of competitors. This, however , looked at from another angle actuates the inflation of profit ratios as a result of commercial operations.

In 1959 the ratio was that of the upper quartile firm; better than 75% of the industry and much higher than that of 1958.

The 1960 ratio was a little higher than average but lower than the upper quartile. However, it was less than that of 1959.

The 1962 ratio again was higher than average and lower than the upper quartile.

In 1963, the ratio was higher than the third quartile and much better than that of 1962.

On the whole the ratios signify a satisfactory turnover of materials. However, it also inflates the profit figure as a result of commercial operations and as such it confuses comparisons as to the effect of cost and efficiency.

4. Average Trade Debts/Sales per Day Ratio

The 1958 ratio was lower than the average firm; as such it is satisfactory. The 1959 ratio was even better than that of 1958 and than 75% of the industry as the ratio was the lower quartile firm. Again in 1960 and 1962 this was the case.

In 1963, however, the ratio was much better than even the lower quartile firm.

Therefore, this does not represent a problem area in this factory.

D. Main Problem Areas

To sum up, the main problem areas in this factory are :

1. cost of production
2. cost of transport
3. low operating profitability; excluding the effect of profit on purchases.
4. under-utilisation of capital
5. shortage of working capital
6. conservative sales policy.

Thus, these problems need an effective control system. As such managers' use of the system is a necessity in this case.

SECTION II: THE PLANNING STAGE

This section presents the planning stage of the budgetary system in three parts. The first constructs a theoretical model. The second presents the empirical system, and the third evaluates the empirical system.

The Theoretical Model of Operational Budgets:

Before discussing which theoretical approach is best suited to the factory, some of the main circumstances must be summed up. The factory has a spare capacity, and although this spare capacity is existent for a long time, sales is improving slowly - 55% in the last ten years up to 1964. The factory's market has increased by 48% in the last ten years, whereas the total market has increased by 30%, thus the market is not stagnant as claimed by top management, on the other hand it is expanding.

Being in an expanding market with spare capacity means that factory management can not depend entirely on last year's experience. Last year's performance could only be taken as a guide which needs further development through scientific analysis and cannot be taken as the only criterion to forecasting in these circumstances.

If management adopts the sales budget approach, this requires a special study of the existing and potential markets, cyclical and seasonal variation patterns and probable trends. This special study would give management the general framework of the sales budget. Apart from this special study, management has to go through a laborious job to survey the market. However, the job size being greater than that of factories 'A', 'B' and 'C', the survey is less difficult. This apart from the general economic study of trends, gives a specific programme of action as to how to arrive at and achieve a realistic budget.

The main object in mind must stem from the particular circumstances of the factory; the fact that the factory deals with a few big customers and that it still has a spare capacity.

The starting point should be an analysis of last year's sales order by order and evaluate each of them, and the probable extent which the factory can secure it and the probability of securing it whether it is a high probability, a fair chance, or a small degree of probability. This could be done by each sales representative through evaluating all the orders in his own area with the sales manager checking this, and at the same time evaluating the direct orders which comes directly to the factory and not through a sales representative.

Again each representative could be asked to survey his own area in order to evaluate the probable market and to report to the sales manager the state of the market, the main competitors and their policies.

This could help top management to plan to tackle the spare capacity problem in a more scientific way since the results of the general economic study can give an indication of the probable sales figure for the budget year, and if adjusted to suit the results of the specific study could give management an indication of the sales figure, comparing this with what the factory can produce. Top management can decide whether it is worth while to change its policy in order to attract the needed sales volume to fill the available capacity in terms of price and selling conditions or sales reorganisation.

In this factory the general economic study is most important as the sales force is a small one. Therefore, they can only report on their areas which is only a part of the whole market. The economic study on the other hand would reveal the potentialities existent in the whole market and in the constituent areas. A comparison of the results of the two studies would then help top management to decide whether it is worth while to extend its market in the other areas and to expand its sales force.

The plan is objective in the sense that it is more realistic and scientific than depending entirely on last year's experience or just providing a figure as a result of a top manager's judgement.

This proposed method of general and specific studies of the market helps management to plan sales as accurately as possible and since sales has to be planned any way, the method is still valid under whatever approach management would choose. For one thing, the sales budget conditions all other budgets either wholly or partly. For another, the market conditions do not seem to affect the sales budget at all here, since whatever the actual result of 1963 or 1964, the next budget would have a higher figure than last year's. Again since under-capacity utilisation represents a problem here, sales planning must be as accurate as possible.

So instead of depending on experience and judgement, and ignoring the market conditions, what the proposed method does is to take advantage of managers' experience and use it in a scientific way. Sales planning then could have been carried as accurately as possible according to the proposed method. However, the factory's management did not choose this approach.

The second approach which the factory could have followed is the production capacity approach. This approach would result in a realistic production budget, but a rather vague and unrealistic sales budget unless the earlier proposed method of sales planning is adopted on the sales side.

The main two problems of the factory are a conservative policy which carries a great deal of risk and under-capacity utilisation. Although the two problems are inter-related, dealing with one alone does not automatically solve the other; since the ancillary problems of sales mix and balancing the work through the factory would then appear. So, solving the sales problem through detailed sales planning and effort may actuate the problem of balancing the work through the factory, although it may partially solve the under-utilisation problem

On the other hand, tackling the problem of under capacity through detailed planning of the production capacity results in a vague sales budget as well as actuating the sales mix problem.

An independent person such as the works accountant in this case could work as the coordinator of the plan since departmental managers are not trained to prepare their own budgets. However, a significant distinction between coordinator and the sole preparer or participant in the planning stage of the budget should be drawn. A coordinator is the one who coordinates all these facts and views together, and as such provides a technical service to non-technical people, i.e. managers, without influencing his own views unless accepted by managers. A preparer on the other hand is the one whose aim is to provide a budget according to his figures, own judgement and the views of a limited number of top managers. This in fact is a distinction between what Dr. Perrin in his thesis call administrative and non-administrative budgets. To put it simply, the first implies managers' participation or serious consultation whereas the second only implies accountant's figures and views and consultation of a limited number of top managers.

The result of this exercise would be to arrive at an agreed realistic, detailed and pinpointing programme of action.

It could be argued that the top manager, being in business for ten years or so can give a figure of what is expected to be achieved next year, without going to this detail and laborious exercise. This may be true and in actual fact happens in some factories. Even if the result of the top manager's forecast is exactly the same as that of the detailed exercise, it is still beneficial from a control point of view to adopt the detailed approach since at the end in comparing actual results with budget, under the first approach of top manager's experience and judgement, he would in most cases give a general reason or excuse for failure to achieve the budget, such as the unfavourable market conditions.

This would result not in a pinpointing correcting action but rather in a theoretical argument, whereas the second approach of detailed planning would give pinpointing reasons for failure or success such as this particular order did not materialise for so and so, such reasons would enable specific correcting action. As the reasons for failure under the detailed approach would come from the original field, sales representative concerned whereas under the second it would come generally from the top manager.

However, although this approach would give the factory's management an objective basis to evaluate production department's actual performance, unless coupled with a detailed and careful sales planning - as that proposed earlier - would result in a vague total figure for sales budget and sales mix which would not be achieved except by chance as no detailed programme of action has been given by sales management.

The third approach which could be adopted by the factory's management is profitability. Management could have started by evaluating the actual return on capital, and then put an estimated return to be the basis for all budgets. In order to maintain the relative importance of the factory to the group and to improve its relative position in the industry, management must improve on their actual return index through improving sales, at the same time maintaining sales price or reduce it in a less proportion than the increase in sales, more utilisatinn of the production capacity and reducing the cost of production, selling and distribution. However, this would mean a serious and detailed planning of most aspects of the firm's activities; sales, production and cost at the same time.

This would be by far the most ideal theoretical and objective approach to follow in this case since it provides a programme of action which starts by how to solve the main problem areas. This approach although logical in theory tries to deal with all the

main problems of the factory at the same time. It also assumes a dynamic management from top to bottom.

As such, this approach is rather difficult and unfeasible to apply in the existing empirical circumstances of the factory. Thus, another approach has to be found which meets the theory in broad terms and at the same time considers the practical problems and limitations, and tries to deal with the main problems one at a time.

This new approach would have to involve a careful and detailed planning of sales, at the same time an independent detailed planning of production capacity with a decisive compromise (coordination) of the two independent plans within the factory's profitability objective. This new approach entails the best of all three theoretical approaches as well as it takes into consideration the particular circumstances of the factory, as apart from being applicable it deals with the two main problem areas of sales and undur-capacity utilisation.

Again, solving these two problems would automatically solve the cost problem in part, as the overheads would not increase in the same proportion as the volume of sales and production for it would be distributed on a larger number of products.

The previous discussion provides a theoretical budgeting model which apart from considering the general theory of operational budgeting, it allows for the particular circumstances, problems and resource limitations of this factory. This model could be applied to the company in the short term on the assumption that the factory may need to switch to the profitability approach when the main problems of sales and under-utilisation are solved.

The Empirical System of Operational Budgets

The main representative budgets of the empirical system are the 1964 budgets. However, this will be supported by changes in the 1965 and 1966 budget and also the evolution of the system since 1959.

a) The system of operational budgets started in the factory in 1959; mainly because of the then financial director who introduced the system of budgetary control to all the factories in the group. As the first stage of development, the system was first introduced to plan profit and provide top management with information to be used as a basis for control. Although the system developed gradually between 1959 and 1966, three main phases of development could be distinguished; the 1959-61 era, the 1962-64, and after 1965. The main reasons for the distinction are changes in personalities in the organisation; in 1962 a new works accountant and a new work study engineer joined the factory; through their combined efforts, they introduced a stage of development.

In 1963, the commercial director became the general manager and the assistant production manager became the works manager; as a result a new stage of development was introduced to the system.

b) Before 1959, the company had an informal system of budgets whose main object was to check on selling rates. Before that time there were no formal budgets or formal system of information provided to management. Financial and cost information were regarded as top secret. Top managers used to know the information out of a notebook read in the board meeting by the general manager; the then commercial director and originally the accountant. The notebook contained a revenue account.

c) In 1959, the then Group financial director introduced a formal budgetary system to the factory. The system then developed to provide top management with periodic information (monthly and quarterly) to be used as a basis for their control.

d) In 1962, a new works accountant and a new work study engineer joined the factory. Through their combined efforts, they started a new weekly information system for departmental managers. Since that time, the system has improved, but the general structure remained the same. For example, in 1964, the seasonal variation pattern was calculated and integrated in the budget. This will be discussed in detail under the 1964 budget.

e) In 1965, the commercial director became the company's general manager. As will be seen from the analysis later on, he was the de facto controller in the company and being a general manager he wanted other managers in the organisation to use their budgets and control their own departmental performance and cost. This coincided with the promotion of the assistant production manager to be works manager. As a result, departmental managers were consulted for the first time about their budgets.

f) However, since the present Group financial director took over in 1962, he tried to study the company's problems and budgetary information system in order to improve it or start a new system altogether, as he did in factories A, B and C, but as a result of opposition from local top management, he was unable to.
This presents a very difficult problem, for although the group employs a highly qualified financial director, who works as a director with a management consultancy background, to the group and although he has a strong personality in his own right, he cannot improve the system because of this difficult problem; a human problem. And even now in 1965, although the position has changed in that the general manager feels that it is how managers' responsibility to use the system and not just himself, in a word he realises the need for change, he does not call upon the group financial director, the highly paid expert employed by the group to do it or for that matter any other outside consultant. This is indeed one of the most difficult of all problems since it involves human relations. However, in this factory it is at the background of many managerial problems, and is definitely at the background of budgeting.

g) As there were no other structural changes in the system, apart from those mentioned above, the 1964 budget gives a fair picture of the empirical model. This budget was prepared in this way.

1. The budget was mainly prepared by the accountant, the commercial director, the work study engineer and the sales manager.

2. The starting point in the budget is to arrive at a sales figure. This is always taken as an improvement of 3 - 4% on last year's figure. However, in 1965 the factory did not achieve its sales budget, but even so the 1966 budget was prepared, still 3% over the 1965 budgeted figure. The 1966 budget was an exception as it coincided with organisational changes at top management level. Thus, the usual practice is to do a little better than last year: 3 - 4% more. This figure is decided upon by top management, usually the commercial director suggests it, since he is the one who has all the figures, with other top managers adjusting it slightly or accepting it.

3. The usual practice, after preparing this total figure, is to give it to the sales manager who allocates the total figure to the different representatives. The starting point is the direct or house account; this is the account for the customers who order directly to the factory and not through representatives. These are the main big customers with large orders. The sales manager evaluates the actual value of each order and estimates the potential value in the next year. This then provides the estimated value for the direct account, and as this is the largest part of the factory's sales, it in fact is the larger part in the sales estimate. This is the easiest part in the forecasting process.

The sales manager then subtracts the direct account estimated value from the total figure, given by the directors; the balance represents the estimated value which is the sales representatives' responsibility.

This is then distributed between representatives according to the sales manager's experience and judgement; usually it is actual performance + 3% or over depending on the experience of the representative on the basis that management expects each representative to do a little more each year.

The sales manager then collates the two parts which represent the sales estimate for the factory in each area under each representative in terms of sales value only.

This is then presented to the commercial director who may adjust it and then, if approved by the local and parent boards, it becomes the sales budget.

4. As to the production budget, it is prepared separately, at the same time or even before the total sales figure is forecast. The first detailed production budget prepared in the factory was in 1963, after the appointment of the new accountant and the new work study engineer.

The starting point is to arrive at the production capacity on the available resources. The production capacity is arrived at by the commercial director and the accountant, who go through production departments one by one and evaluate the actual and potential capacity for each machine.

The production capacity is then taken as the basis of labour and overhead budgets. In October 1962, the new accountant before going through the productive capacity of machines with the commercial director, went to the production department managers to ask how many machines, workers and so on were actually working in the different production departments.

If production department 'A' is taken as an example, the commercial director and the accountant go through the machines in each cost centre and decide whether the machine is obsolete or not, and if not what is the actual and potential capacity for the machine. This is done through their experience and knowledge of the machine's past performance. If they find it difficult to ascertain some items, they ask the works director or the departmental manager.

This results in a general evaluation of the productive capacity of the factory.

5. The next step is to calculate the labour budgets: this is done at the same time as calculating the detailed production capacity for each machine, cost centre and department.

The main problem here is to forecast the number of direct and indirect workers for each department, the overtime needed and the forecasted lost time, non-productive and efficiency of the different workers on the different machines or operations.

As to the number of direct and indirect workers, this is determined from the pay roll and if in doubt the accountant asks the works director or departmental manager.

As to overtime, this is decided for all the machines and cost centres as a certain percentage of normal week hours, 5%. The percentage was arrived at by the commercial director on the basis of his experience and judgement. In fact the percentage was the same for 1963 and 1964 budgets, for all the cost centres, although they know in advance that some machines will do more than that and some will do less.

As to lost time, this is again taken as a certain percentage of normal week hours + overtime. This again was arrived at in the same way by the commercial director and was taken as the same percentage for all the cost centres.

As to non-productive time this is based on scientific standards prepared by the work study engineer. However, in 1964 some departments were not on scientific standards; this was then determined on the basis of last year's performance, experience and judgement.

As to efficiency, this is arrived at by the work study engineer for each machine or cost centre by averaging the actual efficiency of last year and exercising his own judgement as to the potential efficiency expected in the next year.

As a result of collating this information, the detailed production budget for each machine, cost centre, department and the factory becomes a straightforward exercise.(1) The only difference is in the case of departments who are not on scientific standards. The alternatives of non-productive, efficiency and machine runs standards are arrived at by the commercial director according to last year's figures, experience and judgement in order to calculate the production budget and to determine the group bonus.(2)

As to departmental labour budgets, these are calculated on the basis of the information collated by the accountant from the pay roll, work study engineer indices, and consultation with the commercial director.

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(1) Normal week hours x overtime % = [illegible] week hours x lost time % = lost time. By deducting lost time, this would give hours on incentive x efficiency index = standard hours. Standard hours - non productive time = standard hours on production. This is then transferred in terms of runs on the basis of scientific standards and then divided by number of hours in order to give the budgeted machine runs per hour in the department. This represents the detailed production budget for each machine or cost centre. The collation of these give the departmental budgets which give the total forecast.

(2) Chapter IV, Section II, p.76 and 77.

As to the technical units, these are the same as the production budget, whereas the pay rates are taken as the actual pay rates, provided by the wages manager from the pay roll and adjusted if the commercial director or the accountant know of any feasible changes in pay rates during next year.

The accountant prepares for each machine or cost centre a direct labour forecast and the collation of all these forecasts represents the departmental direct labour forecast.

As to indirect labour cost, this is calculated for the department as a whole and then apportioned to the different cost centres. However, apportionment of indirect labour cost is calculated to arrive at a standard cost rate, rather than to use it for control, as the weekly control reports present indirect wages separately as a total figure for each department.

6. As to overheads, these are forecast for each expense individually for the whole factory rather than by cost centres or departments in order to save time.

The expense is considered as variable or non-variable according to the kind of expense and experience of the accountant. The degree of variability of expenditure is related to production in terms of forecasted standard hours.

The total cost of each variable expense is determined by this formula; technical usage rate per hour of last year production x present price rate x standard hours forecasted for the budget year.

Then these expenses are allocated to the different cost centres in the department.

Non-variable expenses are taken as last year and adjusted for any known or feasible factors. The total is first calculated for the factory as a whole and then is

distributed to departments and cost centres within the departments.

Then the standard cost per hour for each cost centre is calculated in this way; forecast labour cost plus forecast overhead, divided by output in terms of forecast hours on incentive. This rate is then used for control as will be seen later on.

Sales value for each cost centre is then arrived at by multiplying the forecasted hours on incentive by the present selling rates. By subtracting the forecasted cost from it, the budgeted profit for each cost centre is then ascertained.

7. The material forecast is prepared by the commercial director according to his experience. He knows that on average the factory used so many tons of paper to produce so much sales. For example, if sales value was £200 last year and the factory used 5 tons of board on average, for this year's forecast if the sales value is £240 the board needed would be 6 tons.

The average cost per ton is known from last year's figures and is adjusted by the commercial director on the basis of his judgement and any known information as to the potential changes in the market. This will give the material cost forecast in total.

As to materials mix, this is again prepared by the commercial director on the basis of last year's actual figures, adjusted according to potential feasible changes forecast by the commercial director.

As to other materials, these are forecast in the light of past performance and experience.

The collation of all these figures gives the material forecast. The material forecast cost does not usually affect the profit figures arrived at earlier since any change in material cost apart from contract customers is automatically passed on to

8. The Master Forecast.

The accountant collates the departmental labour and overhead forecasts in order to arrive at the factory's forecast which is collated with the material forecast to arrive at the total cost forecast and the departmental profit forecast.

This is then compared with the sales forecast, in order to arrive at the master forecast which presents the total forecast profit figure. This then concludes the calculation of the master forecast for the year.

As to the periodic (monthly) revenue forecast, this was calculated on the basis of the number of working days in the period concerned.

This forecast is then presented to the local and parent boards for approval, and if approved becomes the approved budget.

9. Sales Seasonal Variation Pattern.

In 1964 however, there was a new development of integrating the seasonal variation pattern in the sales budget. The chairman of the company asked the group cost accountant to prepare the 1964 periodic sales forecast on the basis of actual deliveries and net production.

The pattern was determined, through drawing the periodic sales curves for the last four years and ascertaining the best fit. This year's forecasted sales are then allocated to periods on the basis of the best fit, arrived at through averaging the four delivery figures for each period of the last four years. These averages are then calculated as percentages of the total average. Then the percentages are applied to the 1964 sales forecasted figure in order to arrive at the forecasted seasonal variation pattern. This is then integrated in the sales forecast and not the production.

The production forecast is allocated to the constituent periods on the basis of the number of working days in each period. However, before 1964 the seasonal variation was calculated through adjustment in stock.

10. To complete the picture the group accountant prepared a balance sheet estimate and a tentative five year long term master forecast. The fixed assets estimate was based on top management's recommendations of their requirements and disposal of capital goods. On the basis of this information, the group cost accountant estimated each type of fixed assets as follows :

(Actual balance in September 1963 - depreciation for three months + forecasted additions in 1964 - forecasted disposals and depreciation in 1964.)

The current assets, apart from cash, are estimated on a number of sales weeks targets. Stock figure is so many sales weeks, and so on for the other assets.

Then, the sources of finance are estimated, taking the balance; the difference between the two sides on the balance sheet as the forecast cash figure.

11. In 1965 the budget was prepared on the same basis, even the same percentages on overtime and lost time were taken as the same. In fact, the 1963 budget became the basis for all the budgets in 1964 and 1965.

The only difference is that most departmental managers were consulted. However, the consultation process only started at the end of 1965; for the 1966 budget.

Evaluation of the Empirical System

1. Although sales represent one of the main problems in the factory, sales forecasting was extremely tentative. No market survey or research techniques were adopted at all.

However, this is related to top management's conservative sales policy of concentrating on a few customers with large orders, and of top management attitude of doing a little more next year. (3 - 4%)

Again, being in an industry which provides a service to other industries, and as such its planning is directly related to that industry and indirectly to the consumers entails a greater deal of risk, therefore planning must be as accurate as possible. The factory's top management depends on experience and judgement rather than the available scientific techniques.

In comparison with the theoretical model, it can be seen that surveying of each representative's area's actual demand, industry's and factory's potential demand, the main competitors and their policies and his reasons for success or failure to meet his budget is an essential market research technique in this case. As such, the theoretical model tackles the factory's main problem of under-utilisation and sales. It may also help to diversify sales in terms of distributing sales to a large number of customers, and as such reducing the risk attached to the present policy of concentrating on a few customers with large orders.

2. Again the empirical System does not tackle the problems of sales mix, of balancing the work in the factory, and in relating the two together in order to adjust the sales policy or the capital policy or both. Therefore the budget is extremely tentative as far as these aspects are concerned.

3. The sales seasonal variation pattern, although calculated and more scientific than past experience alone, is still less scientific than many methods in statistical analysis

since the best fit still carries a great deal of experience and judgement whereas the least-squares method for example does not. The application of such technique is within the factory's reach as the group employs highly qualified staff.

4. Again, the sales cyclical variation pattern is not calculated at all, although this is important in this case since the factory had a spare capacity and management's policy is to fill it in the long rather than the short term.

5. The sales budget figure is extremely tentative, although it may be argued that a top manager with long experience in the business can suggest a figure according to his experience and judgement. And even if this figure may be exactly, although doubtedly so, the same one which comes out of the market survey, it is still a tentative figure from a control point of view since if it is not achieved the general excuse of unfavourable market conditions will be the cause, as often said, and this would not enable a pinpointing corrective action, as this would need a pinpointing and realistic cause.

   On the other hand, the proposed theoretical model would pinpoint the reasons for not securing this and that specific order, and as such it could enable specific corrective action. Thus, the proposed method is more accurate control-wise.

6. Sales representatives are not consulted at all on their individual budgets. They do not even participate in surveying the market, and as long as top and senior management's attitude of "they would not add to it" remains, it is not feasible that sales representatives would be consulted or participate.

   This in theory would create accurate budgets; pinpointing plans of actions rather than general and vague total sales figure. It would also help to create more interest in the budget and as such give it a greater probability of use by representatives. Although it may be argued that if managers get more interested, this may give the budget a higher probability of use; it

also makes the manager more departmental-centred with deterrent effect to the company's interest as a whole.

Although this may be true, in this particular case it does not apply as each of the sales representatives work in a different area and being more area-centred in his job, this would not have any detrimental effects on the company as a whole.

Consultation becomes even more important in the 1966 budget since the sales budget has increased by the usual 3 - 4% of 1965 and that expected for 1966. Unless it is explained to representatives why this is so, and what is expected of them, and how to achieve it, the budget can never be a realistic programme of action.

Although it may be argued that consultation would result in easy targets, this in fact is not true according to the 'A' and 'B' case studies. Again they can only prepare easy targets if they are not cross-checked by the senior accountant and top management. As the theoretical model provides cross-checking, it is highly improbable that a sales representative would get away with easy targets. Again, non consultation implies ignoring the knowledge and experience of the nearest people to the market, sales representatives, whereas responsible consultation as suggested by the theoretical proposed model would result in getting the information from the nearest level to the market and, through cross-checking, it would evaluate objectively the validity of the targets. Consultation also involves decentralisation of the planning process whereas non-consultation does not.

7. There is no planning of tolerance limits at all. As the budget at best is an estimate and an estimate carries a degree of inaccuracy, a tolerance limit must be planned. The other main use of tolerance limits or bands is in the control stage in order to enable all managerial levels to judge objectively the actual performance in comparison with budget.

Under the empirical system it is up to the manager, senior manager and his experience to decide whether variations are under control or not.

8. The correlation of sales and production budgets is extremely tentative in general. Specifically the fact that the accountant budgets for the same amount of overtime whether the budget is 100 or 104 means that overtime is not related to actual production or sales in any scientific way.

9. The 1963, 1964 and 1965 budgets used the same overtime rates and lost time. This is extremely tentative and assumes that the business is static, although in fact sales were planned to increase during the three years.

Again, this practice does not take advantage of actual performance figures of 1963 and 1964.

10. The fact that the same overtime and lost time percentages are taken for all cost centres and departments does not take any notice of the particular circumstances of the different department, the actual product mix, the seasonal variation pattern. It implies a degree of inaccuracy in the budget.

11. Again, the non-consultation of the departmental and works managers concerned about the number of workers needed or expected during next year involves another degree of inaccuracy in the budget.

12. Budgeting the degrees of variation of expenses is extremely tentative and unscientific since it depends on the accountant's view rather than statistical analysis. This involves a degree of inaccuracy in the budget which confuses the explanation of variance and as such confuses the smooth operation of control.

13. Apportionment of expenses to cost centres is arbitrary in theory and practice, and although it may help to calculate selling rates, it does confuse control since it carries a degree of inaccuracy.

14. Budgeting material usage, mix, and prices are extremely tentative and general.

15. Departmental managers were not consulted at all about their budgets. Consultation would help here to prepare a practical accurate budget and at the same time it would work as an educational means to arouse manager's interest and improve his appreciation of the budget and his understanding of the figures.

16. No procedure for preparation and compilation of budgets in the factory or the group is outlined. This makes it difficult for newly appointed accountants to prepare budgets in the same steps followed by the old accountants cince the process is only kept in the accountant's and commercial director's minds. This practice also makes it difficult to revise and improve the system. This procedure if prepared could be used to train junior accountants in the factory.

17. There is no formal time table as to which budgets are to be prepared and to their time sequence, although this is preferable according to the general theory and sound practice.
In fact, however, there is a kind of informal time table since budgets must be approved by local and group boards by the first week in December. Therefore all subsidiary company's budgets must be prepared and approved by the local board before that time. As the local board meetings are usually in the third week of November, therefore, this is the last date by which all budgets must be completed.

However, it is up to the accountant to start when and with which budgets. In fact, he usually starts with production or labour budgets.

18. As far as the general theory and theoretical model are concerned, managers must know their approved budgets before the beginning of the New Year.

So, a copy of the departmental budget must be provided to the departmental manager with a summary copy for all departments

to senior manager and top managers and with a master budget for all top managers.

In fact, no copy of the budget has been issued to any manager before the beginning of the New Year. On the production side, some managers first know about their budgets from the periodic information provided, whereas others who do not get the information do not know their budgets at all.

As to service managers, they neither know their budgets nor get any information. However, as a result of consultation in 1966 some of them knew their budgets. So, had there been consultation with all managers, this would never had happened.

As to sales representatives, they know when they are given their targets.

As to senior managers, mostly they know as a result of consultation.

As to top managers, they know as a result of discussions on the board and from the periodic information.

To sum up, this is a tentative planning process from a control point of view, which depends on experience rather than scientific methods, with only the labour budget partially scientific.

Also, the budget is an accountant's model with participation of a limited number of top management. As such this is bound to have an adverse effect on managers' use of the budgetary information.

CHAPTER VIII

SECTION III: THE CONTROL STAGE

This section presents the Control stage of the budgetary system in three parts. The first part constructs a theoretical model. The second presents the empirical system and the third evaluates the empirical system.

The Theoretical Model of Control

Since the discussion here is confined to the general principles, therefore the same theoretical model of control presented in factory A [1] applies to this case as well.

As to the detailed information returns, these are discussed under the empirical system.

Empirical System of Control

The object of this part is to present the empirical system of control. This is presented under the framework of the information system, the overall performance of the factory's information system, and the three major detailed systems of sales, production and services.

A) Framework of the Information System

As mentioned before, the information system has developed gradually since 1959. Before that time, there were no formal systems of information to different levels of management. Financial and cost information were regarded as a secret; the general manager[2] would read the information out of a notebook in the board meetings. The notebook contained a revenue account.

Since 1959, however, the then group financial director introduced a formal budgetary system to the factory. The system was then developed to provide top management with periodic information; monthly and quarterly information about the overall performance of the factory, to be used as a basis for their control. At that time, however, departmental and senior managers did not get any information at all.

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(1) Chapter V, Section III, p.155.

(2) The then commercial director, and originally the Accountant.

In 1962, production departmental managers were provided with weekly information, following the appointment of a new accountant and a work study engineer. However, service managers were neither given their budgets nor any periodic information.

At present, 1964 and 1965, the system provides top managers and directors with monthly and quarterly information to help them control the overall performance of the company, as well as with weekly information to help them control departmental performances. Production senior managers get the weekly information only to help them control departmental performance, with an individual departmental statement given to each production departmental manager.

As to service managers, they do not get any budgets or information . However, at the end of 1965 they were consulted about their 1966 budgets.

As to sales, this is controlled through information provided by the group sales director to the local and group top managers as well as to the factory sales manager.

This is a general summary of the information provided to management.

As to interpretation by the accountant, it has been ascertained that, unlike the theoretical model, the accountant does not provide this service to shop floor managers. In fact, the accountant did not interpret the implications of the budget or information to managers, and managers rarely see him. What actually happened was that in 1962 when the new accountant took over, he asked production departmental managers about how many machines, workers, etc. there were. It was ascertained that this was a queuing process which was designed to help the accountant calculate the departmental budgets,

rather than a consultation one, as has been claimed by the management, as it was the accountant's or commercial director's figures which were integrated in the budget rather than the original figures given by the manager.

Again when the new weekly departmental information system was introduced, several lectures and explanation notes were given to departmental managers by the accountant and work study engineer. However, it was ascertained that this had no effect whatsoever on the use of budgets and information, although managers claim that it was of general interest. In comparison with the theoretical model, it was the practice rather than the alternative of simplified information given to managers in their own language. As will be seen later on, the information provided was highly technical and most managers regarded it as difficult to understand.

Again, in introducing the budget figures, managers were neither consulted nor informed about them. Furthermore, the interpretation process of the technical implications of the budget was not carried on. In spite of this, managers did not understand the implications of the budgets and information, and the budget responsibility was assigned to them.

B) Overall performance of the factory's information system

The control system provides top management with weekly, monthly (periodic; each 4 or 5 weeks) and quarterly information.

The weekly and periodic information is provided by the works accountant, whereas the quarterly information is provided by the group headquarters' accounts section. However, unlike the other factories studied, two bases of the information are maintained; weekly and monthly information are based on the factory's cost returns whereas quarterly information is based on the financial accounts, with a reconciliation at the end of each quarter prepared by the commercial director.

The weekly, monthly and quarterly information are complementary to each other, in the sense that they all concern the revenue account, but for different periods. The quarterly information also reports on the balance sheet position and capital statistics.

a. Weekly information :

A weekly operating statement summarising the activities of the company in a week is provided by the accountant to local top management only, with a file copy kept by the accountant.

The statement is divided into two parts; the first part presents a summary of the factory's activities in a week, whereas the second part presents a summary of all production departments in a week. The distribution of the second part is wider than the first in that the works manager and chief work study engineer also get it, to help them control departmental activities.

The first part presents the following information : sales in terms of invoiced value, and its average per day, and tonnage delivered and its average per day. It then presents a comparison between standard profit as collated from estimates and the actual profit for the week, with the different variances, which result from sales discount on large orders, waste sales and departmental profit or loss.

The statement compares actual performance with budget for the week and cumulatively for the quarter to date. The statement also shows the number of working days in a week.

The statement objectives are :

1. to give information about the profitability of the factory.
2. to pinpoint the variances and as such to help top management control.

3. to summarise departmental performance.

4. to be used as a basis to prepare the monthly statement.

The first part of the statement gives a general idea of the factory's weekly sales, and profitability. Although the figures are subject to adjustment, on the whole this part of the form gives a general idea of the factory's sales and profitability. It also compares estimated profit with actual profit and pinpoints the extent and reasons for the variances.

The top manager can glance at the variances and see them in greater detail on the second part. As such the first part is considered the principal part whereas the second only presents details of the departmental variances.

Thus, the principle of presenting a concise general picture with details on other parts of the form is maintained. This helps top management to pick up the significant variances and then follow them up on the detailed part of the information and as such this is suited to top management.

The statement also presents the actual profit or loss figures for the quarter to date week by week, and as such it helps to show the trend of profit, and in comparison with the budget, helps to show the extent of effort needed to be exerted in the remainder of the quarter to achieve the quarterly budgeted profit.

However, the form separates the comparisons of actual from budget since it does not compare weekly actual performance with weekly budget or cumulative actual with budget. On the other hand, it presents the budget for the week and cumulatively together with the actual figures on the other end of the form. As such the form does not facilitate comparisons with budget.

Again the information does not relate sales to its cost. It only gives an adjustable actual profit figure. It cannot by itself answer questions on cost, apart from profit and sales.

Again, instead of comparing budgeted profit with actual profit the main criterion used is to compare estimated profit (as collated from the sales estimated) with actual profit. As such, this confuses the issue, for instead of asking why did not we achieve our budgeted profit, the issue becomes why did not we achieve our estimates. Furthermore, as estimates are based on experience rather than scientific standards, the validity of the estimate figures becomes more tentative than that of the budget.

Again the standards used in the sales estimate are not the same standards used in the budget, as the budgeted cost per hour for each machine is increased or decreased as a policy matter in order to arrive at the selling rates used in the estimate. As to the technical units used in the estimate, they depend on the estimator's own experience and judgement, and therefore they are different from the budget which depends partly on scientific standards and partly on accountant's or commercial director's experience.

This throws doubt even further on the validity of the estimate as a basis for comparisons. A logical improvement here is to use the budget temporarily, and then use the scientific standards as a basis for comparison through integrating them in the budget. The only figures which are helpful for control are sales, departmental profit or loss and actual profit. The other information is detailed adjustments, which are useless for top managers' control.

As to its use, it has been ascertained that it is only used for control by one top manager, with the others only using it as a matter of interest.

The second part of the form, on the other hand, presents detailed information of the departmental profit or loss total figure shown on the first part. Its main object is to explain the total departmental variance figure in more detail and as such is a useful information for control since it could work as a basis of top and senior management's follow up.

The form presents for each department the actual cost of production in terms of wages, variable and fixed overheads, and the sales value of production, the profit or loss for the week and period to date, and an analysis of departmental variance analysed to planning and technical, selling rates, efficiency, wages and capacity.

The planning variance includes losses arising from using different machines than those assumed to be used in the estimate, i.e. one colour job is printed on a more expensive machine of two or more colours. This, although on the face of it may be taken as the production planner's responsibility, in actual fact it is not; it is due to the limitations of the available capacity, to the poor correlation between estimating and the actual production capacity of the factory and to the poor liaison between the sales force and the needs of the factory. In fact, this is one of the main results of budgeting in total without taking any consideration of the relationship between the production and sales mix.

However, the information is useful in that it helps the directors to suggest buying new machines.

The selling rates variance is important since it keeps a constant check on the selling rates in comparison with the standard cost rates which are based on the budget.

The total standard cost variance indicates whether the cost centre has achieved its budgeted cost or not. In fact, all the variances are mostly related to questions of policy and as such are wholly relevant to the directors' job.

However, the main drawback of the information is the high technicality of its language and as such it needs an accountant minded manager to understand it and act upon it. This limits the use of the information. In fact one top manager only uses it for control, with one senior manager using it as a matter of interest.

Thus, although the information is theoretically intended for control, in practice very little use for control is secured.

b. Periodic (monthly) information

At the end of each period, a statement which is a summary of the first part of four or five weeks is presented to local and group top management and is used as a basis for discussions on the board.

As such the main criticisms apply to it.

However, in 1965 the form was slightly improved. It presents the following information: sales, estimated cost of sales, and the estimated profit as total figures of the sales estimates for the actual orders secured in the period, with an analysis of variances between the actual profit figure and the estimated one.

The new form presents the following variances; material price, material usage, process spoilage, wages variance, efficiency, volume, expenditure, selling rates, waste sales, and other detailed adjustments such as stock adjustment. It also compares actual with budget for the period and cumulatively to date. It shows the variance for the period and cumulatively for the periods to date. Furthermore, it compares cumulative performance with that of last year.

However, although this form is an improvement on the old one in terms of contents, and presentation, it still is highly technical and too detailed since it shows fourteen variance figures. The logical improvement here would be to group the similar variance together and show the detailed ones in a different part or form altogether. This would help top management to concentrate on the main variances and follow them on the detailed statement.

Again, the language of the form is highly technical and as such limits its use.

Furthermore, the form takes the sales estimate rather than the budget as a basis for comparison. This as mentioned before confuses rather than helps control.

However, the form provides top management with a general idea of the factory's profitability which is used as a basis for discussion on the group and local boards and as such is a basis for group and local top management follow up.

c. Quarterly Revenue Statements

The quarterly information is provided by the group headquarters accounts department and is based entirely on detailed financial accounts records, which the group headquarters keep for this and some other factories to get the most economical value out of the machine accounts system.

The accounts department in the group headquarters keeps the nominal ledger accounts together with personal accounts and all invoices. At the end of each quarter, the department provides local and group top management withthe following information:

1. Quarterly revenue account
2. quarterly departmental trading account
3. financial report
4. balance sheet
5. capital statistics.

1. Quarterly revenue statement

At the end of each quarter, the accounts department provides local and group top management with a quarterly profit and loss statement. The form provides detailed information about materials, wages and overheads costs, as well as trading profit and its appropriation.

The information is presented on two sheets of double foolscap size. For each column, there are about 90 items of information, and as the information compares with budget, and with the same quarter of last year, there are nearly 270 figures, 3 figures for each item, and in the last quarter of the year there will be 540 figures since the information presents in addition the actual figures of each of the previous quarters.

Thus the information is too detailed, and although presented in a simple way is too much and as such is not suited to top managers time and education. A top manager is usually busy, and he cannot read all this detailed information and understand it in a short time. Again, top managers are not concerned with details. They are mainly concerned with the general picture , with details only as supporting information to help them follow up certain points and area problems.

Again, although the information is presented in a simple way, just a collation of the nominal ledger accounts, it needs 'an accountant-minded' manager to understand it and know where to look for the figures he needs, and, as there are only two managers who fit the description, the information is not really suited to other top managers.

However, the information provides percentage calculations of the main categories of cost to sales, such as materials percentage to sales and so on. As such it partially helps managers to see the main items.

The information does not present any trends or cumulative figures, and as such it does not help top management to see the extent of effort needed to achieve the budget at the end of the year. However, the information gives the actual figures for each of the previous quarters. Although this would show a trend, it does not compare the cumulative figure with budget in order to see the extent of effort or action needed to achieve the annual budget and as such this form is not good enough for control.

The objects of the form are :

i) to give top management the general picture of the quarterly performance.

ii) to be used as a basis for control; through corrective action as to policy and as a basis of group and local top management's follow up.

iii) to be used as a basis to calculate the future quarterly accounts.

To satisfy these objects the form has to be changed to a more condensed profit statement which gives only the important categories of cost on the same lines as factories A and B, at the same time giving important details only on a supporting statement. Again the cumulative figures should also be included on the form rather than presenting the actual figures of the previous quarters. Another improvement would be to adopt the marginal costing principle and to use an integrated cost and financial system. However, local top management is opposed to both. In fact, the form achieves its third objective and to a lesser extent the second object. As to the first object, although it does

not really achieve it, other accountant minded managers explain it to the other managers. Thus very little use of the form for control is maintained.

2. Departmental Trading Account.

This form presents the sales and detailed cost of the different departments in the factory. Again the form is too detailed as is the quarterly profit statement. It does not compare actual performance with budget, and does not show any cumulative figures or trends.

It is not even important as far as top management is concerned. It is only detailed information which supports the profit statement. The general manager although strongly believing in departmental accounts, gets better presented and useful information from a control point of view weekly which presents the weekly and cumulative trend for the quarter.

As this form serves no purpose to the budgetary control system whatsoever, the logical improvement would be to improve its presentation in the sense that each department's cost must be presented separately in comparison with budget for the period and cumulatively to date.

This present form confuses rather than helps to control, for in the case of the departments, the manager would be lead to say that as department A is more profitable than department B, therefore it would be more profitable to invest more in department A and less in department B rather than whether department A cost is in a state of control.

This is confusing on two grounds. First of all it leads the manager to compare the relative profitability of each department rather than to see whether the department's

cost is under control and thus has a confusing effect from a control point of view. Secondly, it has been proved, mathematically, that the idea of improving profitability through a change in the relative allocation of investment in the different departments is not sound on the basis that this is bound to change the expectation of profit for departments A and B. (1) In changing the character of a system which has generated a profit in part A, we alter the expectation of profit in part A.

The proposed improvement would not involve the same confusion, as the departments are not compared together and as each department's cost is compared with budget. This would concentrate the manager's attention on the problem of control rather than relative profitability.

3. The financial Report.

The report is prepared by the group financial accountant and is presented to local and group top management. The report is an independent comment on the overall performance of the factory which pinpoints the main problem areas and as such is reporting by exception.

The report is even more important to managers since it explains in non-technical language the results of the quarter and pinpoints the main problem areas. As to its use for control, it follows exactly the same pattern as the revenue statement.

To sum up, these are the main statements, provided quarterly to enable top management control the overall revenue

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(1) The Theory of Operational Research, by Stafford Beer, The Cost Accountant, pp. 198-211, June 1964.

performance of the company.

To complete the picture, a balance sheet and a capital statistics statement are presented to top management quarterly to enable them control capital expenditure. The statements provided are the balance sheet, the capital statistics, and movement of funds statements. Their design is exactly the same as in factories 'A' and 'B'.(1) However, unlike factories 'A' and 'B' no graphs are presented.

However, although the forms are highly developed, they are only used by the financial director as a basis for group capital control, and with a limited use by one local top manager.

As has been mentioned before, although in theory and accountant's view the information is intended to be used as a control model, in practice very little use of the information for control is maintained. One of the main reasons in this case is the slow development of capital, in fact it has been ascertained that capital did not change at all in the last ten years.

This concludes the overall control of the company's performance. The next step in the analysis is to present the major detailed controls for sales, production and services.

C) Major detailed controls in the factory.

This part is divided into three sections. The first presents sales control, the second presents production control, and the third presents service control.

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(1) Chapter V, Section III, p. 168.

1. Sales Managers' Information System:

The main statement is that provided by the group sales director, as the basis of the actual information provided by the factory's sales department.

The statement is provided to group and local top management as well as to the sales manager.

The objectives of the form are :

i) to report to group top management, i.e. the parent board on the sales performance of the factory.

ii) to report to local top managers so that they use the information as a basis for their control of the general sales performance.

iii) to report to the sales manager his representatives' performance; to be used as a basis for his follow up.

The form is divided into three parts. The first presents sales in terms of deliveries, the second presents a detailed analysis of sales by responsibilities, and the third gives an analysis of the orders accounts.

The first part in turn is subdivided into three sections : the first section presents actual sales value for each period of the last and the present year, thus enabling comparison between the year under consideration and the year before. The second section presents comparisons with budget since it presents the budget figures for each period, the number of working days and the percentage of actual performance to budget. The third section presents the trend in terms of moving annual total for the year under consideration and the year before. It also presents the percentage of the moving annual total figure flor the year under consideration to that of the year before.

Thus at a glance this part of the form presents the sales figures for each period in the year under consideration in comparison with budget and the actual performance of the

year before. It also shows the trend for the year under consideration and the year before. However, it does not compare budget with actual cumulatively. The percentage of actual to budget shows right away the extent of variance. This part helps a general evaluation of the sales position, with other parts as supporting details; a principle which considers the circumstances and problems of top managers.

The second part of the information presents a detailed analysis of sales by responsibilities, actual performance of each sales representative. It presents for each representative his actual sales figure in terms of deliveries and orders accepted for the period under consideration and cumulatively to date. As such, this part of the form helps to pinpoint responsibilities and inform top and senior management of the performance of each sales representatives in comparison with his budget and the percentage achieved of the budget.

The third part of the form presents information about orders, taking orders as an account in the financial sense. It gives the balance of orders at the beginning of the period in terms of monthly and quarterly averages, in number of orders and their values, it then gives the orders received, and the orders despatched in the period, and the balance at the end of the period. Comparing this with budget, it tells managers the effort needed to achieve the budget in the remainder of the year in terms of orders needed.

For group top management the second part is considered as a supporting detail of the first part of the form since they are mainly concerned with the general policies and sales trends of the group rather than with the performance of individual representatives.

Local top management is mainly concerned with the general sales position in order to see the whole picture. However,

they need the detailed statement of responsibilities to follow the main problems through and to use it as a basis to follow up the sales manager on specific performance.

The sales manager, on the other hand, needs the form to see the general picture on the first part, and mainly to follow up representatives on their specific performance on the results of the second part of the form.

However, it was ascertained that the information is used for general interest, and although group top managers followed up local top managers on its basis, sales representatives were only followed up once a year in the sales conference.

Thus, although the information is used, its use is limited in extent. This is mainly due to local top management's attitude of giving a representative about five years to establish himself, then expecting him to do a little better next year. This was also related to the significance given to the direct accounts and the small degree of importance attached to the sales representative.

Again, this is also related to top management's conservative sales policy of expanding very slowly 'doing a little better next year'.

Another evidence which shows that management is static here is that the form is given six weeks after the event. It was originally intended for the parent board which meets nearly seven weeks after the period ends, and, although this was too late for all the other three factories studied, 'A', 'B' and 'C', it was quick enough for control processes in factory 'D'.

As to cost, the manager was not given any information and he even thought it was controlled at group level.

2. Production Managers' Information System

The system provides departmental production managers with weekly information to help them achieve their budgets, at the same time providing weekly information to senior and top management to help them follow up departmental managers.

a) Departmental Managers' Weekly Information

The information provided on the weekly statement is collated in the first instance from the shop floor. The form is divided into two main parts; the first is provided by the work study engineer and the second is provided by the accountant. The form presents the department's weekly activities in terms of cost, time and variances.

For each cost centre, a machine or a number of machines or operations, the information provided on the first part of the form is as follows : clock hours, standard hours and hours on incentive, lost time as a percentage of clock hours and non-productive time as a percentage of the net running hours, also the four indices of departmental performance, machine runs per hour, operator efficiency and operator pay.

The departmental performance index represents the average standard minutes produced on productive work per each manned hour.

As to machine runs per running hour, it shows the average number of printed sheets of boards in an hour. This is a technical term used by managers on the shop floor which indicates production per hour.

As to operator efficiency index, it presents the average standard minutes produced by workers in the hour, whereas the pay index shows the minutes paid per manned hour.

All the indices, apart from number of runs, is in terms of minutes per hour, taking the base as 60 minutes per hour. The form also presents the standard hours produced, that is the net running clock hours at standard. As such this part of the form provides information about weekly departmental production and efficiency.

The question then arises what is the theoretical use of this part of the form? The theoretical model provides that managers should try to achieve their budgeted performance; in this case production. Therefore, each departmental manager should try to achieve his production target; standard hours produced or average runs per running hour. This would be achieved, other things being equal, if overtime, lost time and non productive time is kept at its budget level.

Thus the control process becomes controlof deviations of actual overtime, lost time and non productive from the budget. Also the manager should encourage his labour force to achieve the budgeted efficiency in order to achieve the budget. However, this is less important, for first of all the efficiency index is that of last year's average, and second the efficiency is indrectly related to the incentive scheme.

But, does the manager have the authority to control these items? The manager can control lost time and non-productive time through concentrating his supervision on the machines with exceptionally over-budget lost time and non-productive. If this is achieved, this would partly control overtime. Furthermore, overtime could be controlled before the event. Moreover, the control of the previous items would result in the control of the cost of those items.

However, as two of the main items, overtime and lost time, are planned arbitrarily by the accountant who budgeted the same figure for all cost centres, knowing in advance that some cost centres will be over whereas others will be under these averages, those items become inaccurate as far as the manager is concerned, and in some cases unachievable. Therefore, this hinders control.

Thus, to budget for an average, which is an easy process in order to arrive at a budget, results in an inaccurate budget which hinders the achievement of the target, it hinders the control process.

Another factor which hinders the control process and which is ascertained to be true by most managers is the difficult language of the information. There is only one item which is understood fully by most managers; machine runs per running hour, as this item is provided in shop floor language. As ascertained from the theoretical model, it is illogical that a manager would use his budget in the right way if he does not understand it.

Although lectures were given, they in fact had very little effect. The logical improvement here would be the simplification of the information in shop floor language. The actual performance figure is compared with budget for each cost centre. However, the information does not show any trends since it does not present the cumulative figures.

Another problem is that the information does not enable managers to pinpoint responsibility for low performances since the information is not given for each machine separately, on the other hand it is given for each cost centre which may have more than one machine. As such the information is general in that it gives managers the general problem areas and not the specific ones. A logical improvement here would

be the presentation of information for each machine rather than cost centre.

Although the main object of this part of the form is control, in fact it was ascertained that only one manager used it for control, with all the others not using it at all.

The second part of the form provides information about labour and overhead cost and is provided by the accountant. This part presents the value of production at standard, wages, overheads and variances. The value of production at standard represents the standard hours produced at standard cost rates, which are calculated on the basis of the budget and not the selling rates used in the estimate. Thus, the basis for control here is the budget which is more accurate than the estimate.

The form also presents the actual wages in terms of basic wages and incentive earnings and the actual overheads.

The form presents variance analysis; that is the variance between value of production at standard and the actual cost of production analysed to lost time, labour performance in relation to fixed expense recovery and labour cost recovey combined with variances on labour basic rates, overtime premium and machine running. These represent a total of controllable variance, with capacity variance as non-controllable item .

The total variance is the departmental profit or loss which is the difference between the standard hours actually produced at standard cost and the actual cost of the standard hours produced.

This in fact amounts to the application of an adjusted variable budget (based on the original budget rates) in order to make comparisons meaningful.

The lost time variance is the net result of three variances; lost time, non-productive and excess; allowance in terms of standard minutes paid in addition to the normal standard minutes value to cover the technical and operating difficulties outside the operatives control.

The first difficulty with this variance is the mis-statement of its title. The manager is bound to understand it as lost time variance. If manager of department A looks at cost centre A, he will find that although he has done better than budget by 1.6% the financial part of the form indicates an adverse variance of £15. This is confusing to the manager. This confusion, if the manager is not interested enough, would lead the manager to forget about the information.

Another difficulty is the collation of more than one variance together. This hides and confuses the facts. As such it hinders control.

As to labour performance (fixed expense recovery) variance, this shows the effect of direct labour on non-variable expense in cost centres. This can only be used as a matter of appreciation of the effect of efficiency but it cannot be controlled since this is related to efficiency which is partly influenced by the manager.

As to labour performance (labour cost recovery) variance, this reflects the financial affect on labour cost as a result of a different basic rate, overtime rate or machine manning from the budget. This although mainly uncontrollable by manager is considered as a part of the controllable variance.

These three variances together represent the total controllable variance.

As to capacity variance, this presents the effect of the level of activity on non-variable cost, on the assumption that the greater the hours worked, the less the non-variable

expense per unit as a result of more utilisation of production facilities. This variance is mainly uncontrollable as far as the departmental manager is concerned since it is the responsibility of production planning. The manager can in fact partly control it through controlling lost time, non productive time and overtime.

The information regarding overheads is out of managers' control since this is an arbitrarily apportioned figure given in a total sum figure. A logical improvement here would be to distinguish between those items of expenditure that are within manager's control such as purchases of indirect materials. This would help the manager to appreciate the variance and to exercise control before the event, i.e. when he orders the purchases.

Also the information does not distinguish between variable and fixed expenses since all expenses are treated as overheads. This is contrary to the theory and to sound practice.

> "It is fundamental to sound cost accounting that fixed expense should be distinguished from variable expense. The distinction is of far greater significance from management control purposes than the ordinary financial analysis of expenditure to its nature. The percentage addition for overhead which is frequently made on computing cost will normally produce misleading results unless the fixed expense is dealt with separately from the variable expense". (1)

The third part of the form represents a total of the cost centres performances, and shows the average performance of the department as a whole. In addition to this, it presents the indirect wages cost and variance. As such this is the first part which the manager should be concerned with. This gives him the total picture of the department. At this stage

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(1) Institute of Chartered Accountants in England and Wales, Standard Costing, London, 1956, p.24.

he can pinpoint the main problem areas and then follow them through on the other parts of the form to see which cost centres are pulling the departmental indices to a lower performance than budget. He can then guess which machine in a cost centre is doing worse than budget and allocate his time of supervision accordingly.

What actually happens is that only one manager uses the form, with all others taking no notice of it whatsoever. The information is criticised for its highly technical language and as such is not suited to managers' education, experience and training. The information is too detailed and gives the manager information about which he can do nothing. This information is too late, two weeks after the event. However this is not important since the main use of the information is to pick up the worse than budget cost centres, and these repeat themselves. It is more important to control cost centres which constantly pull the departmental performance down rather than to control the cost centres which are worse than budget once or twice a year.

To conclude, although the information is intended for control, in fact it is seldom used as such.

In this case, the main unfavourable factors present are non-consultation, difficult laguage of information and now - follow up. Non-use is mainly due to the difficult language of the information and non-following up. Non-consultation has a small effect here in that it could only work as an educational and informative process.

The criticisms of the information by managers, reveal a significant fact; it proves that what the accountant or work study engineer or both think the manager needs is not what the manager thinks he ought to get.

An experiment was carried out in this factory to see whether participation in form design would be useful. The

result was that participation at this stage is meaningless since every manager wants a different form altogether. Managers who never had any information at all cannot give a clear picture of what they want, and managers who had some successful experience in other companies want the same forms used there.

The logical form of participation here is consultation. This should be done at two different stages; first, after a provisional design by the system designer and, second, after the system is put into operation. This is imperative in this case in order to guarantee that the information provided suits managers' background and training.

Furthermore, consultation about budgets is also important here as an educational and informative process. It is also important to improve manager's attitude to budgets and information.

This if applied would improve the effectiveness of this control system.

b) Senior Production Managers' Weekly Information

The only information given to senior managers is the second part of the weekly operating statement described under the overall performance of the company's information system.

This part of the form, as mentioned before, presents information about the total weekly variance between actual and standard cost, based on the budget rates, for each department. Although it pinpoints which department is pulling down the total variance for the works, it does not give detailed information to the senior manager concerned to follow up on its basis. It is only summarised information which enables vague and general rather than specific follow up.

The logical improvement here would be to give a summarised statement as a supporting statement to this one, and give the details of departmental performance and cost.

Thus, this would enable the works manager to see the general picture and pinpoint main problem areas on the first form, and to follow them through on the second supporting statement.

If this were integrated in the system, the probability of manager's use would be greater than at present.

c) Top Managers' Weekly Information

The weekly information provided by the accountant to top managers and local directors is exactly the same form presented to departmental and production managers with an additional part called - summarised weekly operating report .

This part of the form presents for each cost centre and totally for the department the following information: standard cost of production, indirect wages and total standard cost. This is then compared with the sales value of production on the basis of the present selling rates, with the difference as the total variance of the cost centre. The variances are then analysed to planning, selling rates and standard cost variances. The variances are presented for the week under consideration and cumulatively for the quarter to date. However there is no comparison with budgets.

The information also presents the totals for the department, for the week under consideration and cumulatively for the quarter to date. As such it shows the quarterly trend and the extent of effort needed to improve the variance.

The forms main objects is to control the departmental costs, to be used as a basis for policy changes, and to help prepare the periodic statements.

In fact it is highly technical, and as such is only used by one top manager, who is highly qualified to understand it. Thus the form achieves its third object in full, but partially achieves the first and second objectives.

This information is given for each department, and apart from being detailed it is also highly technical and needs an 'accountant-minded' manager to understand it.

The system of control in 1964 was as follows: the commercial director being a highly qualified accountant understands the figures and reports any serious variances to the managing director who in turn asks the works director to act upon it; thus other directors do not really use the information, however they act on the commercial director's advice.

Here, the information does not consider top managers' time and training. The logical improvement would be for the accountant to report on exceptional basis in a simplified language to the top manager. In fact what actually happens amounts to the accountant preparing the form and the commercial director using his judgement to report exceptions to the managing director only. So, the commercial director is doing the accountant's second part of the reporting process. Had this been done at the accountant's level, the time of the director would have been saved and not wasted on exceptional reporting which is the accountant's responsibility.

In 1965 the commercial director became the general manager. He wants other managers to use the information, although it is difficult to achieve this in the present circumstances. This could only be achieved if a structural change in the system is implemented which would come about through coupling the top manager's desire to change with constant and serious follow up. This, if successful, could lead to a spiral of follow up which would result in managers taking the system seriously and, as such, constructively criticising the information. If

these criticisms are then evaluated and integrated in the information, there would be a greater probability for managers' use.

However, as this is unlikely to happen, the best temporary solution is to employ a full time shop floor controller. His job would be to study variances and their trends, and to advise managers of the probable effects on cost as a result of exerting the same effort rates.

As such this would be a practical solution in the present circumstances. This in fact was accepted by one of the top managers in the factory on the assumption that this is much easier than changing the managers' attitude towards the budget and the information.

This however is a short term solution. A long term one would be the constant training of managers before they are promoted to be departmental managers, or appointing only managers who are trained on budgetary control and who look at it as part of their jobs.

This has proved to be successful in that the only manager who uses his budget is the one who had high education and training in budgets, Although this was the only different factor in his case, he initiated consultation, use and follow up.

However, one piece of evidence which contradicts this is that a manager in the same circumstances with the same high budgetary training did not use his budget. It was ascertained that the reason here is his frustration since the cost budget was too high and in his opinion impossible to achieve. He tried to improve the budget and make it practical, but he did not succeed as a result he became frustrated and did not take any notice of the budget.

This evidence then does not contradict the previous recommendation.

d) Service Managers' Information System:

In fact managers, although some are highly educated, are not provided with any information whatsoever about their budgets or actual performance.

The only improvement here was that towards the end of 1965, service managers were consulted about their budgets but they did not get any information about it.

The logical improvement here would be to give them a monthly departmental statement which presents the cost of the department. Whether a service manager should get the information or not, the criterion should be whether his cost is controllable and significant or not since the object of the whole exercise is to enable managers to control their cost in this case.

An Evaluation of the Control System:

As each of the different forms has been evaluated, this part will present an evaluation of the general structure of the empirical control systems using the theory, adjusted to suit the particular circumstances of the factory as the main check on its validity.

As mentioned before, there are four control systems; overall performance of the factory, sales, production and services.

1. As to Production :

a) The system does not provide the manager with information about material waste, although according to the general cost structure, material cost represents 60% of the total cost. As such materials represent a [illegible] t area for control in this case.

As materials price is top management's responsibility and is partly influenced by them, material usage becomes departmental management's responsibility. The significant controllable item here is waste. Therefore waste must be controlled.

However, as materials is not yet on scientific standards, this may be used as an argument against waste control. This is a groundless argument since this is no reason for not having waste standards. Although this is in fact done through the sales estimate and the revenue budget, it is rarely used for control.

In fact the main control procedure is that exercised by the materials warehouse manager before the event, since he only issues the material allowed in the estimate.

This, however, does not guarantee that this is the only material which will be used; as according to production process waste may result in issuing more material.

The only manager who can really control waste on the spot and when it happens is the departmental manager. However, he does not get information about waste. As such if he chooses to control it, the only available alternative is to use experience and as such this is a motivation against managers' use of the information.

To conclude, although material waste is an important area for control, the empirical system does not take it into consideration.

b) Furthermore, although the other items of production cost, wages and overheads are integrated in the control system, it has been proved in fact that very little use for control purposes is maintained.

c) No interpretation by the accountant as a distinct service to shop floor managers is provided.

d) No follow up by senior or top managers is exercised.

e) The information as mentioned before is not suited to managers' training, experience and education.

To conclude, very little use of the information is ascertained and unless structural changes as those suggested earlier are implemented it is forecast that the system will be ineffective from a control point of view.

2. As to Services

Here there is no control model whatsoever. Before the 1966 budget, the accountant used to prepare the budget without consulting the managers concerned and did not provide them with any information about their budgets or actual performance.

In 1966, however, service managers were consulted about their departmental budgets. However, they still did not get any information about it.

Unless the system develops on the lines outlined earlier, to include information and follow up, no use would be secured as consultation alone, although a favourable factor, does not secure use on its own.

3. As to Sales

Unless the attitude of top management towards sales policy and senior manager's follow up are advanced, to a favourable attitude towards sales force as an important and serious part of the factory's sales and to effective and more often follow up, the limited use of the sales budget secured by the representatives will not be advanced.

As to sales cost, a new control process has to be established, if control is to be effective.

Thus, to conclude, the sales budget is used in a limited sense whereas the sales cost budget is not used at all.

4. <u>As to the Overall Performance System</u>

1. No limits or bands of tolerance as suggested by the theoretical model are adopted. This is left to managers' experience and judgement.

2. The accountant does not work as an interpreter, on the other hand a top manager performs this job.

3. Formal follow up is ascertained by top managers.

4. The whole system, although partially used for control, has to be improved on the lines explained earlier in order to advance its use by all managers concerned.

Thus, to sum up, the control model involves four systems of information; overall factory performance, production services and sales. However, very little use is secured by the system mainly as a result of top management's attitude, education and training, and the provision of difficult information which does not suit managers' background and training. As such the system of control is ineffective, and therefore is bound to hinder managers' use of the information.

SECTION IV : FINDINGS CONCERNING MANAGERS' USE OF BUDGETARY INFORMATION

The object of this section is to present the findings of the case study which concerns managers' use of the budgetary information. The findings are presented in two parts; first findings concerning managers' use, and second the factors which affect such use.

Managers' Use of Budgetary Information

The evidence (1) suggests that out of the twenty-one managers studied, two use the budgetary information in accordance with the theoretical model of use, three use it in a limited sense, and sixteen do not use it at all.

The twenty-one managers studied belong to the three major detailed control systems of sales, production and services.

On the sales side, two managers were studied. As a result it has been found that the two managers use limited parts of the sales budget and do not use the cost budget at all.

On the production side, twelve managers were studied. The analysis of the evidence suggests that only three managers use the information. However, only two of them use it in accordance with the theoretical model, since they use their sales and cost budgets. The third manager uses only his production budget. As such his use is limited. Moreover, the other nine managers do not use their budgetary information at all.

On the services side, seven managers were studied. The analysis of the evidence suggests that they do not use the budgetary information.

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(1) For a detailed discussion and illustration of the method of analysis adopted in establishing managers' use and the factors which affect it, see Appendix 'D', Volume II, pp. 129-155.

Thus, to conclude, a limited number of managers use the information since only five managers out of the twenty one use the budgetary information. However, only two of them use the information in accordance with the theoretical model of use, and the other three use only limited parts of the information. Moreover, it seems that managers tend to use the most relevant information only since three out of the five managers use the sales and the production budgets and do not use the cost budget.

Factors which affect Managers' Use

(a) Findings based on Managers' Opinions Alone:

According to managers' views[1], it seems that the factors which support use in this case are : participation in budget-setting, regarding the budget as practical, and senior manager's follow up.

Moreover, the analysis of managers' views suggests that the manager's participation in budget-setting is important since it results in a practical budget, improves the manager's morale, and furthers his interest and backing to the budget. However, unlike the findings of Case 'A' and 'B', it seems that participation does not affect the manager's status. As such this agrees with the findings of Case 'C'.

On the other hand, it seems that participation furthers the manager's interest in his department and as such furthers his departmental-centredness. However, it does not affect cooperation between the managers with the same status and between the manager and his foremen, whereas it improves cooperation between the manager and his senior manager and between the manager and the accountant.

This is the first case, however, in which the managers agreed that participation improves cooperation between the manager and the accountant. This is largely due to the fact that the managers' participation was mainly through the accountant.

Furthermore, the evidence suggest that the senior manager's follow up helps to communicate the department's problems and furthers the managers' use of the budgetary information. It also suggests

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(1) Appendix 'C', Volume II, Tables C_1 to C_{42}, pp. 85-128.

that follow up improves the manager's morale and cooperation between the managers with the same status. On the other hand, it does not affect cooperation between the manager and his senior manager, between the manager and his foremen and between the manager and the accountant.

(b) Findings based on cross-checked opinions and facts.

The analysis of the factors [1] which affect managers' use of the budgetary information suggests that the two managers who use their information in accordance with the theory, use it mainly as a result of high education since in the two cases the managers concerned initiated use themselves.

Moreover, only one of them is followed up. However, the effect of follow up in this case is so small that it only has a supporting effect, since the manager concerned uses all the information and not only those parts which are followed up.

As to the three managers who use the information in a limited sense, the evidence suggests that one of them uses it as a result of training in budgets, for although he is not followed up and is not highly educated, he uses it. However, his use is of a limited nature. In the other two cases, the managers concerned use their budgets mainly as a result of follow-up since they only use those parts which are followed up.

As to the sixteen managers who do not use the information, four managers do not use it as a result of poor education. Moreover, they have long experience without budgets which resulted in a close supervision attitude. This in turn resulted in using their experience as a basis for control rather than the information.

Moreover, three managers do not use the information mainly as a result of non-follow up. Eight managers do not use it mainly as a result of non-provision of the information. Finally, one manager does not use his budgetary information as a result of having a too tight budget.[2] Although he initiated

(1) Appendix 'D', Volume II, p.147 and Table D_1, p.154.

(2) Too tight budget means too difficult to achieve. For the definition see Appendix 'C', Volume II, p.86.

use, he tried unsuccessfully to have a practical budget. As a result he always had an adverse variance whatever efforts he exerted. This frustrated him and as a result he did not use the information, although he was highly educated. Furthermore, he was not followed up, this seems to support his frustration since it gave him the impression that senior management does not worry about the adverse variance and does not recognise his efforts for control.

The evidence also suggests that the factors which do not by themselves establish use, but support it[1] are : long experience in budgets, participation or consultation in budget-setting, and the accountant's role as an interpreter. Moreover, the evidence suggests that most managers use those parts of the information which are followed up by their senior manager.

As to the factors which hinder or limit use, these are : poor education, lack of training in budgets , short or no experience in budgets, non-consultation in budget-setting, the non-provision of the information, and the interpretation service to managers, and having long experience without budgets.

The identification of these factors in itself suggests the remedy to the problems of non-use and of limited use. Thus, since the main reasons behind non-use are poor education, non-follow up and non-provision of the information, the remedy to the problem becomes that of educating managers, providing them with the information and following them up on its basis.

Conclusion

To conclude, the findings of this case support those of the first three cases since they suggest that managers use their budgetary information as a result of high education, or senior manager's follow up.

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(1) Appendix 'E', Volume II, p. 194

CHAPTER IX

THE FINDINGS OF THE EMPIRICAL STUDY

The object of this Chapter is to present a consolidation of the findings of the four case studies and the result of cross-checking them in Factories 'E', 'F', 'G' and 'H' of the limited investigations.

This Chapter is divided into two sections as follows :

SECTION I: presents the findings of the Case Studies.

Managers' Use of Budgetary Information
Factors which Affect Managers' Use

(a) Findings based on opinions alone

(b) Findings based on cross-checked opinions and Facts

Conclusion.

SECTION II : presents the results of cross-checking the findings of the Case Studies

(a) Findings based entirely on managers' opinions alone.

(b) Findings based on cross-checked opinions and Facts.

Conclusion

SECTION I: THE FINDINGS OF THE CASE STUDIES

This section presents a consolidation of the findings of the Case Studies in two parts: first the findings concerning managers' use of their budgetary information, and second the factors which affect such use.

Managers' Use of Budgetary Information :

The evidence[1] suggests that the percentage of managers using the budgetary information is low since out of the sixty managers studied, only twenty-eight use the information. Thus, less than half of the managers studied use their budgetary information.

Moreover, only six managers use the information in accordance with the theoretical model of use (nearly 10%; a very low percentage indeed).

However, there seems to be a high percentage of use in factories 'A' and 'B', on contrast with a low percentage of use in factories 'C' and 'D'. (FIG. IX.I).

The evidence also suggests that managers tend to use the most relevant budgets only since they tend to use the sales and production budgets and do not use the cost budgets. This was the case with twenty-one managers out of twenty-five[2]. Moreover, the evidence suggests that managers use those parts of the information which are followed up by their senior manager.

Thus, to conclude, there is a low percentage of use of budgetary information. Moreover, managers tend to use the most relevant information and the parts which are followed up by their senior managers.

(1) Appendix 'D', Volume II, pp. 129-154, and Table D_1, p.153

(2) In the other three cases, this does not apply since the managers are responsible for one budget only.

Factors which affect Managers' Use

a) Findings based on managers' opinions alone.

According to managers' views [1] it seems that the factors which support use are participation in budget-setting, regarding the budget as practical, and senior manager's follow-up.

Moreover, the evidence suggests that managers' participation in budget-setting is very important since it results in a practical budget and improves the manager's morale and status. It also furthers his interest and backing to the budget.

On the other hand, participation furthers the manager's interest in his department and as such furthers his departmental-centredness. However, it improves cooperation between the manager and his senior manager but does not affect cooperation between the managers with the same status, and between the manager and his foremen, and between the manager and the accountant.

As to follow up, the evidence suggests that it helps to communicate the department's problems to the senior manager and furthers the manager's use of the budgetary information. It also improves the manager's morale and the cooperation between the manager and the senior manager. However, it does not affect cooperation between the managers with the same status, between the manager and his foremen, and between the manager and the accountant.

b) Findings based on cross-checked opinions and facts:

The analysis [2] of the main factors which establish

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(1) Appendix 'C', Volume II, (Tables C_1 to C_{42}) pp. 85-128.

(2) Appendix 'D', Volume II, p.147, and Table D_1 p.153).

use, suggests that out of the twenty eight managers who use their information, eighteen use it mainly as a result of senior manager's follow up, seven use it as a result of high education, two use it as a result of both follow up and education, and finally one uses it as a result of training in budgets. Thus, 64% of managers use their budgets as a result of follow up and 28% as a result of education, and 8% as a result of both high education and follow up. Therefore managers use their budgetary information mainly as a result of high education , senior manager's follow up or both.

The evidence also suggests that the factors which support use are : education ,whether high or intermediate, training in budgets, long experience in budgets, participation or consultation in budget setting, follow up and accountant's role as an interpreter(FIG. No. IX.3 to IX.8). Moreover, managers tend to use the most relevant budgets only and they use those parts of the information which are followed up by their senior managers.

Furthermore, 83% of managers who use their budgets in accordance with the theory, use it mainly as a result of high education, while 17% use it mainly as a result of follow up. (FIG. No.IX.I).

In contrast, 77% of the managers who make a limited use of it, use it mainly as a result of follow up, while 9% use it mainly as a result of high education. Thus, while education and follow up result in use, education results in theoretical use whereas follow up results in limited use. (FIG. No. IX.I).

Moreover, the evidence also suggests that the factors which hinder use are : poor education, lack of training in budgets, short experience in budgets, non-consultation in budget

setting, non follow up, non provision of the information, non provision of the interpretation service by the accountant and having long experience without budgets. (FIG. No. IX.3 to IX.9) Moreover, regarding budgetary information by managers as irrelevant results in its non use.

Conclusion

Therefore, managers use their budgetary information mainly as a result of senior manager's follow-up, or high education, or both. Moreover, high education results in use being in accordance with the theory, whereas follow-up results in limited use.

SECTION II: THE FINDINGS OF THE LIMITED INVESTIGATIONS

As mentioned before [1] the results of the case studies were cross-checked in a completely different number of factories in order to find whether the same factors identified in the case studies are applicable to these factories or they only belong to a certain set up and to ensure that they did not come up by chance.

The factories chosen were completely different from the case studies, since they had different sizes, technologies, products, ownership, and management. Apart from factory 'F', they all are of large size, which ranges between 2,000-20,000 employees, Moreover, they are not in the ownership of the same holding company, rather they are different factories in different industries who have different systems of budgetary control.

The study in these factories was concentrated either on one department such as the works or on one budget. As such, it follows that the study does not represent the factory, but rather a significant part of it. Moreover, in most of these departments, the choise was confined to those departments in which there is a high percentage of use in the opinions of the executives concerned. It follows that the percentage of managers who use their budgets in these departments are unduly high, and therefore, unlike the case studies are unrepresentative of the typical organisation in this respect. However, this does not impair the results since the object was to cross-check the factors rather than to find out the percentage of use.

Moreover, since the study was concentrated on one budget or one department, therefore the question of the degree of relevance does not apply and hence could not have been cross-checked. However, the evidence of the case studies in this respect are conclusive by themselves.

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(1) Chapter I, Section II, Research Methods, pp. 39-51.

This section presents a summary of the results of the cross-checking in order to see whether they confirm or contradict the findings of the case studies. (1)

A. Findings based entirely on Managers' Opininns. (2)

Managers views in these four factories seem to be in agreement with those of the case studies, except for the following :

1. Effect of Participation on the Accuracy of Budgets (3)

The case studies suggest that participation results in a practical budget whereas there is a tie in the findings of the limited investigations as half of the managers think that participation results in a practical budget whereas the other half thinks it results in a little loose budget. (4) However, if the total effect of the case studies and the limited investigations is taken the result confirms that of the case studies. Thus participation results in a practical budget.

2. Effect of Participation on Manager's Status. (5)

The case studies suggest that participation furthers the manager's status whereas the limited investigations suggest that participation does not affect his status. As such, the two findings contradict each other. However, the finding of the case studies is only marginal. In this case, the total effect is taken. As a result, the findings of the limited investigations stand. Therefore, participation does not affect the manager's status.

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(1) As to the background material of each factory, this is presented in Appendix 'A', Volume II, pp, 1-34.

(2) Appendix 'C', Volume II, (Tables C_1 to C_{42}), pp. 85-128.

(3) Appendix 'C', Volume II, Tables C_3 and C_4, p.89 and 90.

(4) Practical means achievable. Little loose means easy to achieve. For the definitions see Appendix 'C', Volume II, p.86.

(5) Appendix 'C', Volume II, Tables C_5 and C_6, p. 91 and 92.

3. Effect of Participation on Cooperation between the Manager and his Senior Manager. (1)

The case studies suggest that participation improves cooperation whereas there is a tie in the findings of the limited investigation. If the total effect of the limited investigations is taken, the result is, participation does not affect cooperation. Thus, the limited investigation's finding does not agree with that of the case studies. However, the finding of the limited investigations is marginal.

In this case, the total affect of the case studies and limited investigations is taken. Thus, the case studies result stands. Therefore, participation improves cooperation between the manager and his senior manager.

4. Effect of follow-up on cooperation between the Manager and his Senior Manager. (2)

The case studies suggest that follow up improves cooperation, whereas the limited investigations suggest that follow up does not affect cooperation. However, the two findings are marginal.

In this case, the total effect of the case studies and the limited investigations is taken, as a result there is a tie. Therefore, it is difficult to deduce the effect of follow up on cooperation between the manager and his senior manager.

This concludes the results of the cross-checkings. As can be seen the disagreement only happened in four controversial and difficult problems. This disagreement in itself suggests the difficulty of these problems. Moreover, since they are multi-dimensional problems, they can on their own form a programme for future research.

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(1) Appendix 'C', Volume II, Tables C_{19} and C_{20}, p. 105 and 106.

(2) Appendix 'C', Volume II, Tables C_{37} and C_{38}, p.123 and 124.

B. Findings based on Cross-checked Opinions and Facts

The evidence suggests that out of the twenty-five managers interviewed only nineteen managers use their budgetary information. Thus, the percentage of managers who use their budgetary information is 76% (FIG. No. IX.2). As such this is unduly high on two counts; firstly this is due to the nature of the sample since it is biased towards managers who use the system. Secondly, this is due to the size of the sample, i.e. being a small sample. Thus the percentage which is typical is either that of the case studies (FIG-IX.1) or that which represents all the eight factories.

Furthermore, out of the nineteen managers who use their budgetary information, only six use it in accordance with the theoretical model of use while thirteen managers use it in a limited sense.

The analysis of the factors which establish use (2) suggests that out of the nineteen managers who use their budgetary information, twelve use it mainly as a result of follow-up, one uses it as a result of presumed follow-up, two as a result of high education, and four as a result of both high education and follow-up. Thus, 68% of managers use their budgets as a result of follow-up, 10% as a result of high education, and 22% as a result of both high education and follow-up. Therefore, managers use their budgetary information mainly as a result of follow-up, high education, or both. (FIG. No. IX.2)

The evidence also suggests that the factors which support use are those identified in the case studies (FIG. Nos. IX.3 to IX.8).

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(1) Appendix G_1, Volume II, Tables G_{37} and G_{38}) p.123 and 124.

(2) Appendix 'E', Volume II, p. 147, and Table D_2, p.154.

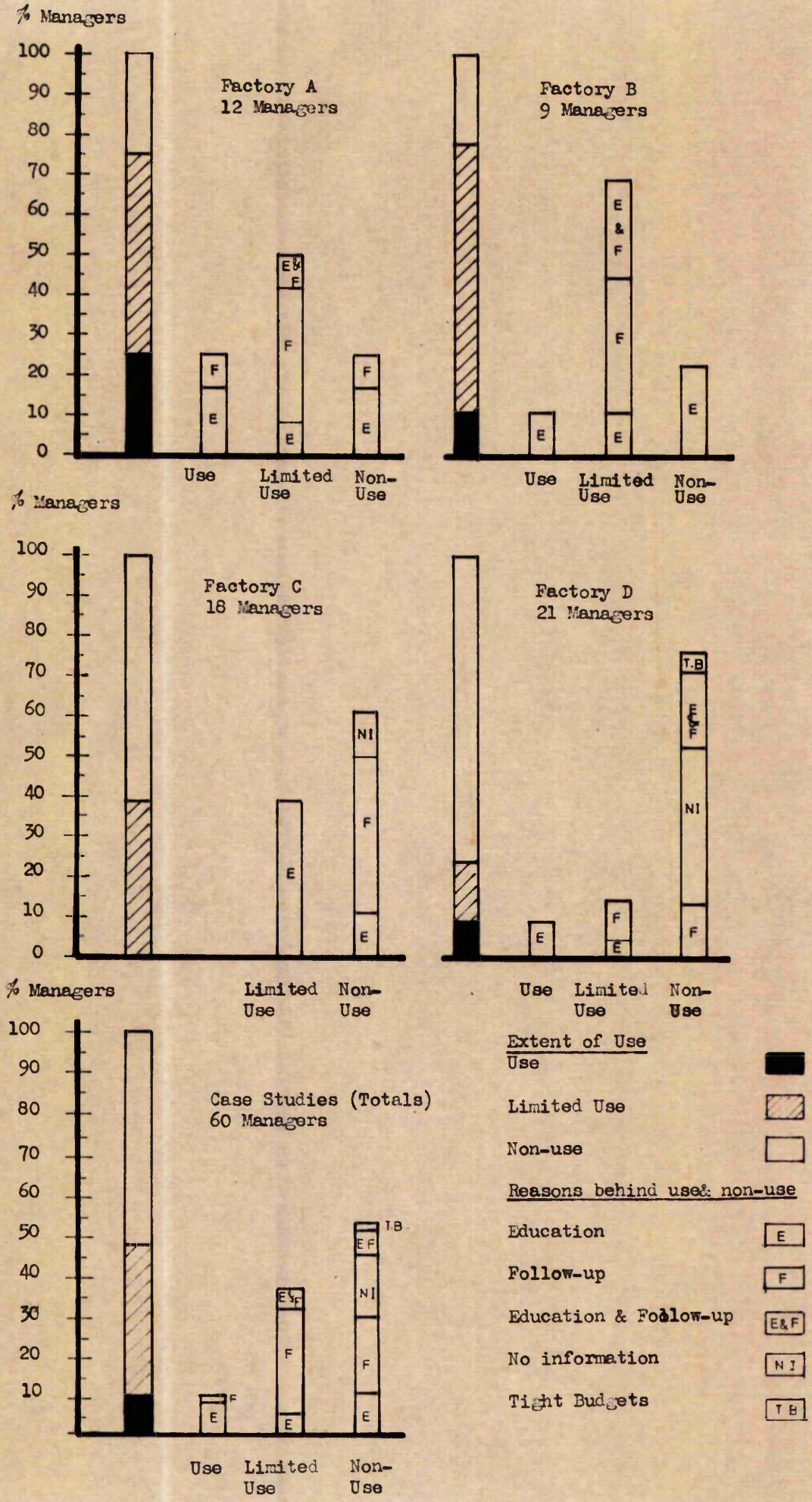
Furthermore, 50% of the managers who use their budgetary information according to the theory, use it mainly as a result of follow-up, 33% as a result of high education, and 17% as a result of both high education and follow-up.

In contrast, with managers who use the information in a limited sense, 77% use it mainly as a result of follow-up, and 23% as a result of both high education and follow-up. As such 33% of managers who use it according to the theory, use it as a result of follow-up while no manager who makes a limited use of the budget uses it as a result of high education. Thus, while education and follow-up result in use, it seems that education results in theoretical use whereas follow-up results in limited use.

Moreover, the evidence also suggests that the factors which hinder use are those identified in the case studies (FIG. Nos. IX.3 to IX.9).

Conclusion

Therefore, the findings of the limited investigations, on the whole, confirm those of the case studies, since they suggest that managers use their budgetary information as a result of senior manager's follow-up or high education, or both.



G. IX. 1. EXTENT AND REASONS FOR MANAGERS' USE OF BUDGETARY INFORMATION

CASE STUDIES

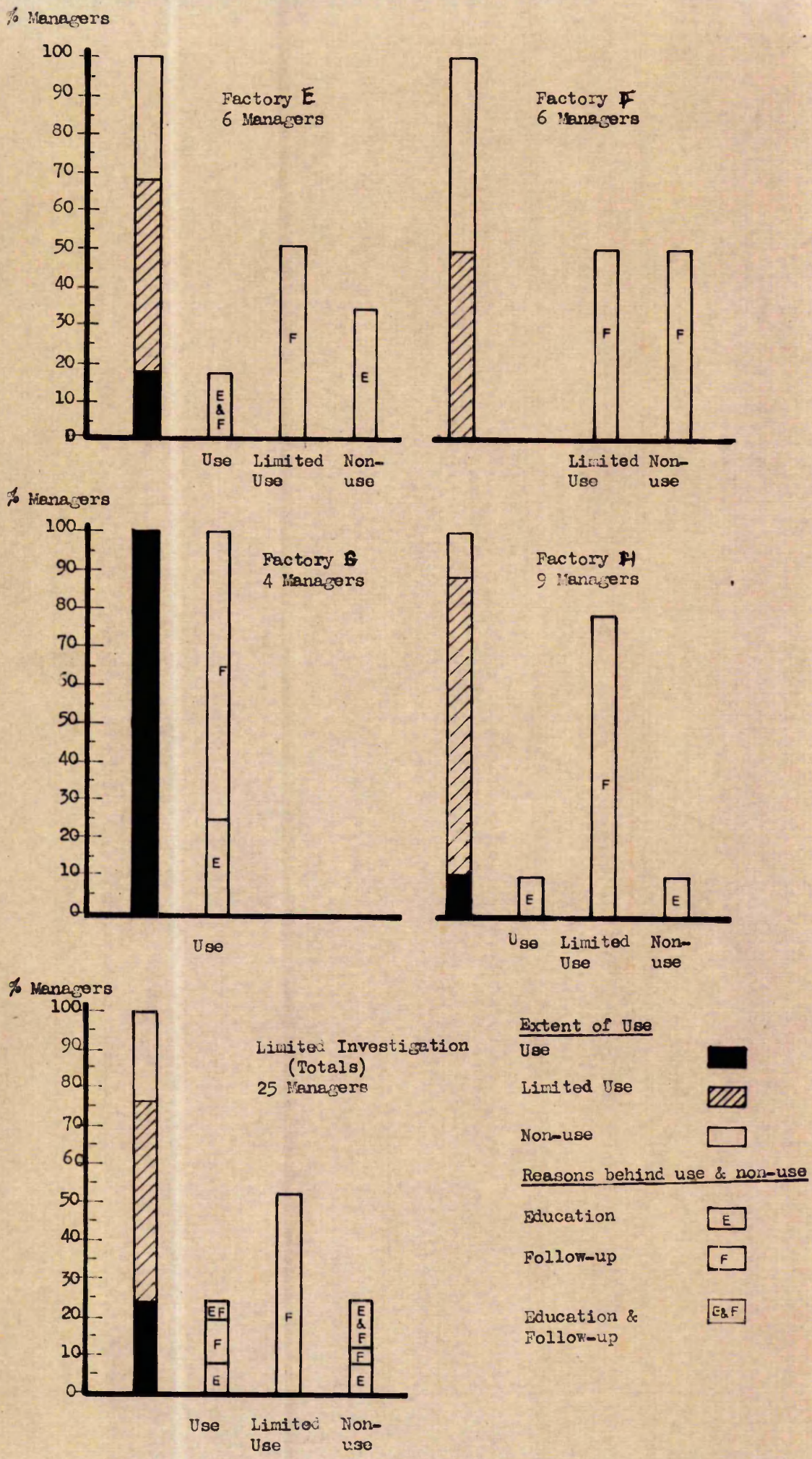


FIG. IX 2. EXTENT AND REASONS FOR MANAGERS' USE OF BUDGETARY INFORMATION

LIMITED INVESTIGATION

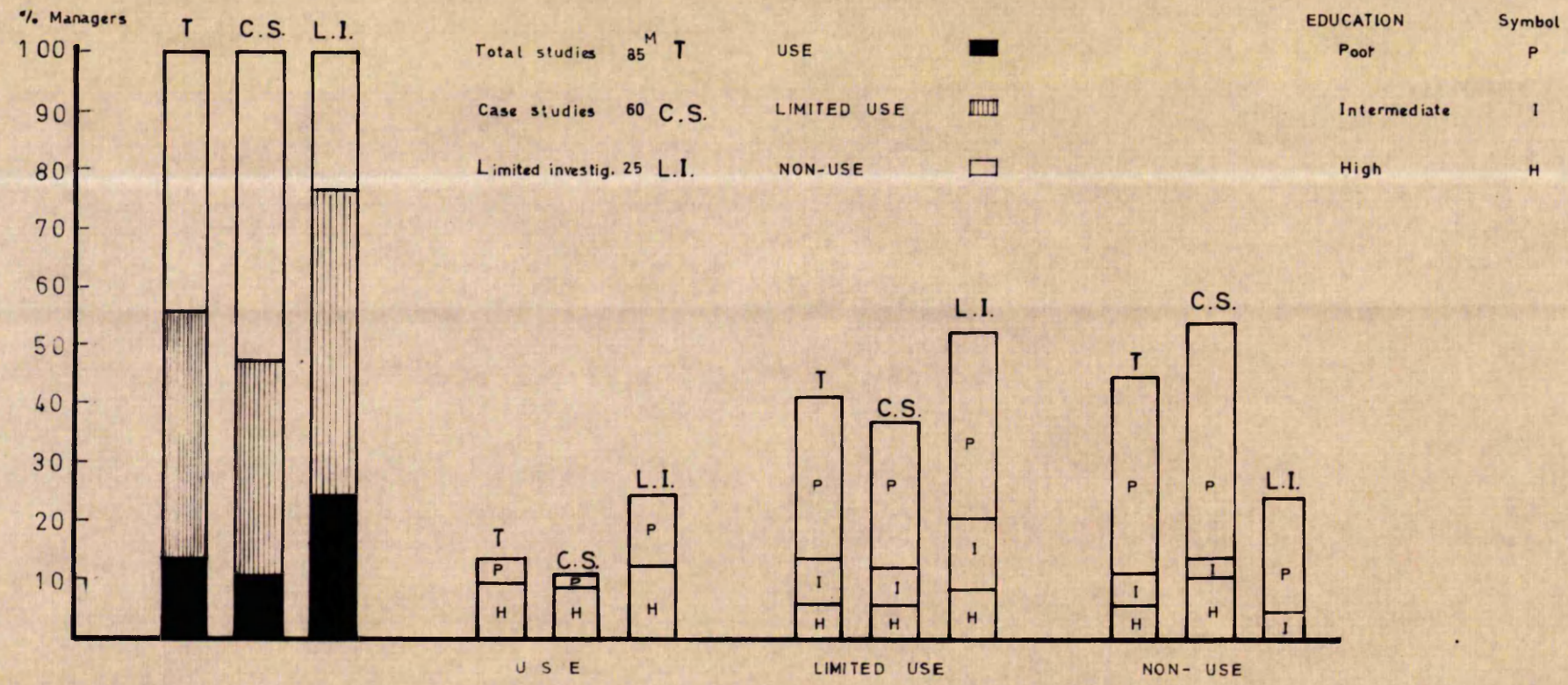


FIG.IX.3. RELATION BETWEEN EDUCATION AND MANAGERS' USE OF BUDGETARY INFORMATION

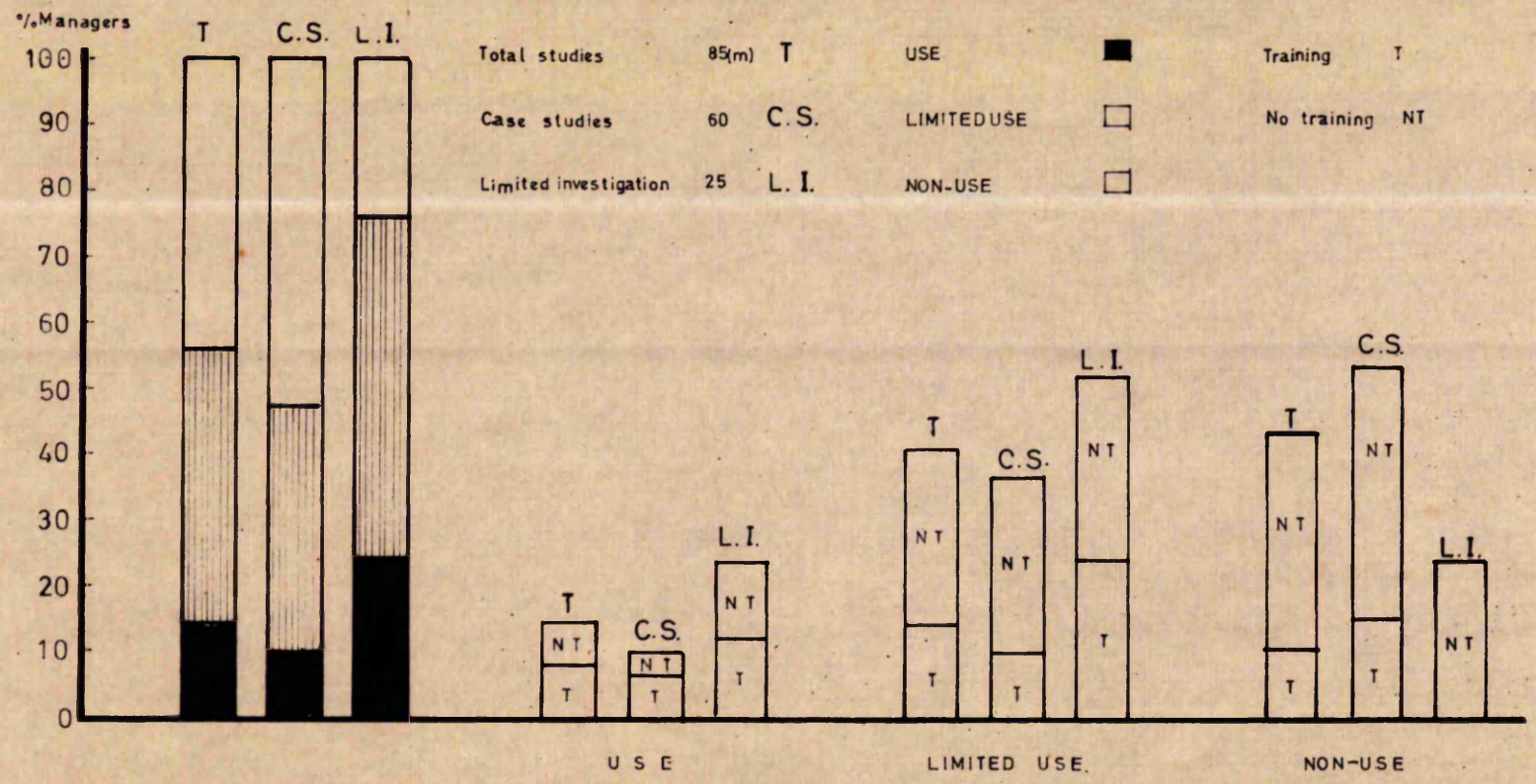


FIG.IX.4. RELATION BETWEEN TRAINING IN BUDGET AND MANAGERS' USE OF BUDGETARY INFORMATION

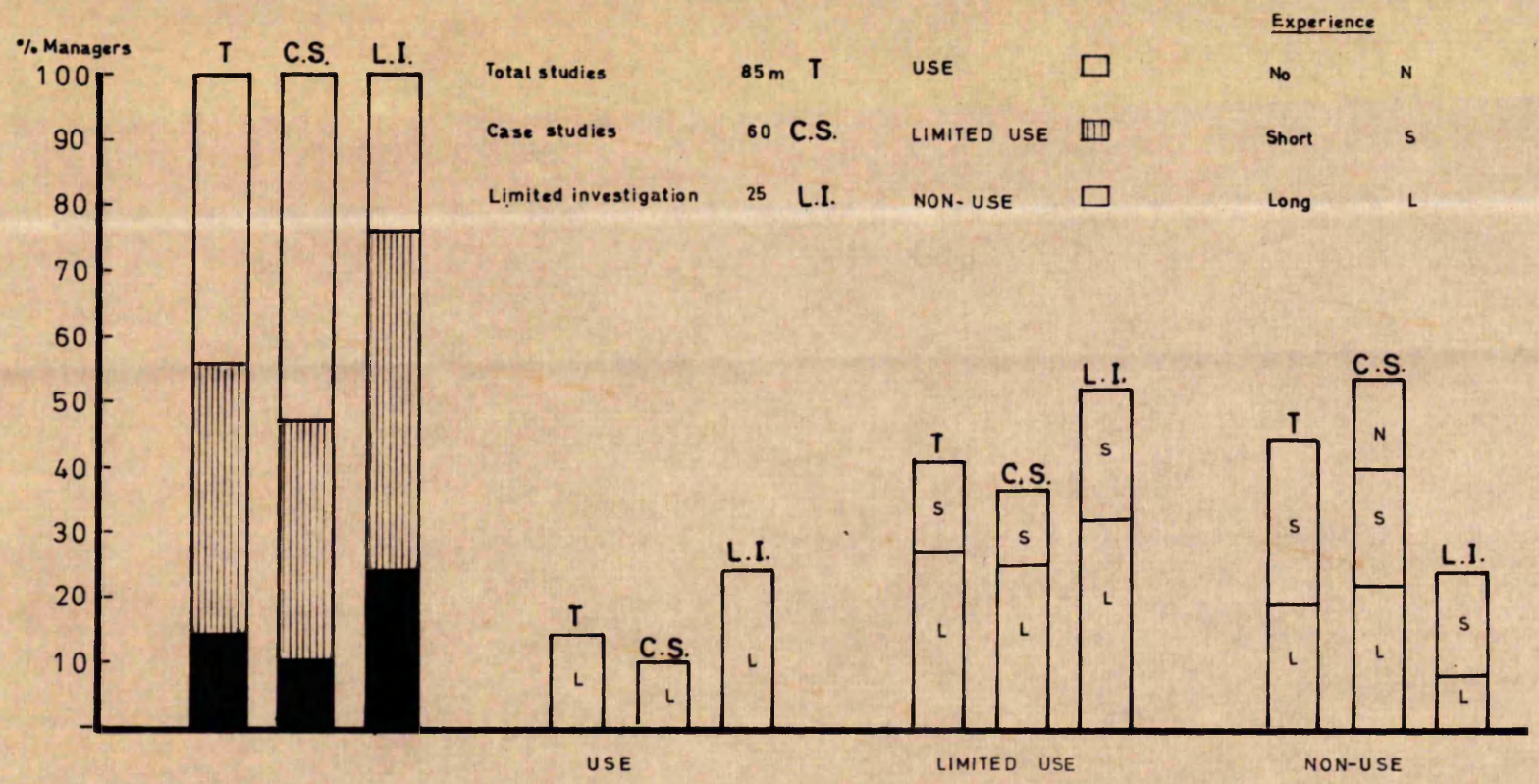


FIG. IX.5. RELATION BETWEEN MANAGERS' EXPERIENCE IN BUDGET AND THEIR USE OF BUDGETARY INFORMATION

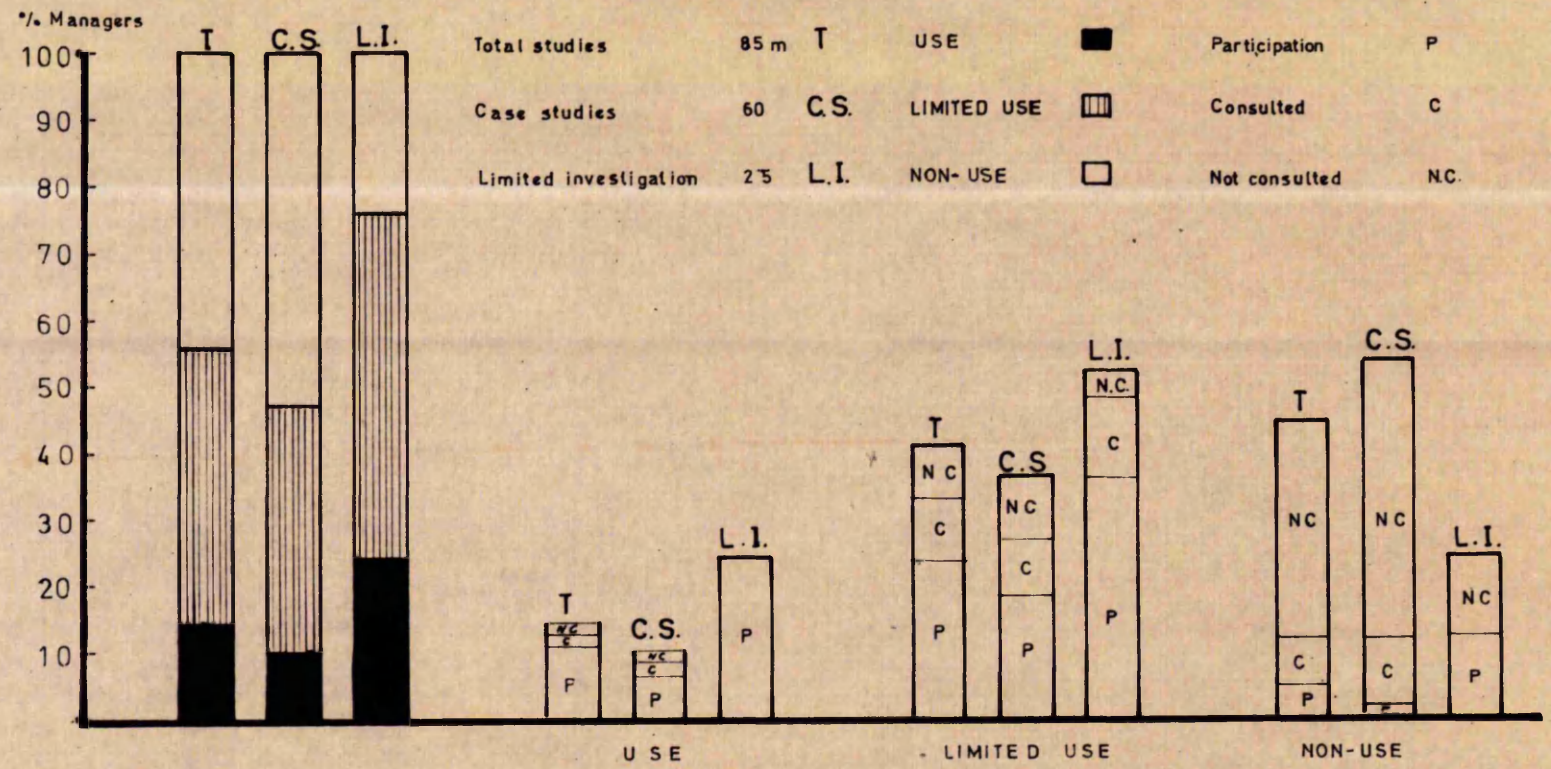


FIG. IX.6. RELATION BETWEEN PARTICPATION AND MANAGERS' USE OF BUDGETARY INFORMATION

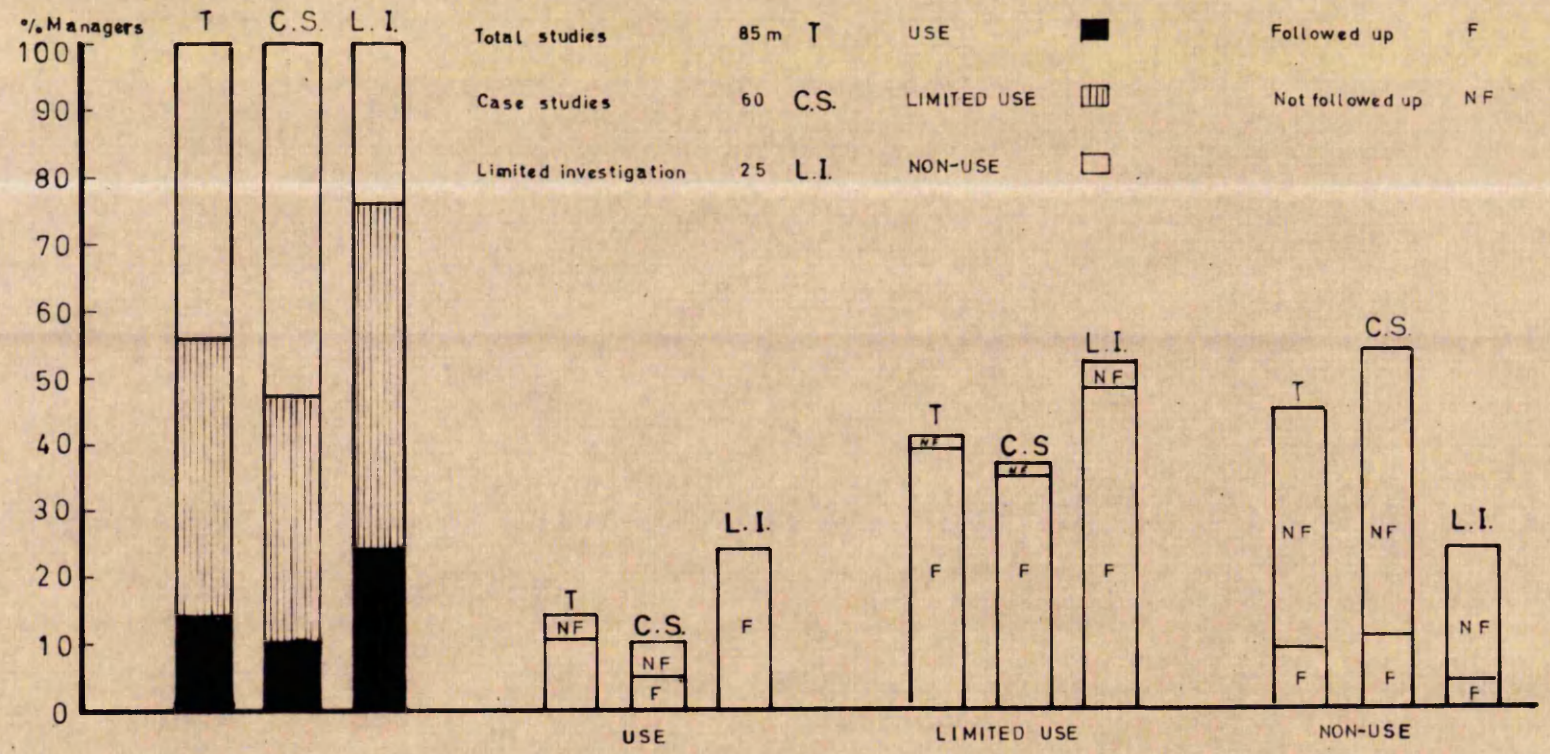


FIG.IX.7. RELATION BETWEEN FOLLOW-UP AND MANAGERS' USE OF BUDGETARY INFORMATION

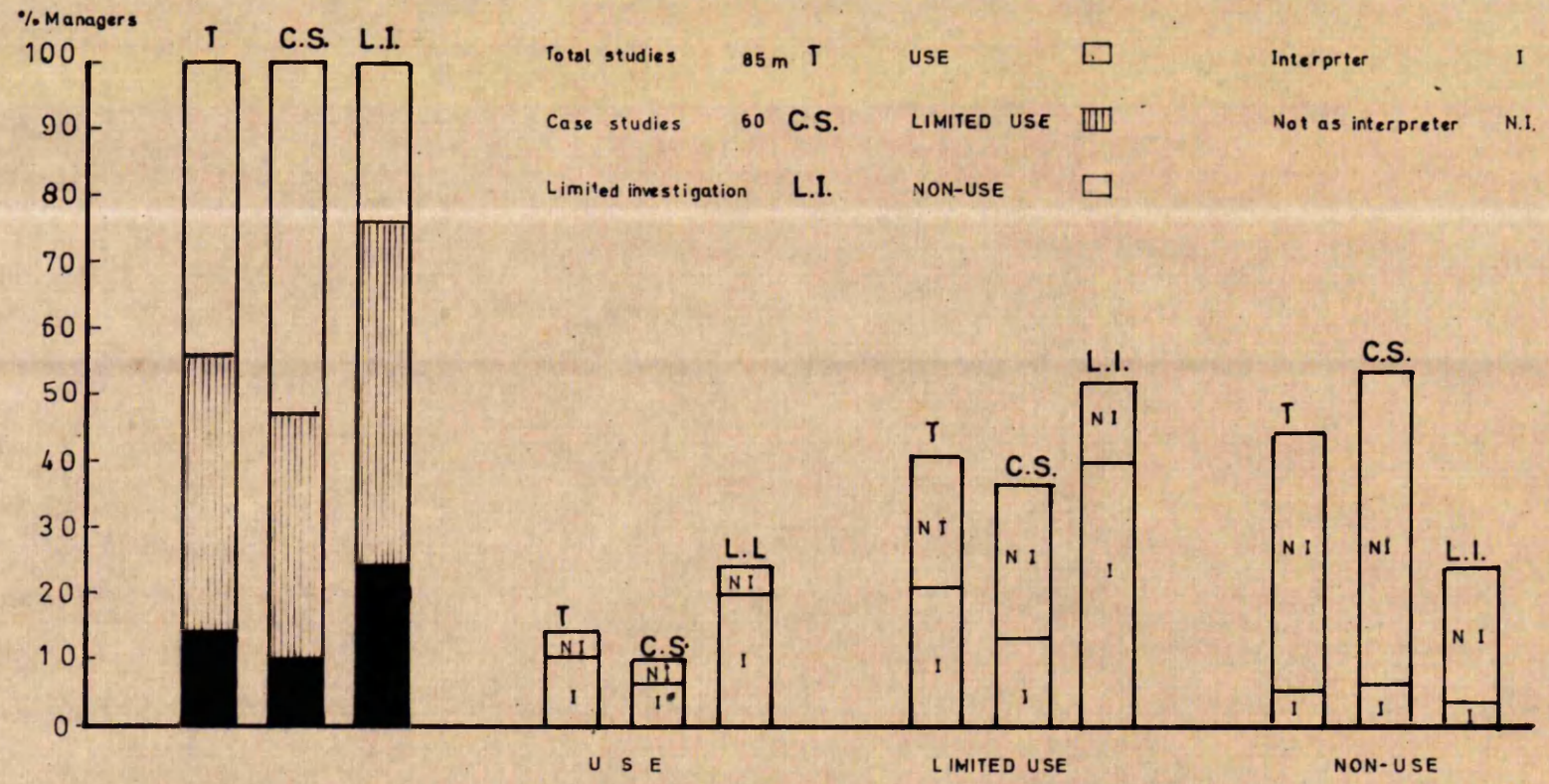


FIG. IX-8 RELATION BETWEEN ACCOUNTANT ROLE AS INTERPRTER AND MANAGERS' USE OF BUDGETARY INFORMATION

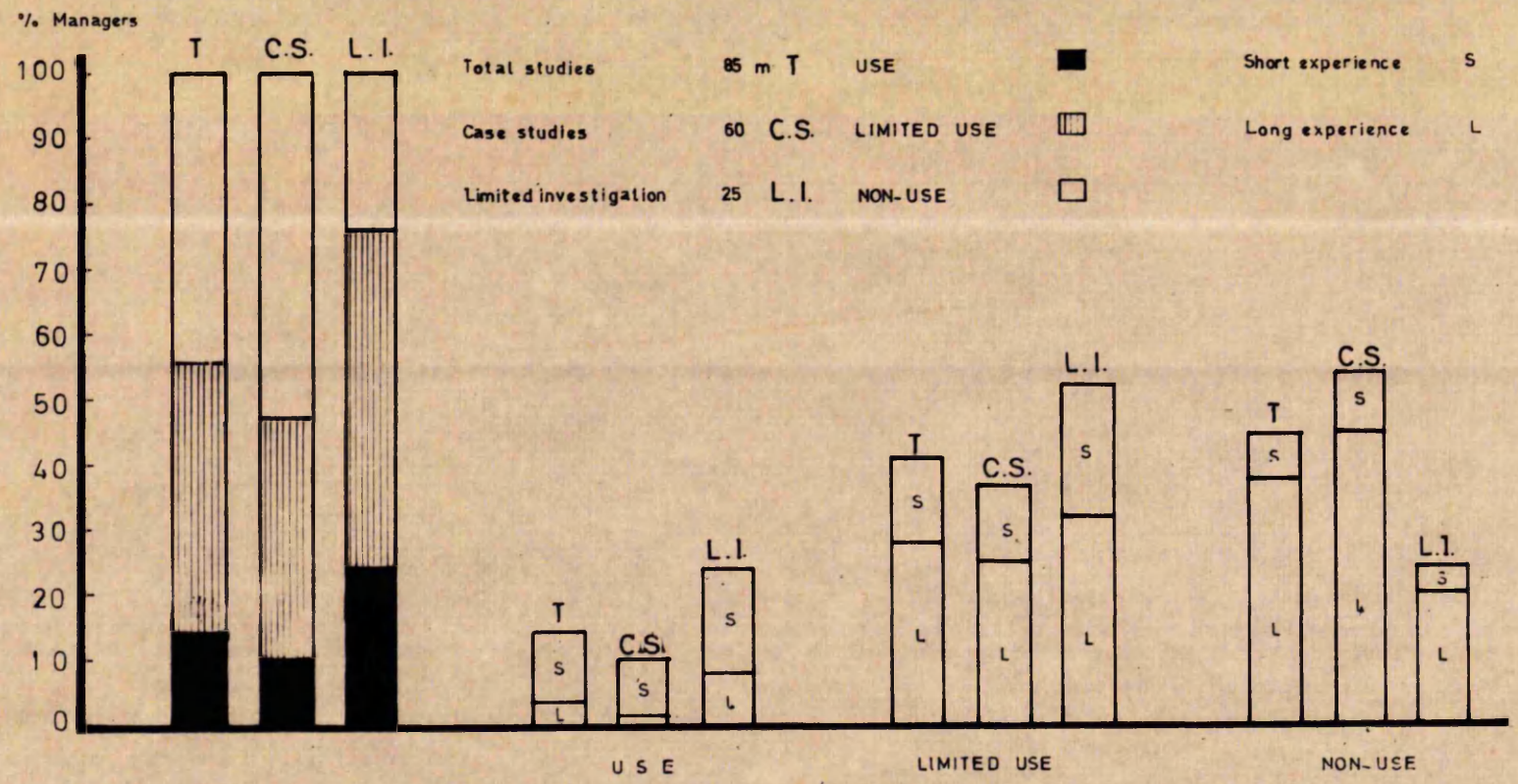


FIG. IX. 9. RELATION BETWEEN MANGERS' EXPERIENCE WITHOUT BUDGET AND THEIR USE OF BUDGETARY INFORMATION

PART THREE

FINDINGS AND CONCLUSIONS OF THE STUDY

The object of this Part is to present the findings and the conclusion of the study.

This is presented as follows :

CHAPTER X CONCLUSION:

Findings Based on Facts

Findings Based on Opinions

Implications of the Findings on the Theory of Budgetary Control

Relationships of the Findings to the Theories of Management.

Future Research

CHAPTER X.

C O N C L U S I O N

Findings Based on Facts :

The findings of this study suggest that managers use their budgetary information mainly as a result of senior management's follow up, or as a result of high degree of appreciation of budgets which in turn is a result of high education, or as a result of both follow up and education.

The findings also suggest that follow up results in a limited use; limited in the sense that managers use only those parts of the information which are followed up by senior management. On the other hand, education results in use being in accordance with the theory.

Moreover, the study suggests that use is not a result of one or two factors; it is a result of the interaction of many factors such as : educational status of the manager, training in budgets, long experience in budgets, participation in budget-setting, senior management's explicit or presumed follow up, accountant's role as an interpreter, and the budget being regarded by the manager concerned as practical, providing the manager concerned has a reasonable degree of control over the items of his budget. Moreover, managers tend to use the most relevant budgets and also those parts of the information which are followed up by their senior manager.

It was also found out that factors which hinder or limit use are: poor education, lack of training in budgets, short experience in budgets, non-consultation in budget-setting, non-follow up, non-provision of the information, non-provision of the interpretation service by the accountant, and having long experience without budgets, Moreover, regarding the information as irrelevant by managers results in its non-use.

Findings Based on Opinions

The study suggests that managers' participation in budget-setting is very important since it improves managers' morale, furthers managers' interest, backing and achievement of the budgets. Moreover, it results in practical budgets.

On the other hand, participation furthers managers' interest in their own departments, and as such furthers their departmental-centredness. However, it does not affect cooperation between managers with the same status, between managers and their foreman, and between managers and the accountant, whereas it improves cooperation between managers and their senior managers.

Moreover, the study suggests that senior managers' follow up helps to communicate shop floor problems and furthers managers' use of their budgetary information. It also has a good effect on managers' morale with reservations of the way of follow up and the extent of budget achievement.

Follow up does not affect cooperation between managers with the same status, between managers and their foremen, and between managers and the accountant. As between managers and their senior managers, it is difficult to deduce the effect from all the factories studied, but on the basis of the four case studies alone, it seems that follow up improves cooperation between managers and their senior managers.

Implications of the Findings on the Theory of Budgetary Control

The findings of this study suggest first of all that the theory of budgetary control is invalid in practice if its main condition, managers' use or otherwise of the budgetary information, is not maintained. Budgetary control is only a means to help management and it is only effective if managers back the system and use the information. This right away puts the stress on management's point of view, a subject which is scarcely touched in the literature.

Second, the study suggests that the two main important factors behind managers' use of the information are education and senior management's follow up. This automatically turns the stress from forms and information, which seems to be the focus of the literature to the more important aspect of how to make budgetary control work in practice. The solution to the problem as suggested by the study lies with managers, and senior managers. Thus, the educational status of managers and the role of senior management in following up managers seem to be of the utmost importance in making budgetary control work.

Third, the study emphasises the role of the accountant as an interpreter. He is no longer a mere producer of figures and information. Moreover, he is not responsible for the achievement of budgets as this is the manager's responsibility, nor is he to follow up managers as this is the senior manager's job. The accountant can be more helpful to the orgnisation if he assumes his responsibilities as an interpreter of the information and the figures to managers. As such, he can help managers greatly in understanding the figures and their implications, thus giving the information he initially produced a greater chance of success.

In this respect, the accountant must be positive on two counts: in interpretating the figures and thus helping managers to a deeper understanding, and in reporting facts. Thus, it is not his job to criticise or to follow up, but to report facts and interpret them.

Moreover, the accountant should provide this interpretation service to both shop floor and senior managers. It is no use helping only senior management to understand the information, which seems to be the practice in most factories studied, since the ones who will ultimately achieve the budget are the managers. Furthermore providing this service to managers as well as senior managers helps to establish a new outlook to the accountant as someone who helps the manager to manage better which may result in a better understanding and better relations between the manager and the accountant; an important area to reduce conflict in the organisation.

Furthermore, the role of the accountant as an interpreter necessitates his understanding of shop floor problems in order to understand and communicate the implications of the figures in a non-technical language.

Fourth, the findings suggest that managers' participation or consultation in budget setting is a supporting factor in manager's use of budgetary information. Moreover, it has favourable psychological effects as it improves manager's morale. This right away suggests that the budget is no longer an accountant's model, i.e. prepared by the accountant with minimum consultation of top management. Thus, managers must get involved in the budgetary process from the very beginning of the planning stage.

Moreover, although the difference between consultation and participation is a difference of extent rather than of kind, there is evidence to suggest that participation results in a deeper understanding of the budget whereas consultation may not as there is the possibility of managers approving of budgets without really understanding their implications. This possibility can hardly arise under participation.

Fifth, the study suggests that only 55% of managers use their budgetary information and that only 14% use it in accordance with the theoretical model of use. Moreover, if the results of the case studies alone are considered the percentages become even less - at 47% - for managers who use the system, and 10% for those who use it in accordance with the theoretical model. This presents two problems; the number of managers who use their budgetary information, and the quality in terms of the extent of such use. However, the remedy of the two problems as suggested by the study may be focused on the factors which hinder or limit use. These are concentrated around education, training, the role of the accountant as an interpreter, non-provision of the information, short experience in budgets and having long experience without budgets.

In all these factors, the last one is the most dangerous since it creates a habit of using experience instead of information, and furthermore an unfavourable attitude against budgets. This is most likely to be found among the older generation of managers. In this case, the accountant's role as an interpreter is very much needed. It must be emphasised, however, that it is difficult to perform such a task in these circumstances.

What should be done to make sure that the manager has a favourable attitude to budgets before he is promoted to be a manager. At this stage, he would be more receptive to training than after he already is a manager. Moreover, managers should either be trained to understand the information or the information should be simplified to suit their background, or both. To consider any of the three alternatives depends on the extent of educational status, training and experience of managers.

Thus, to sum up, in order to further use of budgetary information, the factors which support use must be encouraged and implemented in the system, whereas the factors which hinder use must be eliminated.

Relationship of the Findings to the Theories of Management.

The study suggests that managers use their budgetary information as a result of follow up, high education, or both.

As such these findings support both theory X of the traditional view of direction and control, and theory Y of participation and self control. The two theories are pointed out by Douglas McGregor in his book "The Human Side of Enterprise". (1)

On the face of it the findings seem to confuse the issue as they support two contradictory theories of management control. However, this is not entirely so since the findings support

(1) Douglas McGregor, The Human Side of Enterprise, New York; McGraw-Hill, 1960.

the traditional theory X in terms of number of managers who are using their budgetary information, whereas it supports the new theory Y in terms of the quality of such use. Thus, to put it simply, the findings support theory X in terms of quantity and theory Y in terms of quality of use.

Moreover, if use is taken as that in accordance with the theoretical model, right away the results support the new theory in terms of quantity and quality as well.

Another relationship is that managers, if participate, prepare practical budgets. However, there is evidence to suggest that this depends on a number of factors such as which budgets managers are setting, performance such as sales and production or cost, the personality of the manager concerned and whether he is pessimistic or optimistic, the attitude of senior management and their usual acceptance or refusal of manager's targets, and the seriousness of budget-setting in manager's view, which is affected by his education, his senior manager's attitude and the accountant's attitude. As such the study suggests that this is a difficult problem which may be the basis of further research. This seems to support the suggestion made in another study (1) that it is difficult to conclude the effect of participation on the accuracy of budgets on the basis of accountants' opinions alone, since they seem to be contradictory.

Furthermore, the findings support those of Professor Chris Argyris published in his book "The Impact of Budgets on People" (2) and show that participation furthers manager's interest in his department and his departmental-centredness. However, the findings in this case are based entirely on managers and accountants' views. Moreover, there is evidence to suggest that the personality of the manager and his type of experience has something to do with departmental-centredness. However, this represents another suggestion for a future study.

(1) J.Perrin, op.cit, p.207.

(2) C.Argyris, op.cit, p.22.

Future Research

There seems to be ample room for future research in this field. Many points may be suggested. However, most of these points need the research worker to have a background knowledge of psychology as well as management accounting. These points are suggested to be taken in a programme of case studies in one or a group of factories. One of the most important factors here is the willingness and enthusiasm of the managers concerned to cooperate in the study.

These points are as follows :

1. Managers if participate would prepare practical, loose or tight budgets as a result of many factors; which budgets are managers setting, the personality of the managers concerned and whether they are pessimistic or optimistic, the attitude of top management and their usual acceptance or refusal of manager's targets and the seriousness of budget-setting in manager's view, which is affected by his education, his senior manager's attitude, and the accountant's attitude.

2. The effect of the personality of the manager on the use of budgetary information. Also the personality of the manager, and his type of experience as reasons behind departmental-centredness.

3. How to follow up managers effectively and at the same time keep good relations between managers with the same status and between managers and their senior managers.

4. How to educate managers to use their budgetary information.

5. Is it worthwhile to have a budget officer as a separate function in the accounting organisation, to work as an interpreter to shop floor and top managers?

6. There is evidence to suggest that managers use the relevant budgets more extensively. How to control the less relevant budgets?

7. The time lag in information reporting and whether it is worthwhile to deal with it on the basis of trends of expected performance and variances.

8. How to plan the budget on a statistical and scientific basis. An inquiry in practice as to whether the planning process is a scientific one or is based on a haphazard basis of past experience.

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INDUSTRIAL MANAGERS' ACCEPTANCE AND USE OF BUDGETARY CONTROL TECHNIQUES

AN EMPIRICAL APPROACH

VOLUME II APPENDICES

by

ALI MAHMOUD ABDEL RAHIM

A thesis presented to the University of Manchester
in partial fulfilment of the requirements for the
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JULY, 1966.

This volume presents the details of the evidence and results of the empirical study.

This is presented in seven Appendices as follows :

APPENDIX 'A' presents the Limited Investigations.

'B' presents the Interview Guide Question Lists.

'C' presents the Tabulated Answers of Managers

'D' presents a Detailed Analysis of Managers' Use of Budgetary Information.

'E' presents Relationships Based on Cross-checked Opinions and Facts - Between Managers' Use of Budgetary Information and the Factors which Affect It.

'F' presents the Historical Development of the Management Information System in Factory 'A'.

'G' presents the Sources of Evidence in each of the Factories Studied.

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APPENDIX 'A'

THE LIMITED INVESTIGATIONS

The object of this appendix is to present the background material of the budgetary system in Factories 'E', 'F', 'G' and 'H' of the limited investigations.

Since the object of the limited investigations is to cross-check certain findings of the case studies, the background material is presented with this object in mind. As such they are not presented in the same detail as the case studies.

Each of Factories 'E', 'F', 'G' and 'H' are presented in the same way in three parts; the environmental circumstances, the planning stage and the control stage, with a summary at the end of each case.

Also, the definitions of some of the terms used are presented.

This appendix is divided into five sections :

Section 1: presents the definitions.

Section 2: presents Factory 'E':
- Environmental Circumstances
- The Planning Stage
- The Control Stage
- Summary

Section 3: presents Factory 'F':
- Environmental Circumstances
- The Planning Stage
- The Control Stage
- Summary

Section 4: presents Factory 'G':
- Environmental Circumstances
- The Planning Stage
- The Control Stage
- Summary

Section 5: presents Factory 'H':
- Environmental Circumstances
- The Planning Stage
- The Control Stage
- Summary

SECTION 1: DEFINITIONS

a) Budgeting Systems are classified to three types as follows :

i) Managerial Budgeting System:

If the following two conditions are satisfied :

1. Most senior and shop floor managers participate or are consulted on their budgets,

2. And most senior and shop floor managers receive budgetary information.

ii) Accountant Budgeting System:

If the following two conditions are satisfied:

1. Only the accountant prepares the budget with minimum consultation of top managers,

2. And budgetary information is provided only to top or senior managers.

iii) Semi-Managerial System:

If any of the following two conditions are satisfied :

1. Shop floor managers participate or are consulted on their budgets,

2. Or shop floor managers are provided with budgetary information but are not consulted on their budgets.

b) Budgetary Information - The term denotes any information whether actual or forecasted which is related or compared with the budget, or based thereupon, and is provided to a senior or a shop floor manager

c) A Model is a System.

i) A Theoretical Model is an applied theory of what should have happened in theory when adjusted to suit the problems, circumstances, and objectives of the factory concerned.

ii) An Empirical System presents what actually happened in a factory.

iii) An Evaluation of the Empirical System presents an evaluation of what actually happened in fact, in comparison with what should have happened.

SECTION 2 : FACTORY 'E'

The study in this factory was concentrated on the production department. However, one service manager was interviewed.

The main object of the study in this factory is to cross-check the results of the first four case studies. As such, the environmental circumstances, the planning and control stages, will be presented only as background information to help interpreting the relationships, which are based on managers' opinions and on cross-checked opinions and facts.

A. ENVIRONMENTAL CIRCUMSTANCES

1. This company is a subsidiary to a leading group in the heavy industry. Its main products are diesel engines of different sizes as well as their spare parts.

2. The factory is of large size as it employs 2,000.

3. The factory operates on a large scale in the national and overseas markets. 25% of the factory's sales are allocated to the national market whereas the other 75% represent exports.

4. Sales fluctuate from year to year as each individual sales order has a considerable value, so the loss or gain of one sales order affects the factory's sales greatly. This automatically leads to a great fluctuation in profit from year to year as a result of the fluctuation in sales quantity and mix. The factory's profit can fluctuate greatly from £1 this year, to £5 in the next. However, the annual sales budget is not difficult to forecast as the figure depends mainly on the order book.

5. There are the following levels of management in the factory: directors of whom the managing director is a member of the parent board; senior executives who are under directors but senior to managers such as the chief engineer; the works managers; the plant engineer and the publicity manager; and managers of certain departments who are under the senior executives, however the set up is different for production and service departments; for production, the works is divided to two main departments, each is under a manager who in turn is under the works manager.

   Each manager commands several superintendents with each responsible for some sections, with each section under the control of a foreman. Thus there are five levels of management in production.

   Service departments on the other hand may follow the same pattern of production departments or be different in that they may come under the direction of a director or a senior executive with managers under him who have either foremen or clerks for each section in the department.

6. As to accounts department organisation, this comes under the direction of the financial director who has under him a secretary who is the chief accountant and in turn has under him a cost accountant, a financial accountant and a chief cashier.

7. The industry's cost structure is as follows :

67% material
21% labour
12% overheads

B. THE PLANNING STAGE

1. The system of budgetary control was introduced to the factory ten years ago. It was installed by a firm of management consultants as a result of amalgamation in order to get the factory on the same line with the group.

However, investigation ascertained that the main object of the system is control rather than planning, in order to achieve the budgeted profit through preventing a net overspending, i.e. it does not really matter if overspending in one department is offset by underspending in another department.

2. The systems of budgetary planning operated as follows :

a) The sales estimate is the basis of the operating budget. As mentioned before, the yearly sales forecasting is not difficult as it mainly depends on the order book. The figure is prepared by the sales director, financial director and the chief accountant. A sales figure is forecasted for each of the main sizes of engines, also the percentage of profit on different categories is forecasted on the basis of past history and of the market from representatives, inquiries and orders.

The sales estimate figure is then agreed with top production management.

b) The next step is to prepare the input estimates; these are prepared as follows : materials were taken as a percentage of sales for different engine types on the basis of past experience. The labour estimate was prepared jointly between the superintendent and cost accountant in this way; each superintendent filled the names of indirect labour for actual current personnel and the anticipated changes on a standard form, presented to the assistant works manager for approval and then sent it to the cost accountant to fill in the rates of pay. Through multiplication and addition the indirect labour estimates were arrived at. As to direct labour, this was taken on the basis of scientific standards; as to efficiency and activity indices these were taken on the basis of last year's performance.

As to overheads, these were prepared by the departmental head concerned.

In the works, each superintendent prepared an estimate of his section's expenses, either alone or with the help of the assistant works manager.

The works assistant managers checked, discussed and agreed the estimates with the superintendents. The estimate was then presented to the works manager for approval.

The cost accountant then checks the estimate figures and comments on them.

c) All the estimates are then coordinated and presented to the financial director for approval, who in turn sends it to the subsidiary and parent boards, and if approved the estimate becomes the final budget.

d) At the time of preparation, which is three months before the budget year, the financial director sent letters to all managers to prepare their budgets with possibly an improvement on last year's figures.

e) The accountants maintain that departmental budgetary planning in the works is the responsibility of assistant works managers and not the superintendents or foremen on the assumption that each manager is responsible for more than one section in his department, and therefore is better able to provide relatively more accurate estimates than a superintendent or a foreman who is only responsible for one section and has not got this comparability consciousness, and as such they think that superintendents and foremen participation is of little importance, whereas managers think it is fairly important for superintendents and foremen to participate in budget setting as they are responsible for its achievement.

Thus, to sum up, the budget is prepared partly on past experience and partly on scientific standards and consultation. The lowest level of management who participate are works assistant managers and superintendents. However, shop foremen are neither consulted nor participate in the budget setting process .

This concludes the planning stage. The next step is to present the control stage.

C. THE CONTROL STAGE

At the end of each period, 4 - 5 weeks, the superintendent gets a departmental operating statement whereas the assistant managers gets all the statements for the sections under his control.

For each section; production bay, the statement presents information about direct labour and section's expenses.

The statement is divided into two parts. The first part presents information about direct labour, whereas the second presents information about expenditure.

Direct labour is presented for each cost centre in a production bay. On this first part, the following information is presented: the activity and efficiency actual indices in relation to the budgeted indices, the standard cost, the actual cost and the variance. The variances are then analysed to extra standard allowances, efficiency and labour cost. The cumulative standard cost and the variances are also included in this part. Also, the totals of the figures for the cost centres represent the total direct labour cost for the department.

In theory, the foreman or superintendent concerned could partly influence two figures: the activity and efficiency indices. As such, all the other information are detailed explanations of the effect of the efficiency and activity actual indices.

In theory, the main object of this part is to control labour efficiency and activity. In practice, this information provided should help managers to achieve this object.

The second part of the statement concerns the department's expenses. It presents expenditure separately for each of the main categories. It shows for each expenditure whether it is fixed, variable or controllable. It also presents the normal budget which is the original approved budget figure, the revised budget which is the adjusted figure, the actual cost and the variance. It then analyses the variance

approved by the financial director and notified to the departmental head concerned. On the other hand, revisions which affect the department permanently must be initiated by the departmental head and approved by the financial director.

Thus, the statement provides actual performance figures in comparison with the original and revised budget figures. A logical improvement here is to provide the revised budget figures only and not the original, as once the original has been revised, it has no value for control or comparisons.

The information is presented to the managers two weeks after the period-end, and as such is quick enough. It is also easy to understand and often enough as it is provided on a monthly basis.

The information compares with budget and also indicates the trend; a constructive practice which helps managers to see the extent of the effort needed to achieve their budgets in the next period, quarter, or the rest of the year.

Although the information is useful from the foreman's point of view to control a production bay, it is too detailed as far as the superintendent or the assistant works manager are concerned as they get all the statements concerning the sections under their control. A logical improvement here would be to provide a summary form for all the sections under the control of a superintendent or an assistant manager, with the departmental operating statements as supporting detail. As such, the manager could see the general picture on the principal statement, pick up the worse than budget sections and follow up the foreman concerned.

However, the cost accountant in order to remedy this situation reports exceptionally to the assistant managers on worse than budget performances. At the end of each period, he sends notes concerning overspending to the assistant managers. In fact, these notes are the most used information by managers as a basis to follow up superintendents.

Moreover, although the meeting is not intended to criticise the managers, it works as an implied follow up.

Although it was ascertained that only two meetings were held in eight months, managers agreed that the meeting was useful as an interpretation service.

Although the assistant managers are either highly educated or have long experience, they in fact attended an independent course on management which included budgetary control.

However, it would be more useful to keep the interpretation service provided by the accountants on a regular periodic basis in order to broaden managers' understanding of the information and keep their interest.

This interpretation service is not provided to superintendents or foremen, although they are less educated than managers, as they came through experience rather than high education. Therefore, logically, they need the interpretation service even more than assistant managers.

In fact, they were only given three lectures by the cost accountant on how to understand the information provided in the operating statement. However, they were not given any interpretation service on regular basis by the accountant. The logical improvement here would be to provide them with such a service on a regular periodic basis.

As to senior manager's follow up, it has been ascertained that the system works as follows : as mentioned before, the object of the system is to attain the budgeted profit through exercising managerial control on cost to prevent overspending. Top management follow up stems from this object, for at the end of each period the cost accountant reports significant overspending according to his experience and judgement to the managing and financial directors. The managing or financial director then writes to the senior executives responsible for the overspending. From then on, it is up to the senior executive concerned to follow up his managers, who in turn follow up their superintendent, and so on.

Although this system is claimed to be working very well on the whole, and in fact it is working in one department, it does not work with the senior executive responsible for the works as he in fact has too many responsibilities. In fact, it has been ascertained that his follow up is rare. However, this is partly compensated by the top manager follow up and partly by the accountant's exceptional reporting and interpretation service.

As to use of budgets and information, it has been ascertained that managers only use a limited part of the information which is reported on exceptional basis and is followed up by top management. In fact, the only part of the information used by all managers is consumable stores which represented only one item of the information.

The pattern of use is the more you go down the line, the less the information is used. Foremen do not use the information at all as they were neither consulted, trained, nor given any periodic information. Superintendents make less use of the information than works assistant managers as they are neither well trained nor provided with an interpretation service. In fact, they only use one item as a result of follow up.

Works assistant managers make a fair use of specific items as a result of top management and accountant's follow up.

The senior executive responsible for the works takes a little interest in the information and rarely follows up.

Other senior executives and top managers make a fair use of the budget and information, and take a keen interest in over-spending.

Thus, in theory, the system is designed to control cost in order to achieve the budgeted profit; in fact the system is used, however it is a limited use of specific items followed up in the department studied.

This concludes the control stage, and as such concludes the budgetary process.

SUMMARY

This is a managerial budgetary system as it satisfies the two conditions of participation and provision of information to shop floor and top managers.

However, the lowest level of management who participated are the superintendents. Therefore, the study was concentrated on the superintendents of the works and their senior managers. Foremen were neither consulted nor given any periodic information.

There is a little use of budgets by shop floor managers; however, there is a fair use of specific items in case of follow up overspending. In fact, the only part of the information used by all managers is consumable stores, which represents a very small part of the information. This part was used mainly out of follow up.

The pattern of use, however, is the more you go down the line, the less the information is used, with only followed up information that is used by managers.

The reasons behind managers' use of specific items of their budgetary information are :

1. The favourable attitude of top management, their backing and use of the budget, as indicated by their follow up.

2. Participation of managers in budget setting, however it has a small effect in this case.

3. Accountant's role as an interpreter.

4. Reporting on exceptional basis.

However, the factors which limit managers' use of budgetary information are :

i. Non-follow up of other items.

ii. No training of superintendents and foremen.

Thus, the main relationships which emerge from this case are that follow up results in using those items followed up only and participation alone without follow up does not result in use.

In two cases, managers use their budgets as a result of follow up; in another case as a result of presumed follow up; in two cases they did not use them at all as a result of poor education and long experience without budgets; and lastly in one case the manager concerned used his budget as a result of both follow up and high education.

SECTION 3 : FACTORY 'F'

The study in this factory was concentrated on production departments. The object of the study is to cross check the results of the four case studies. As such, the environmental circumstances, planning and control process will be presented as a background information to the relationships which are either based on managers' opinions or cross checked opinions and facts.

The first step in the analysis is to present the environmental circumstances of the factory.

A. ENVIRONMENTAL CIRCUMSTANCES

1. This factory represents the manufacturing division, and together with the sales division constitutes a subsidiary company. Thus, there is a complete separation of sales and production functions, with each representing a division on its own, with general management coordinating the efforts of the two divisions.

2. The manufacturing division is a small one as it employs 300. It has eight small plants on the site with each producing certain kinds of products. However, the division as a whole produces over 600 different chemical products.

3. Before the present organisation, each plant was considered an autonomous unit in the sense that each plant use to buy its raw materials, employ its labour, and so on.

   Under the present organisation, the eight plants are amalgamated in a manufacturing division under a general manager with centralised services of engineering, development, purchasing and material control, production planning, transport, accounts and personnel.

4. Each plant in the division is under the control of a plant manager; however, in some cases a plant manager may be responsible for more than one plant. Under each plant manager comes the foremen who in turn supervise the workers. However, plant managers are directly responsible to the general manager, who in turn is responsible to the director of the subsidiary board. Thus, there are four levels of management; company's top management, factory top management, factory senior management, plant managers and factory junior management, foremen.

5. The company is an expanding one which has nearly doubled its capital investment in the last five years. (1960 - 1965).

6. The company's market is mostly national, with a small percentage for exports of certain products.

7. The cost structure is as follows: material 70%, labour 10%, and overheads 20%. Thus, material waste is an important element for control.

8. The accountants department is under the chief accountant who has an assistant accountant under him; both are highly qualified. The department is subdivided to cost section, wages and machine accounts.

B. THE PLANNING STAGE

1. The system of budgetary control was introduced to the company in 1961 by management consultants. The system proposed was that of budgetary control and standard costing. However, the system failed to work as a control model for plant managers and was only effective as a means of profit planning and reporting to top management.

2. In 1964, a new general manager was appointed, and as a result the system was developed to work as a control model by a few plant managers. By comparison, the failure of the 1961 system was due to:

a) The then top manager did not back the system.

b) The accountant did not try to sell the idea but to impose it.

c) Communication between the accountant and plant managers was not good enough as the accountant has the image of reporting to top management.

d) Managers did not participate in budget setting or any part of the system, as the then top manager was a strong personality who used to tell everybody what to do, and was not keen on managers' participation.

e) The system was changing very much in a short time which made managers resent the idea of budgetary control, standard costing and variance analysis.

f) The technical language of the accountant and the extensive technical variance analysis used.

g) Managers' fear that the system would give the accountant a bigger authority and encroach on their own.

All these factors together led managers to oppose the system, display their non confidence in the figures, and prove the accountant and his figures to be wrong. Thus, the system actuated managers' relations with the accountant.

3. However, in 1964, a new top manager was appointed. As a result the budgetary system developed a control model by a few plant managers.

Although the top manager prepared the targets himself, the system was partially successful. This was due to :

a) Different personality of top manager.

b) The consultation of plant managers, and although some of them did not like the cost targets on the basis that they were too high, the fact that the top manager explained to them that this is the minimum acceptable to run a profitable organisation resulted in acceptance of targets by managers.

c) The system is a very simple one and avoids what managers hate - extreme variance analysis.

d) The managers concerned devised the weekly information statement with minimum consultation with the accountant.

e) The system avoids direct communication between managers and the accountant as the manager communicates with stock control section, which is under a different manager.

However, the system at present enables a gradual direct communication between managers and the accountant.

f) The new top manager backs the budget and takes a keen interest in it, and aims at a gradual managerial participation.

g) The system did not start in all the plants at the same time. It started in a relatively new plant which produces one product, and runs at a loss. However, relations between the manager concerned and the accountant is not good enough, but the system is improving it.

Moreover, other plant managers get the information from the general manager, technical assistant and not the accountant.

The result is that the system is working in these plants and relations between the managers and the accountants are improving. Furthermore, other plant managers have asked to install the new system in their plants as well.

h) The new system enabled the top manager to get the accountant and the plant managers a step further towards better relations. Before the system there was a complete separation between the accounts department and the plant managers as the old system used to operate in this way: the plant manager reports monthly on technical matters with the accountant quarterly on the financial side. This helped the separation as the manager has produced his own figures, and is trying to defend them against the accountant's. This also helped to deteriorate relations between the accountant and the manager.

The new system avoided this, through letting the manager put in the technical figures, check his usage of material with stock control, comment himself on the plant productivity, and present it to the accountant, who then put the financial figures in and gave the manager a chance to see the figures before the senior manager does.

This enables better communication as the manager then has the chance to discuss the figures with the accountant.

To sum up, the accountant under the new system is seen by managers as providing a service to them, whereas he was seen as a top management's reporter under the old system and as such is working against plant managers.

4. The system is largely a means for top management to plan profitability. However, as mentioned before, it is partly working as a control model in three plants.

All the budgets are prepared by the accountant with minimum consultation with top management. The starting point in budgeting is the sales budget which is prepared by sales managers; each prepares a sales estimate which presents two figures; tones of expected sales at an expected selling price.

The next step is to calculate a budgeted gross margin by the accountant for the main product groups on the basis of past experience and accountant's judgement as to whether the same margins are expected to prevail in the budget year.

Overheads are then taken off the gross margin figure as one total for the company; this results in the budgeted net profits. Overheads are then allocated on an arbitrary basis to the different plants.

Overheads estimates are prepared by the accountant item by item on the basis of last year's figures, his experience and judgement.

Each plant manager is then responsible for two targets: total expenditure target and a direct cost per ton of each product. However, service managers are only responsible for a total expenditure target divided by kind of expense.

In 1965, the general manager in consultation with the accountant prepared the cost targets for the plants working under the new system. Although some managers thought the cost target per ton is low and they cannot achieve it, the general manager insisted that the figure should be accepted temporarily on the basis that it is the maximum acceptable to run a profitable organisation. As a result of this nominal consultation and explanation for the reasons of tight cost targets by the general manager, the managers concerned accepted the target, as by comparison it was the first time they had been consulted by the top manager.

However, one manager accepted the target nominally as he insisted on a higher cost target, but the general manager knowing that the target is tight did not change it. The result is the manager works to his own secret target and treats the original target as a long term objective. The original cost target was £82.4 per ton, whereas the manager was working on £91 per ton as a cost target, as he believes the £82.4 is an impossible target to achieve.

However, as a result of consultation and accepting the target as the maximum acceptable by the company to realise profits, he does not ignore the target completely, but treats it as a long term objective which cannot be achieved in the short run. This supports the hypothesis that non acceptance of targets results in non use of it by managers, that managers work on their own secret targets, and that consultation even if it is nominal works to lessen the degree of avoiding the target altogether, and works for a compromise.

This is true by comparison with another manager in factory D, who was highly educated, but did not use his budget as he was frustrated as the cost budget figures were too tight.

5. In 1965, although the budget preparation started in November 1964, it was not complete until April 1965.

6. If the estimates are approved by the general manager and the subsidiary's board, the estimates then become the approved budget.

Thus, to sum up, the planning process is an accountant model, as the accountant prepared nearly all the budgets in consultation with the general manager.

This concludes the planning stage. The next step is to present the control stage.

C. THE CONTROL STAGE

As the new system is still in a transitional stage, two systems of information work together; the new and old ones.

The new system provides managers (only managers of three plants) with weekly information, whereas the old one provides managers with technical information, monthly, and financial, quarterly.

The weekly form is sub divided into two parts; the first provides technical information about production and the second provides financial information about the cost of production.

The first part presents technical information about actual production and usage of different materials in comparison with budgets, for the week under consideration and cumulatively to date.

This part in one plant is filled by the plant manager himself and is designed by him in consultation with the general manager and the accountant.

The plant manager checks his material usage with the stock control manager and then puts the material usage figures and comments on production and material usage.

This part of the form is then presented to the accountant who puts in the financial information on the second part of the form. This part presents information about the cost of the major material items, the operating expenses, and overheads.

The cost information is given in terms of absolute figures and cost per ton. It compares actual figures with budget for the week and cumulatively to date. The form is often enough as it is given weekly and quickly enough, as it is given three days after the week end. The information is not highly technical and as such is easy to understand.

Theoretically, the manager can control the level of production, materials waste and overspending on operating expenses. He, however, cannot control overheads as they represent arbitrary fixed figures allocated by the accountant so that the manager can appreciate the general picture. In fact, this form is used by managers, however they only use the material cost figure. However, material waste is most important in this factory as materials represent 70% of the cost structure.

This form is the most used by managers. In fact, it is the only form used by managers as they do not use the quarterly information at all.

The monthly form differs from one factory to another; it is a technical form which presents the production and usage of material figures. However, it does not compare with budget. The form is presented by the plant manager himself and is used as the basis of discussion in the monthly meeting between general and plant managers.

At the end of each quarter, a financial statement is prepared by the accountant and presented to the general manager, the assistant general manager, and the plant manager concerned.

The statement presents the actual cost of the different materials used, and expenses for each of the main product groups in each plant.

The statement presents the quantity of materials used, the ratio of materials to pound of product, the cost per unit, and the cost per pound of the product.

However, the information does not compare with budget and does not present the trend figures as it does not show the cumulative figures.

The information is not often enough as it is given quarterly, and is too late as it is presented one month after the quarter-end.

In fact, the information is not used at all by managers. It is only used as a basis of discussion in the monthly meetings, and as mentioned before, it actuates managers' relations with the accountant as the manager tries to defend his figures against the accountant's.

As to interpretations by the accountant, it has been ascertained that no such interpretations by the accountant are carried on at plant managers level. This is done at top management level only. However, plant managers need the interpretations as they have long experience rather than high education. The accountant should also display a keen interest in shop floor problems rather than variance analysis. However, as relations between the accountant and managers are not good enough, this is better left to the assistant accountant.

As to top manager follow up, it has been ascertained that the general manager follows up his plant managers formally through sending notes to praise them or ask for better performance, and informally on the basis of the weekly information through his discussions with managers individually.

As to managers use of the information, it has been ascertained that only managers who get the weekly information use the material usage figures. However, they do not use the quarterly information at all.

Use here is a result of the new top manager's backing, interest, and follow up.

Thus, to conclude, this is a semi-managerial system as it satisfies one condition: providing managers with periodic information. However, foremen are not given any information. Moreover, the system is still in a transitional stage.

This concludes the control stage, and as such concludes the budgetary process.

SUMMARY

This is a semi-managerial system as it satisfies one condition; provision of periodic information to managers. This is a case which stresses the fact that to try to put in a system without consideration of managers' opinions and without securing managers' backing leads to the failure of the system. It also stresses that the personalities of top managers and the accountant and their attitudes are important factors to the success of the system.

Two systems of budgetary control were tried; one failed and the other partly succeeded mainly because in the first the opinions of lower levels of management were not considered and their backing was not secured, and in the second their backing was secured through considering their opinions.

There is evidence to support that non-acceptance of targets by managers make them work to their own secret targets; however, consultation lessens the degree of avoiding the target altogether and works for a compromise.

In fact, a limited number of managers use their output, material and labour budgets only. They do not use their overhead budgets as it is given too late; once each quarter.

The main reasons behind managers' use of budgets and information are :

1. The favourable attitude of the new top manager and his backing and use of the system.

2. Top manager's follow up.

3. The securing of managers' backing through consultation in budget setting and in designing the new information return.

4. Participation of the manager himself in preparing the technical part of the information and in commenting on the results.

5. The communication between the managers and the accountant is not very good (as a result of the failure of the old system). However, the new system was designed to work for indirect communication through stock control section or the technical manager. The result is that relations between the managers and the accountant are improved.

However, the factors which limit use are :

i. poor education and training of managers.

ii. long technical experience without budgets.

Factors behind non-use are :

i. non-follow up.

ii. long technical experience without budgets.

iii. poor education.

iv. information is too late.

Thus, the main relationship which emerges from this case is that managers use their budgetary information as a result of top management's attitude as indicated by follow up. This is true in three cases. In the other three cases managers did not use their budgets as a result of providing too late information on the basis of the old system.

SECTION 4 : FACTORY 'G'

The study in this factory was concentrated on the main production department. The object of the study here is to cross - check the results of the case studies. As such, the environmental circumstances, planning and control stages are presented as background information to the relationships.

A. ENVIRONMENTAL CIRCUMSTANCES

1. The factory is one of the several owned by a subsidiary company which is owned by an international group.

2. The factory is a large one as it employs 2,500. It is engaged in process ing and packing food products; 200 different sizes and varieties in four main product groups. Its main production method is batch production. However, the factory deals with standard products.

3. The factory produces mainly for the national market, which is an expanding one; however, its supplies are brought from different parts of the world. The factory under consideration is most suited to the market geographically.

4. The factory produces directly for stock and not for customers' orders. Thus, the company's sales division deals directly with retail food stores, distributors, chains, hotels and restaurants. Apart from the factory warehouses, different storage in-transit warehouses are also kept.

5. As a result of studying organisation structure in competitive companies, the subsidiary company has recently been reorganised on the product lines basis.

   Thus, the subsidiary's managing director has under him four product general managers; each is responsible for one main product group. The managing director also has under him a director for sales, engineering, transport, purchasing, personnel and manufacture.

   Under the director for manufacture comes a general manager, who has under himself factory managers, one for each factory. Under the factory manager comes a production manager, superintendents, supervisors, foremen and chargehands. Each superintendent is responsible for a production department. Thus, there are three levels of junior management; superintendents, supervisors, and foremen. Under the factory manager comes also the factory controller, personnel, warehousing and purchasing, and medical managers.

Under the factory comptroller comes the costing, wages and raw materials and stock records sections. The costing section is under the cost accountant.

6. The industry's cost structure is as follows: 87% material, 3% direct labour and 10% overheads. Therefore, the most important element to control is material, followed by overheads and direct labour.

Materials are controlled through standard costing, based on scientific standards prepared by work study engineers. Direct labour is also controlled on scientific standards basis, whereas overheads are controlled through responsibility budgeting.

B. THE PLANNING STAGE

1. Budgetary control and standard costing were first introduced to the group in 1948. Before that time the group depended entirely on historical costing. However, it took four years to complete the swing to budgetary control, thus the new system was operating in all parts of the organisation by 1952.

The main reason for introducing the system was to get all the subsidiary companies under better control of the parent board and to unify the system in all parts of the organisation.

The factory under consideration, however, is a new one, which started in 1956. The system of standard costing and budgetary control was applied to the factory since that time.

In 1963, the system developed in the factory to integrate a programme of cost reduction as a result of top management's policy to meet competition.

2. The planning process starts six months before the beginning of the new financial year. The starting point in the budgetary system is the sales budget. This is for the subsidiary company as a whole by top management as follows : each product general manager with the sales director prepares a provisional sales estimate for his main products group on the basis of historical information and market surveys prepared by the market research department.

The sales director is mainly concerned with the volume of sales whereas the product general manager is concerned with this as well as the profitability of his products group.

The figure agreed by the product general manager and the sales director represents the estimated sales figure for each product group.

The product general manager then prepares an estimate of the sales seasonal variation pattern throughout the year on the basis of statistical analysis and according to his experience and judgement. The sales seasonal variation pattern represents a significant problem in the company as its main products are seasonal.

3. The sales estimate is then presented to the production planning department who calculates the production requirements for each variety of product. The inventory at the beginning of the budget year is forecasted and subtracted from the provisional sales estimate, to give the quantity to be manufactured for each variety in each product during the budget year.

4. This quantity of each variety is then integrated in an ideal or theoretical plan for the whole company to produce this quantity at the nearest factory disregarding the physical production capacities of the different factories. Thus, this ideal plan is not practical and is never achieved. It is only an interim step, calculated with the object of minimising distribution cost but does not consider the practical production resources and limitations of each factory.

5. This theoretical plan is then sent to the production scheduling department, who prepares a more realistic fit of the ideal plan to the actual production capacities of each factory. This is then outlined on a provisional line loading chart for each factory, which is a horizontal bar chart for each of the production lines on a monthly basis. The line loading chart takes into consideration maintenance and overhauling. This chart is then sent to the factory three months before the budget.

This chart is then presented to all departmental heads to give them an idea of the level of activity during the budget year.

6. The factory production manager then prepares the direct labour estimate on the basis of scientific standards, past experience and judgement. Materials estimate is estimated at the subsidiary's head office on the basis of scientific standards, maintenance cost is estimated separately and then allocated to the departments by the cost accountant.

As to overheads, each superintendent prepares his departmental expenses estimate on the basis of last year's figures, experience and judgement. The estimates are then presented to the senior manager for approval.

The cost accountant then discusses overhead estimates with each superintendent. He checks the figures on the basis of the trend of last twelve months. If the estimated figure is over the trend, the accountant discusses it with the superintendent concerned and he is either given a reason or not. In any case, the practice is that if they do not agree to a figure, the superintendent's figure stands and not the accountant's.

However, such a figure is usually put in a different ink colour and is temporarily accepted.

7. The factory comptroller then coordinates all the overhead statements for the factory. The consolidated overhead estimate as well as the direct labour estimate are then fed to the manufacturing department at head office who present it to the company's top management, who usually send it back to knock out so much as a result of the cost reduction programme.

The factory production manager may then knock out a certain percentage of indirect labour estimate. The factory accountant starts reducing the overhead estimates according to the objective given by top management by first looking at the figures which he accepted temporarily.

This is then sent to the company's managing director who, if satisfied, presents it to the local and parent boards. If the estimate is approved then it comes back to the factory as the approved annual budget.

The factory comptroller and his staff then break down the annual figures to monthly figures on the basis of the number of working days, send the approved budgets to the superintendents concerned, and explain to them that the highest level of management in the organisation, the parent board, implemented the reductions because of keener competition or any other prevailing circumstances.

At this stage, superintendents cannot reject the budget. They do, in fact, accept it and they are quite content as long as the extent of the reduction is not unreasonable and the reasons for the reductions are explained to them.

The fact that the accountant does not implement the reductions right away and waits until top management orders them, is a very good part in the system from control point of view, for the following reasons :

(i) The acceptance of the superintendent's figures by the accountant in the first instance, is an acknowledgement by the accountant that the manager is a responsible budget-setter, and the image of the accountant as the one who knows is not felt by the manager. This helps to narrow the gap between managers and the accountant as unlike factories B and F the manager does not feel that the accountant is not senior to him.

(ii) The fact that the superintendent knows that top managers in the organisation want him to reduce cost in this way not because his figures are not acceptable, but to help the company to stand against its competitors is an acknowledgement by top management of the superintendent's importance, and is a kind of personal touch between top levels of management and the superintendent as he feels that top management wants him to participate in achieving the goals of the company.

(iii) The reasons for the reduction are explained to superintendents so that in turn they can explain them to the foremen and supervisors, and as such they know and are not in the dark.

It is on the basis of all these factors together that managers do in fact accept their budgets; an important step towards achieving it.

8. Furthermore, the company prepares a five year long term capital and revenue budget.

Thus, to sum up, the budget is prepared partly on statistical analysis, market research and scientific standards, and partly on participation, past experience and judgement. The lowest level of management who participate in budget setting is the departmental superintendents. However, shop supervisors and foremen are neither consulted nor participate in budget setting.

This concludes the planning stage. The next step is to present the control stage.

C. THE CONTROL STAGE

At the end of each month, the superintendent gets an overhead cost statement whereas the senior manager gets a manufacturing cost statement for the factory, which is distributed to a limited number of senior managers in the factory, and a copy of the departmental statements under his control.

The overheads statement is divided into four parts for materials, direct labour, overheads and maintenance.

The first part presents the actual cost of raw, processed and packaging material separately for the month under consideration, and cumulatively for the months to date.

The second part presents the direct labour cost for the month and cumulatively to date.

The third part of the statement presents the overheads; expenses under the superintendent's control sub divided to the main items. It presents the actual expense for each item and the variance for the month and cumulatively to date.

The last part of the statement presents maintenance, expenses not under the superintendent's control as they are allocations by the cost accountant. However, it has been ascertained that the form only presents the cumulative figures and not the figures for the month concerned. As such, unless a comparison between the different monthly statements is draw, the superintendent cannot tell whether he has done well or not on a certain month. A logical improvement here would be to include the monthly actual and variance figures.

The main object of the statement is to control cost and prevent over-spending. In theory as well as in practice, the statement achieves its object.

The statement is easy to understand. It does not give too much detail. It does not give the budget figures, however these are given to the superintendents before the budget year. Moreover, the statement compares actual performance with budget, but only presents the variance figures, which although gives the same meaning with minimum information.

The statement is presented monthly to the superintendent and as such is often enough. It is also quick enough as it is presented three weeks after the event.

In sum, apart from excluding the monthly figures, the statement does achieve its object.

Senior managers on the other hand get the factory manufacturing cost statement with the departmental overhead statements as supporting details.

The manufacturing cost statement is subdivided to six parts about material, direct labour, overheads, maintenance, uncontrollable variance and production.

The first part presents raw, processed and packaging materials for the month in terms of budgeted figures, actual and variance.

The second part of the statement presents the budgeted, actual and variance of the direct labour cost.

The third part presents the overheads; expenses under the control of superintendents in terms of budgeted, actual and variance figures. The fourth part then presents the maintenance cost which is controlled by the works engineer in terms of budgeted actual and variance figures.

In all the four parts, the statement presents the percentage of the variance to the budget, which is useful in evaluating actual performance and the accuracy of the budget, and an analysis of the variance to its three constituent parts of volume, rates and spending.

The fifth part of the form presents the uncontrollable items such as depreciation. The grand total of the five parts gives the total manufacturing cost.

The final part of the form presents budget, actual and variance for production in terms of tons, thousand dozens and thousand pounds sterling net sales value. It also presents the overheads budgeted and actual cost per ton, per thousand dozen and as a percentage of net sales value.

The main object of the form is to give the whole picture of the factory's performance and to pinpoint the problem areas which can be followed up on the detailed departmental statements as a basis to follow up the manager concerned.

Although the form achieves its object, to a great extent, one main criticism is it does not present cumulative figures, and as such does not show the trend; this however is the most constructive piece of information for control, as through comparison with budget it shows the extent of effort needed to achieve the budget by the end of the year, and as such it gives information about the future and cannot be criticised as historical facts which nobody can do anything about. This is even more needed at senior management level in order to facilitate follow up and to draw or adjust its future policies.

As to accountant's interpretation, this is done in three monthly meetings; the first is for senior managers and the factory comptroller, the second is for production superintendents and the factory cost accountant, and the third is for service managers with the cost accountant.

At these meetings either the factory comptroller or cost accountant presents the monthly figures and discusses them with managers. The accountant then asks the department's representative in the mee ting to report back as to the reasons for certain items. Thus, the meeting with departmental managers implies two kinds of follow up; a general one with a training effect, and a specific one like that of senior management.

The meeting is held three days after the managers get the information in order to give them time to see the information and discuss it with their foremen.

The main criticisms of the meeting are : first the manager who attends it is the department's representative and not necessarily the superintendent; second managers criticised the meetings as they discussed other departments as well; this may be regarded as evidence for departmental-centredness; and third, senior manager criticised the departmental meeting as the accountant follows up specific items which he prefers to go through the normal channels - through senior manager.

Thus, the meeting implies interpretation as well as follow up. Unlike the theory accountants should only interpret and not follow up. The logical improvement here is to drop accountant's follow up practice and maintain his role as an interpreter.

As to senior manager's follow up, it has been ascertained that follow up is done regularly in an informal way, before the meeting with the accountant.

As to revision of budgets, this is done exceptionally if recent information or circumstances so warrant.

As to use of budgets and information, it has been ascertained that all managers interviewed use their budgets as well as their information. They use their budgets in the sense that they all try to save on their budgets in the first months of the budget year. They also act on the information to make sure that they are within the budget and to follow up reasons on specific variances with foremen in order to satisfy the accountant and senior manager.

Also, their use stems from the factory's responsibility to spending as according to top management's policy, the volume of production and prices and rates are the responsibility of the company's top managers and not the factory's. The only responsibility allocated to the factory is overspending.

One striking feature about use is that all managers interviewed use their budgets in the same way which suggests that their use is due to the system. Another striking feature is that although superintendents come through experience rather than high education, they use their budgets and information which supports that this is again due to the system.

Finally, although expenses and cost are less relevant to the superintendent than other features, the budgets are used extensively. However, this is again due to the system as superintendents are only responsible for spending variances, and as such their responsibility is confined to one budget.

Thus, to conclude, this is a managerial budgeting system, as it satisfies the two conditions of :

a) participation of shop floor managers, superintendents in budget setting, and

b) provision of periodic information to them.

Furthermore, in theory it is intended to control the factory's cost and in practice it works effectively to achieve its purpose. In 1965, for example, the budgets were prepared on the same lines as 1964 actual figures. They were then cut by top management by 5%. However, they were not just achieved, but also with a saving between 1 - 2% on the cut budgets.

In sum, this is a highly developed system of control as it works in theory and in practice.

This concludes the control stage, and as such concludes the budgetary process .

SUMMARY

This is a managerial budgeting system as it satisfies the two conditions of participation and provision of information to shop floor and top managers.

However, the lowest levels of management who participated are the superintendents. Therefore, the study was concentrated on the superintendents in one department and their senior manager. Although in fact, superintendents are not the lowest level in the organisation - there are two other levels of supervisors and foremen. However, they are the lowest level in the organisation who participate in budget-setting and are directly responsible for over-spending. All superintendents interviewed used their overhead budgetary information as this was their only responsibility as far as the budgetary system is concerned.

However, they do not use their labour budgets at all, although they prepared them through filling in the form provided by the accountant, a description of labour, rates and overtime. However, they are not followed up on them and this budget is not considered as the superintendents responsibility, rather that of the factory manager. As to direct labour and materials budgets, these are based on scientific standards prepared by the methods engineer. However, all lower levels of management down to the chargehands were consulted in the direct labour standards.

Moreover, they do not use the maintenance budget as it is out of their control.

The factory has integrated a programme of cost reduction in the budgetary system, and this has been very successful as although budgets which were prepared by the superintendents were cut and considered by the accountant as a tight budget, savings of about 1 - 2% have been realised even on the cut budget.

The reasons behind managers' use of their budgets are :

1. The favourable attitude of top management, their backing and use of the budget as indicated by their follow up.

2. Participation which results in managers' acceptance of the targets even after they are cut.

3. Follow up by the accountant and his role as an interpreter.

4. The high degree of appreciation of the system as a result of top management's attitude and the way it is communicated to superintendents. For although top managers follow up, they do not do that to blame managers for deviations, but rather to achieve the original object integrated in the budget and accepted by top and shop floor managers.

Thus, the main relationship which emerges from this case is establishing a high degree of appreciation of budgets in three cases as a result of follow up, as an indication of top management's attitude and in one as a result of both high education and follow up.

SECTION 5 : FACTORY 'H'

The study in this factory was carried on in two stages; the first was a general one about the factory, and the second a concentrated study on one feeder department. Mainly, the concentrated study is the one presented, with reference to general study occasionally.

The object of the study is to cross-check the results of the case studies, as such the environmental circumstances, and planning and control stages are presented as background information to the relationships.

A. ENVIRONMENTAL CIRCUMSTANCES

1. This is one of the largest factories in the electrical engineering industry as it employs nearly 20,000. The factory produces three main products: switchgear, transformers, and turbine generators.

2. As a result of the associations of several companies, a reorganisation scheme took place to prevent overlapping of producing the same product under different sets of management.

   This resulted in three different groups: power, industrial and electronics. The power group is responsible for the main products of this factory. The group was divided into three main divisions each of which is responsible for one product.

3. The whole group is under a group general manager who has three divisional general managers working under him, each responsible for a certain product. The group general manager also gets expert advice from directors of manufacture, engineering and commercial, and the comptroller.

4. Under the divisional general manager, there are two different sets of organisation, either functional or product. The aim of the group is to switch to the product organisation in all its parts.

5. The other levels of management are superintendent and foremen. Each superintendent is responsible for a department.

6. Reorganisation also took place in the accounts department. In the past there was only one comptroller with a chief cost accountant and a chief financial accountant. Thus, accounting service was centralised for the whole factory. At present, apart from the centralised comptrollers' department who advise the group general managers, there are another three comptrollers' departments: one for each product division. Each of them still has a comptroller, a chief cost accountant, and a chief financial accountant.

Thus, the accounting set up was decentralised to give the divisions more service than the old centralised set-up. However, the present form or organisation is more experienced as it employs more accountants.

7. The main departments are selling, accounts, manufacturing, feeder and research and engineering.

The main manufacturing departments produce for customers, whereas the feeder departments produce to the other manufacturing departments, and as such provide a service to them.

For example, a large manufacturing department gets orders from sales department, gets designs and other relevant information from the engineering department, calls for advice from services department, gets information from comptroller's department, places orders on feeders departments, and outside suppliers, and delivers a complete product to customer through transport department.

8. Orders are obtained through the submission of tenders on past experience and figures as the factory is not operating on standard costing or scientific standards.

9. Two-thirds of the factory's products are for the home market, and one-third is for export.

10. There are a few producers in the home market who share the market equally.

B. THE PLANNING STAGE

1. Budgetary control was first introduced to the factory twenty years ago. As mentioned before, the factory does not use standard costing; as each order is different there are a lot of variations in the production departments and there are no standard products; however, there are standard processes.

The object of introducing the system of budgetary control was to control the cost so that the estimated profit is achieved.

As mentioned before, orders are obtained through the submission of tenders, estimates of the cost of the job plus an estimate of a reasonable profit. Controlling the cost through budgets would help to achieve the estimated profit.

2. The system of budgetary planning works as follows :

a) All departments in each group have targets. These are normally set by the functional departmental heads concerned.

b) The sales and output estimates are prepared at the same time by different managers; the sales budget is prepared by the sales manager in consultation with the commercial manager whereas the output estimate is prepared by the superintendent. The superintendent may revise the sales estimate when he gets the sales estimate. Sales forecasting is much easier here, as orders take a long time to be produced, usually in the order of years.

The factory expense estimate is divided into three kinds of expenses on the basis of responsibility; class A expense is to estimate all future expenses which are under the control of shop foremen, whereas class B is under the superintendent's, and class C represents uncontrollable items which represent a percentage charge laid down by the cost department. The theory goes that the shop foremen should prepare his class A expenses estimate and submit them to his superintendent for approval. However, in fact what actually happens is that the expenses are prepared by the departmental cost investigator or statistician who consults the foremen on their estimates.

Other output estimates such as direct labour and material are prepared by the superintendent.

The chief engineer prepares the engineering estimate on the basis of the production estimate, whereas the departmental manager concerned prepares the commercial administration estimate. Each manager then sends his estimate to his superior manager for approval.

c) The departmental estimates are then collated and coordinated by the accountant to produce the divisional estimate. These are similarly treated to set a group estimate which in turn contributes to the company's estimate. If the estimate is approved by all levels, from the superintendents upwards, until the board level, the estimate then becomes the approved budget.

d) For the feeder department under study, the following budgets have been prepared; an output, input and factory expense budget. All the budgets are prepared on standard forms.

e) The output estimate included the following : the annual potential output distinguishing between output to customers and output to other departments. As this is a feeder department which produces to other departments rather than to outside customers, the superintendent consults the other customer departments about the expected level of output and on the basis of this information together with past figures, he estimates the output figures. As a matter of fact, the output for the 1966 budget was taken as an approximation figure of the probable figures for 1965.

As they start budgeting in September, the 1965 probable figure represents the actual figure up to August plus an estimate for the last four months of the year.

Moreover, the superintendent forecasts the number of his employees on the basis of last year's figure as adjusted to suit the estimated production figure according to the superintendent's judgement.

The superintendent also estimates the covered floor space for manufacturing and for manufacturing offices; this is usually taken as last year.

The last figure on the budget form is the estimated value for output to the warehouse and to the other departments which were taken as an approximation of the probable figures of 1965.

This concludes the output estimates. Thus, the estimate is mainly prepared by the superintendent on the basis of consultation of customer departments, last year's figures, and his judgement.

f) The input estimate included the following: direct labour, receipts from other departments, productive purchases to be ordered, productive purchases to be received, a summary of factory expenses, Class A, B and C work in progress at the budget year end, and finished products. It also included an estimation of total productive hours and overtime.

All the figures were prepared by the department statistician on the basis of last year's figures plus a small percentage of 3% to represent the trend. In fact most of the figures of the 1966 budget were an approximation of the 1965 probable figure (a little bit over the 1965 probable figure).

As to class A factory expenses, these were prepared by the statistician and were presented to the different foremen for their comments.

All the forecasted figures of 1966 are compared with the actual figure of 1964 and the probable figure for 1965.

All these estimates were then presented to the department's superintendent for his approval, who adjusted a few figures and then presented the estimates to the senior manager, divisional manager of manufacturing services division, who commented on the budgets. In fact, he commented on two figures being much higher than the 1965 probable figures.

The estimates were then sent to the comptroller by the end of October, sent to the works manager, and the director of manufacture.

The comptroller then edited the forecasted figures using the 1964 and 1965 probable figures as comparison, investigated senior management comments, recommended certain adjustments, coordinated the divisional estimates and presented them to top management for approval. Top management then implemented certain adjustments and approved the estimates.

Then the approved estimates become the 1966 approved budgets.

Thus, to sum up, the input budget is prepared by the department statistician, in consultation with the foremen and approval of the superintendent. The superintendent is the lowest level of management who participates in budget setting. The consultation of foremen is rather of nominal and psychological values. Furthermore, the basis of the budget is last year's figure with a small percentage as a trend increment.

This concludes the planning stage. The next step in the analysis is to present the control stage.

C. THE CONTROL STAGE

The comptroller's department provides the superintendent with monthly and quarterly information about output, direct materials, labour and overheads, whereas the foreman gets the information once a month regarding class A expenses; expenses under his control.

The information is provided in the same form as that of the budget, which facilitates budget compilation and the understanding of the information. The information compares last year's average week with the budget, and the actual with budget cumulatively to date. It also presents the actual performance figures of the month. However, it doesnot compare monthly actual figures with the budget. Alternatively, however, it compares actual with average week of the budget and of last year. A logical improvement here would be to dispense with last year's average week altogether as the budget is a sophisticated value of last year's figures, and to have instead the monthly budget in order to facilitate comparisons on monthly and cumulatively basis.

Another comparison is the percentage of the expense to direct labour of the average weekly budget and last year, for the actual month and cumulatively for the budget and actual performance.

Separate forms are provided to report expenses under the foreman's responsibility, under the superintendent's, and those uncontrollable by both which represent the cost of service departments as arbitrarily allocated by the cost accountant.

Another criticism of the form is that it gives too much detailed information which complicates the use of the form.

The information is provided to the superintendent seven weeks after the event and as such is too late.

Moreover, there is no formal or informal system of interpretations provided by the accountant to the superintendent or the foremen.

However, the need of the foremen for interpretation is greater than that of the superintendent. Foremen's background is experience, whereas superintendents' is either high education or experience. However, the chance of becoming a superintendent by experience is remote. There is a company training course for superintendents and foremen; however, it has been ascertained that the initial training does not include budgetary control.

Budgetary control is included only for senior staff and taught to an elementary level by the company's accountants and outside consultants.

As to accountant's follow up, there is no formal system for superintendents and foremen. For superintendents a weekly meeting is held under the chairmanship of the director of manufacture, where a representative of the comptroller's department attends. The cost accountant does not attend these meetings at all. Explanations of the accounts are practised informally, i.e. the superintendent asks the comptroller's department to explain certain figures. Thus, there is no follow up by the accountant as an interpreter for superintendents or foremen.

However, superintendents are followed up on the basis of the monthly information by the top manager formally in a meeting. Foremen are also followed up formally in a monthly meeting held under the chairmanship of the superintendent, and attended by the cost investigator.

As to use of budgets and information, it is practised in this way: the cost investigator, before the meeting, examines the monthly information and picks up the significant worse than budget performance on the basis of his experience, investigates the reasons and reports them to the superintendent in the meeting who discusses it with the foremen and asks them either to watch their expenses in the future or to ask for a detailed cost investigation.

Foremen also may ask for cost investigations as a result of their superintendent's follow up.

Thus, in fact, neither superintendents nor foremen use their budgets: they only use the information in order to satisfy senior manager's enquiries or follow up.

To conclude, in theory although the system is designed to control cost in order to achieve the estimated profit, in practice only the information is used as a basis for cost investigation: a rather limited use for control.

This part has examined the control process and as such concludes the budgetary process.

SUMMARY

This is a managerial budgeting system as it satisfies the two conditions of participation and provision of information to shop floor and top managers. This is the only factory in the group studied in which foremen are consulted on their budgetary targets and are provided with periodic information. However, being the largest factory in the group studied, a foreman is quite an important figure in the organisation.

However, use of budgetary information is very limited in two respects: the first is that managers are only responsible for one budget; overheads; and second they only use the items followed up by their senior manager in a very limited sense.

In fact, only one manager uses his budgetary information as a result of high education and follow up, with seven managers using their budgets in a very limited sense as a result of follow up, and one does not use it at all as a result of non-follow up and a small degree of controllable items.

Thus, the reasons for use are :

1. Follow up of top management.

2. Consultation of managers.

3. The role of the cost investigator as an interpreter.

However, factors which limit use are :

1. Long experience without budgets.

2. Poor education and lack of training in budgets.

3. Limited degree of control.

Therefore, the main relationship here is that <u>managers use their budgetary information as a result of follow up, however follow up results only in a very limited use</u>; out of nine managers, eight used their budgetary information; one as a result of high education, and seven as a result of follow up. However, their use was limited to those parts of the information which is followed up, and finally one manager did not use it as a result of non-follow up and a limited degree of control.

APPENDIX 'B'

This appendix contains the texts of interview guide question lists. These are presented as follows :

Exhibit 1 : Managers' interview questions.
Exhibit 2 : Senior managers' interview questions.
Exhibit 3 : Accountants' interview questions.

The object of the manager's interview questions is to obtain facts and opinions about what actually happened in the year under study, whereas the object of the accountant's and the senior manager's interview questions is to cross-check the information obtained from the manager's interview.

The questions used are specific since they concern the budget for which the manager is responsible. In fact, the research worker used to have a copy of the budget or the departmental information return in the interview so that discussions are related to this particular budget and do not tend to be general and vague.

Wherever possible, the manager was presented with a set of alternative answers so that he can choose which answer he thinks fits the question. Moreover, in these questions, the word "others" was used so that the manager may give any other answer he may think fit which is not included in the set of alternatives provided.

The theme of the questions is to ask the manager, the senior manager and the accountant about what actually happened and what do they think of how it happened. Thus, the interviews provide information about facts and opinions.

As to responses concerning facts, these are used to establish the facts of each control system which has already been included in the text. These are also used to establish whether each manager uses his budgetary information or not. The results of this are included in the text whereas the details are included in Appendix 'D'.

As to responses concerning opinions, these are tabulated in Appendic 'C'. Moreover, the number of the respective Appendix 'C' tables appears (in parantheses) following the respective individual question in the interview guide questions list.

EXHIBIT 1

MANAGERS' INTERVIEW QUESTIONS

The great emphasis currently given to budgeting calls for a high degree of understanding and support by all levels of management. This enquiry is a part of a University research study to examine the budgeting process from the managers' viewpoint. It is hoped to contribute to budgetary control in industry.

It is vital that managers' point of view is understood, and their experiences receive a proper emphasis. We should be grateful if you are entirely frank. Any information given will be treated as strictly confidential; neither your name nor your Company's will be associated with your answers in the thesis.

The questionnaire is divided into two main parts. Part one is a discussion about the preparation stage of the budget, whereas part two is about the control stage.

PART I: THE PLANNING STAGE

Managers' participation in budget setting

Managers' authority to reject budgets

Effect of participation on accuracy of budgets
- on the manager
- on manager's relations with others
- on budget achievement

Participation in revision of budgets

Training for participation

Effect of the budgeting system generally

PART II: THE CONTROL STAGE

Contents and relevance of the information

Frequency of the information

Presentation of the information

Consultation about the information

Accountant's role as an interpreter

Senior Manager's follow up

Manager's use of the information.

ABBREVIATIONS:

A:	Accountant	O:	Overhead budget
Budget:	Departmental budget	P:	Output budget
C:	Cost budget	S:	Satisfied
D:	Dissatisfied	SD:	Strongly dissatisfied
F:	Foreman	SM:	Senior Manager
I:	Important	SS:	Strongly Satisfied
L:	Labour budget	MR:	Manager
LT:	Long term budget	VI:	Very important
M:	Material budget	W:	Waste
NI:	Not important	?:	Undecided

I: THE PLANNING STAGE

A: MANAGERS' PARTICIPATION IN BUDGET SETTING:

1(i) DID YOU PARTICIPATE IN THE PREPARATION OF YOUR BUDGET?

	MR.	F.	M.	W.	L.	O.	P.	LT.
Participated								
Was consulted before or after preparation								
generally or in detail								
individually or in a meeting								
Was not consulted at all								
Others.								

(ii) a) WHY DID YOU PARTICIPATE? MR. F.

Company's policy
Very much interested
Think it is part of my job
To get a fair budget
Others.

b) OR WHY DID YOU NOT PARTICIPATE? MR. F.

Company's policy
Not trained enough to prepare a budget
Think it is accountant's job
No time
Others

c) OR WHY DID YOU NOT PARTICIPATE IN THE OTHER BUDGETS? MR. F.

Less important
Expenses are mostly fixed
Have no control on these items
Accountant can do them better
Others.

(iii) DO YOU CONSIDER YOUR PARTICIATION? MR. F.

Very important
Fairly important
Of little importance
Not important at all
Others

(TABLES C_1 and C_2)

2(i) ARE YOU SATISFIED WITH :

	SS.	S.	?.	D.	SD.
a) Your personal participation					
b) Your foremen participation					
c) Participation for your department					

(ii) IF NOT, WHICH FORM WOULD YOU SUGGEST? MR. F.

Participation or consultation
Generally or in detail
Individually or in a meeting
Others

B. MANAGER'S AUTHORITY TO REJECT BUDGETS:

3(i) DO YOU HAVE AUTHORITY TO: MR. F.

Reject budget before finalisation
Adjust it generally
Adjust it in detail
None
Others

(ii) ARE YOU SATISFIED WITH IT? MR. F.

Your authority to reject
Foremen authority to reject

(iii) IF NOT, WHAT WOULD YOU SUGGEST? MR. F.

C. EFFECT OF PARTICIPATION ON ACCURACY OF BUDGETS:

4(i) DID YOU BASE YOUR BUDGET ON : MR. F.

Last year's figures
Past experience and judgement
Statistical analysis
Consultation with work study, accountant, etc.
Others

(ii) DID YOU GET ANY INFORMATION TO HELP YOU PREPARE THE BUDGET?

Manager
Foreman

(iii) IF NOT, DO YOU NEED ANY? MR. F.

5(i) DID YOUR SENIOR MANAGER : MR. F. C. P.

Accept your budget
Cut your budget
Raise your budget

(ii) DO YOU SET A DIFFERENT BUDGET BECAUSE OF SENIOR MANAGER'S ACTION? MR. F. C. P.

Very much higher than practical
Fairly higher than practical
A little higher than practical
A practical budget
A little lower
Fairly lower
Very much lower

(iii) DO YOU ALWAYS PUT PRECISELY THE BUDGET YOU WILL MEET?

MR. SM. F. A. C. P.

Very much higher than practical
Fairly higher than practical
A little higher than practical
A practical budget
A little lower
Fairly lower
Very much lower

(TABLES C_3 and C_4)

(iv) DO YOU TAKE BUDGETS PREPARED BY OTHERS SERIOUSLY?

SM. F. A.

Very seriously
Fairly seriously
A little seriously
Fairly unseriously
Not seriously at all

6(i) WHAT DO YOU THINK OF THE ACCURACY OF THE PRESENT BUDGET?

MR. F. C. P.

Very much higher than practical
Fairly higher
A little higher
A practical budget
A little lower
Fairly lower
Very much lower

(TABLES C_{27} and C_{28})

(ii) HOW DOES THIS AFFECT ITS ACHIEVEMENT? MR. F. C. P.

Try to achieve the budget
Try to achieve a higher budget
Try to achieve a lower budget
Take no notice of the budget
Others

(TABLES C_{27} and C_{28})

D. EFFECT OF PARTICIPATION ON THE MANAGER:

7. HOW DOES THE PRESENT FORM OF PARTICIPATION AFFECT:

a) YOUR MORALE? MR. F.

Very good effect
Good effect
Bad effect
Very bad effect
No difference
Others

(TABLES C_5 and C_6)

b) YOUR STATUS? MR. F.

More status
Less status
No difference
Others

(TABLES C_7 and C_8)

c) YOUR INTEREST? MR. F. BUDGET DEPARTMENT

Very much interested
Fairly interested
More interested
Less interested
Not interested at all
No difference
Others

(TABLES C_9 to C_{14})

d) YOUR BACKING TO THE BUDGET? MR. F.

Secure your full backing
fair backing
more backing
less backing
no backing at all
no difference
Others.

(TABLES C_{11} and C_{12})

E. EFFECT OF PARTICIPATION ON MANAGER'S RELATIONS WITH OTHERS:

8(i) DOES PARTICIPATION MAKE YOU MORE OR LESS DEPARTMENTAL-CENTRED?

MR. F.

Very much departmental-centred
Fairly departmental-centred
A little departmental-centred
More departmental-centred
Less departmental-centred
No difference
Others. (TABLES C_{15} and C_{16})

(ii) YOUR CO-OPERATION WITH OTHERS?

MRS. SMS. F. A.

Very much improve cooperation

Fairly improve

A little improvement

Very much deteriorate cooperation

Fairly deteriorate

A little deterioration

No difference

Others

(TABLES C_{17} to C_{24})

F. EFFECT OF PARTICIPATION ON BUDGET ACHIEVEMENT:

9. HOW DOES THE PRESENT FORM OF PARTICIPATION AFFECT THE ACHIEVEMENT OF THE BUDGET?

MR. F.

Try to achieve the budget

Use the budget extensively

Fair use of the budget

A little use of the budget

More use

Less use

No use at all

No difference

Others

(TABLES C_{25} and C_{26})

G. PARTICIPATION IN REVISION OF BUDGETS:

10.(i) HAVE YOU BEEN CONSULTED ABOUT THE REVISION OF YOUR BUDGET?

MR. F.

Participated

Was consulted

Neither

(ii) ARE YOU SATISFIED WITH YOUR CONSULTATION?

SS. S. ?. D. SD.

a) Manager

b) Foreman

(iii) IF NOT, WHICH FORM WOULD YOU SUGGEST?

Participation or consultation

Be consulted about principles of revision or in detail

Others.

H. TRAINING FOR PARTICIPATION:

11. (i) WHAT IS YOUR GENERAL BACKGROUND AND EXPERIENCE?

(ii) DID YOU HAVE ANY TRAINING TO HELP YOU PREPARE THE BUDGET? MR. F.

(iii) ARE YOU SATISFIED WITH YOUR TRAINING?

	SS.	S.	?.	D.	SD.
Your training					
Foreman's training					

(iv) IF NOT, WHAT WOULD YOU SUGGEST? MR. F.

Training by the Accountant

An independent course

Others

I. EFFECT OF THE BUDGETING SYSTEM GENERALLY

12. (i) HOW LONG HAVE YOU BEEN PARTICIPATING IN BUDGETS? MR. F.

(ii) HOW LONG DID IT TAKE TO PREPARE THE PRESENT BUDGET?

(iii) IS THAT

Too long

Fairly long

A little long

Not long at all

Others

13. (i) HOW DO SENIOR MANAGERS REACT IF BUDGETS ARE NOT MET?

	MR.	F.	C.	P.
React very strongly				
React fairly strongly				
Little strongly				
Not strongly				
Take no notice				
Others				

(ii) DOES THE BUDGETING SYSTEM MAKE YOU FEEL: MR. F.

Very much secure

Fairly secure

Little secure

More secure

Less secure

No difference

Others

(iii) HOW DOES THE BUDGETING SYSTEM AFFECT YOU GENERALLY?

MR. F.

Welcome it
Oppose it
Like it
Dislike it
Take no notice of it
No difference
Others

(iv) HOW DOES THE BUDGETING SYSTEM AFFECT YOUR DEPARTMENT?

MR. F.

Improve productivity
Improve cost
Improve relations
Deteriorate relations
Better control
Better planning
No difference
Others

14.(i) DO YOU CONSIDER THE BUDGETING SYSTEM AS: MR. F. SM.

Very important
Fairly important
A little important
More important
Not important
Less important
Not important at all
No difference

TO THE OTHER TECHNIQUES OF MANAGING YOUR DEPARTMENT?

(ii) IS IT IMPORTANT BECAUSE OF : MR. F. SM.

Its value as an exercise in itself
It is used as a standard to evaluate people
It gives you a target for your Department
It is a basis for the periodic information
As a means of planning
As a means of control
As a means of communication
As an incentive
Others.

EXPLAIN.

(iii) HOW WOULD YOU IMPROVE THE PRESENT BUDGETING SYSTEM TO SECURE YOUR UTMOST USE OF THE BUDGET?

MR. F.

More time to prepare a budget

More consultation

More training

More appreciation of shop floor problems

More accuracy (practical) budgets

More authority to reject budgets

Others.

EXPLAIN.

II: THE CONTROL STAGE

J. CONTENTS AND RELEVANCE OF THE INFORMATION:

15. WHAT ARE THE PERIODIC RETURNS PROVIDED BY THE ACCOUNTANT?

	MR.	F.
Daily, Weekly,		
Monthly, Quarterly.		
Others.		

16. (i) WHAT ARE THE FEATURES THAT MATTER MOST IN YOUR DEPARTMENT?

	VI.	I.	NI.
Output			
Delivery			
Quality			
Cost			
Others			

(ii) DO YOU CONSIDER COST AS :

	L.	M.	O.
Extremely important			
More important			
As important			
Less important			
Not important at all			
Others			

IN RELATION TO THE OTHER FEATURES OF YOUR DEPARTMENT?

17. (i) IS THE INFORMATION PROVIDED RELEVANT:

a) TO THE FEATURES YOU CONSIDER AS MOST IMPORTANT
b) TO THE PROBLEMS OF YOUR DEPARTMENT

	a)	b)
Wholly relevant		
Partly relevant		
A little relevant		
Not relevant at all		
Others		

WHY NOT?

(ii) IS THE INFORMATION :

Adequate enough
Not adequate at all
Too much
Too little
Others

TO ACHIEVE THE THINGS WHICH YOU REGARD AS MOST IMPORTANT?

(iii) ARE THERE MATTERS WHICH YOU REGARD AS MOST IMPORTANT BUT NOT INTEGRATED IN THE INFORMATION?

MR. F.

18.(i) DO YOU CONSIDER THE ITEMS ON YOUR RETURN AS :

MR. F.

Entirely controllable within the Department

Partly controllable

Hardly controllable

Others.

(ii) DOES THE INFORMATION DISTINGUISH BETWEEN CONTROLLABLE AND NON CONTROLLABLE ITEMS?

MR. F.

(iii) SHOULD IT DO? WHY?

(iv) WHICH INFORMATION SHOULD BE PROVIDED ON THE FOLLOWING RETURNS?

	CONT.	N.CONT.	BOTH.	MR.	F.
Daily					
Weekly					
Monthly					
Others					

19.(i) DO YOU GET THE INFORMATION ABOUT: MR. F.

a) The whole performance

b) OR better and worse than budget only

(ii) SHOULD THE INFORMATION BE ABOUT: MR. F.

a) The whole performance

b) OR better and worse than budget only

EXPLAIN.

20.(i) DO YOU HAVE ANY CONFIDENCE IN THE INFORMATION?

MR. F.

A great deal of confidence

A fair amount

A little

No confidence at all

Others

(ii) DO YOU TAKE A GREAT INTEREST IN THE INFORMATION?

MR. SM. F.

A great deal of interest
Very much interested
Not so much interested
Not interested at all
Others

K. FREQUENCY OF THE INFORMATION

21.(i) HOW OFTEN IS THE INFORMATION PROVIDED TO YOU? MR. F.

(ii) HOW QUICK?

(iii) IS IT TOO OFTEN OR NOT OFTEN ENOUGH?

Too often
Often enough
Not often enough
Others

(iv) IS IT TOO QUICK OR TOO LATE?

Too quick
Quick enough
On time
Reasonably late
Too late
Others

(v) WOULD IT BE MORE HELPFUL IF YOU HAVE THE INFORMATION:

a) More often
b) More quickly a) b)

Very much helpful
More helpful
Less helpful
Not helpful at all
No difference
Others.

EXPLAIN.

22. a) WHICH INFORMATION HELPS YOU BEST TO CONTROL?

b) WHAT USEFULNESS IS EACH TO YOU? HOW?

	a)	b)
Daily		
Weekly		
Monthly		
Others		

L. PRESENTATION OF THE INFORMATION.

23 a) WHAT FORM OF PRESENTATION IS USED?

b) WHAT FORM SUITS YOU BEST?

	a)	b)
Figures		
Graphs		
Both		
Others		

EXPLAIN.

24 a) WHICH COMPARISONS ARE MORE USEFUL FOR CONTROL: MR. F.

Actual with budget for the period
Actual with budget for the period to date
Actuals for the same period this and last year
Others

b) WHICH FIGURES ARE MORE IMPORTANT FOR CONTROL: MR. F.

Trend figures
or intrensic figures

25 a) IS THE LANGUAGE OF THE INFORMATION: MR. F.

Very difficult to understand	- highly technical
Fairly difficult	- fairly technical
Easy to understand	- non technical
Very easy to understand	- simple language
Others	

b) ARE YOU SATISFIED WITH IT ? SS. S. ?. D. SD.

c) IF NOT, WHAT WOULD YOU SUGGEST?

M. CONSULTATION ABOUT THE INFORMATION

26. a) HAVE YOU BEEN CONSULTED ABOUT THE INFORMATION?

b) SHOULD YOU BE CONSULTED? WHY?

	MR.		F.	
	a)	b)	a)	b)
Contents				
Form				
Frequency				
Language				
System				

c) WHAT FORM OF CONSULTATION TOOK PLACE?

d) WHICH FORM SHOULD TAKE PLACE?

	MR.		F.	
	c)	d)	c)	d)
Participation				
Consultation				
Once				
From time to time				
Others				

27. a) DO YOU WANT TO CHANGE?

b) ARE YOU ABLE TO CHANGE?

	a)	b)
Contents of the information		
Form		
Frequency		
Language		
System		
Others		

N. ACCOUNTANT'S ROLE AS AN INTERPRETER:

28. (a) IS THE INFORMATION: MR. F.

New to the manager

or does he know about it already

(b) ARE THERE ANY INTERPRETATIONS TO FOLLOW THE RETURN?

(c) IS THE INFORMATION DISCUSSED BETWEEN YOU AND THE ACCOUNTANT BEFORE DISCUSSION WITH YOUR SENIOR MANAGER?

(d) IF NOT, SHOULD IT BE?

(e) HOW OFTEN DO YOU SEE THE ACCOUNTANT TO DISCUSS PERIODIC RETURN?

(f) SHOULD THERE BE AN ACCOUNTANT'S FOLLOW UP TO EXPLAIN FIGURES AND UNDERSTAND SHOP FLOOR PROBLEMS? WHAT FORM?

MR. F.

O. SENIOR MANAGER'S FOLLOW UP:

29.(i) IS THERE A SYSTEM OF FOLLOWING UP?

(ii) ARE YOU SATISFIED WITH IT? SS. S. ?. D. SD.

Following up by senior manager

Following up foreman by you

(iii) IF NOT, WHAT WOULD YOU SUGGEST?

(iv) DOES THE SYSTEM HELP TO COMMUNICATE SHOP FLOOR PROBLEMS? (TABLES C_{29} and C_{30}) MR. SM. A.

(v) HOW DOES FOLLOW UP AFFECT :

a) YOUR USE OF THE CONTROL INFORMATION? MR. F.

Extensive use

Fair use

Little use

More use

Less use

No use at all

Take no notice

No difference

Others

(TABLES C_{31} and C_{32})

b) YOUR MORALE?

Very good effect

Good effect

Bad effect

Very bad effect

No difference

Others

(TABLES C_{33} and C_{34})

c) YOUR COOPERATION WITH OTHERS? MRS. SMR. FS. A.

Very much improve cooperation

Fairly improve cooperation

Little improvement

Little deterioration

Fairly deteriorate

Very much deteriorate

No difference

Others

(TABLES C_{35} to C_{42})

P. USE OF THE INFORMATION

30.(i) HOW DO YOU USE THE INFORMATION? MR. SM. F.

(ii) WHY DO YOU USE IT IN THIS WAY?

(iii) HOW MUCH TIME DO YOU SPEND ON THE INFORMATION? MR. F.

Very much
Fair time
Little time
Very little
Others

(iv) WHY NOT VERY MUCH?

Think it is not important
No confidence in its accuracy
Can do everything without it
Information is too much
Information is too late
Its language is too difficult
Others

(v) OR WHY DO YOU NOT USE THE INFORMATION?

(vi) IS THE INFORMATION WORTHWHILE TO YOU? MR. F.

(vii) WHAT SHOULD BE DONE TO MAKE IT MORE USEFUL? MR. F.

Be consulted about the information
More interpretations from the Accountant
More follow up by senior manager
Less information
Abolish the system
Others

EXPLAIN.

EXHIBIT 2.

SENIOR MANAGERS' INTERVIEW QUESTIONS

The great emphasis currently given to budgeting calls for a high degree of understanding and support by executive managers. This inquiry is a part of a University research study to examine the budgeting process from the managers' viewpoint. It is hoped to contribute to budgetary control in industry.

It is vital that top management point of view is understood, and a proper emphasis is given to their experience. We should be very grateful if you are entirely frank. Any information given will be treated as strictly confidential; neither your name nor your Company's will be associated with your answers in the thesis.

The Questionnaire is divided into two main parts. Part one is a discussion about the preparation stage of the budget, whereas part two is about the control stage.

PART I: THE PLANNING STAGE

Managers' participation
Effect of participation on accuracy of budgets
the manager
relations with other managers
budget achievement

Training for participation
Effect of the system generally

PART II: THE CONTROL STAGE

Departmental objectives
Information provided to managers
Follow up
Accountant's role as an interpreter
Managers' use of the information.

ABBREVIATIONS:

A: Accountant

Budget: Departmental budget

C: Cost budget

D: Dissatisfied

F: Foreman

LT: Long Term budget

MR: Manager

P: Output budget

S: Satisfied

SD: Strongly dissatisfied

SM: Senior Manager

SS: Strongly Satisfied

? : Undecided

I: THE PLANNING STAGE

A) MANAGERS' PARTICIPATION

1(i) DID MANAGERS SET THEIR BUDGETS? C. P. LT.

Managers set their budget
Were consulted by senior manager
accountant
generally or in detail
before or after preparation
individually or in a meeting
Others.

(ii) WHY DID THEY PARTICIPATE?

Company's policy
To arouse their interest
To secure their backing
It is a feature of their job
Others

(iii) OR WHY DID THEY NOT PARTICIATE :

Company's policy
It is senior manager's job
It is accountant's job
Not trained enough
No time
Others

(iv) OR WHY DID THEY NOT PARTICIPATE IN OTHER BUDGETS?
M. L. O. P. LT.

Less important
Company's policy
Have no control on it
Expenses are mostly fixed
Others

2(i) DO YOU CONSIDER THEIR PARTICIPATION: MR. F.

Very important
Fairly important
Of little importance
Not important at all
Others

(ii) SHOULD THEY BE CONSULTED MR. F.

(iii) WHICH CONSULTATION FORM IS MORE EFFECTIVE IN YOUR EXPERIENCE?

Participation or consultation
Consultation before or after preparation
generally or in detail
individually or in a meeting

Others

EXPLAIN.

(iv) DO YOU INSIST THAT MANAGERS ACCEPT THEIR BUDGETS?

Managers have authority to reject budgets
adjust generally
adjust in detail
no authority

Others.

B) EFFECT OF PARTICIPATION ON ACCURACY OF BUDGETS

3(i) ARE THE DEPARTMENTAL BUDGETS:

Precise ones
Approximation
Generalisations
A hope to work for
Others

(ii) HOW DOES PARTICIPATION AFFECT BUDGET SETTING? MR. A.

Try to set a practical budget
higher budget
lower budget

Others.

(iii) DO YOU HAVE CONFIDENCE IN BUDGETS SET BY OTHER PEOPLE?
MR. A.

A great deal of confidence
A fair amount
A little
No confidence at all
Others

(iv) DID YOU: C. P.

Accept
Cut
Raise
Refuse

THE BUDGET PREPARED BY THE MANAGER?

(v) HOW DID YOUR ACTION AFFECT THE SETTING OF THE BUDGET?

Manager set a higher budget
lower budget
practical budget
Others

(vi) WHAT DO YOU THINK OF THE PRESENT BNDGET? C. P.

Very much higher than practical
A little higher than practical
A practical budget
A little lower than practical
Very much lower than practical
Others

(vii) HOW DOES THIS AFFECT ITS ACHIEVEMENT? C. P.

Try to achieve his budget
a higher budget
a lower budget
Take no notice of it
Work to his own secret budget
Others

C) EFFECT OF PARTICIPATION ON THE MANAGER :

4. HOW DOES THE PRESENT FORM OF PARTICIPATION AFFECT :

(a) HIS MORALE

A very good effect
A good effect
A bad effect
A very bad effect
No difference
Others

(b) HIS STATUS

Gives manager more status
less status
No difference
Others

(c) HIS INTEREST Budget. Department.

Very much interested
More interested
Less interested
Not interested at all
No difference
Others

(d) HIS BACKING TO THE BUDGET

Secure his full backing
more backing
less backing
no backing at all
No difference
Others

D) EFFECT OF PARTICIPATION ON RELATIONS WITH OTHER MANAGERS :

5(i) DOES THIS FORM OF PARTICIPATION MAKE THE MANAGER :

Very much departmental-centred
Fairly departmental-centred
A little departmental-centred
More departmental-centred
Less departmental-centred
No difference
Others

EXPLAIN.

(ii) HOW DOES IT AFFECT HIS COOPERATION WITH OTHER PEOPLE?

	MRS.	SMS.	FS.	A.
Very much improve cooperation				
Fairly improve cooperation				
A little improvement				
Very much deteriorate				
Fairly deteriorate cooperation				
Little deterioration				
No difference				
Others				

EXPLAIN.

E) EFFECT OF PARTICIPATION ON BUDGET ACHIEVEMENT:

6. DOES THIS FORM OF PARTICIPATION MAKE THE MANAGER :

	MR.	F.
Try to achieve his budget		
Take no notice of the budget		
Work to his own secret budget		
Use his budget extensively		
Fair use		
Little use		
More use		
Less use		
No use at all		
No difference		
Others.		

EXPLAIN.

F) TRAINING FOR PARTICIPATION:

7(i) ARE YOU SATISFIED WITH MANAGERS' TRAINING?

	SS.	S.	?.	D.	SD.
To prepare a budget					
To understand the budget					
To use it					

(ii) IF NOT, WHY NOT?

(iii) WHAT WOULD YOU SUGGEST?

Training by the Accountant
An independent course
Others.

G) EFFECT OF THE SYSTEM GENERALLY:

8(i) ARE BUDGETS REGARDED SERIOUSLY IF THEY ARE NOT MET?

C. P.

Very seriously
Fairly seriously
Little seriously
Not seriously at all
Others

EXPLAIN.

(ii) ARE BUDGETS REGARDED AS : SM. MR.

a) Very important
Fairly important
As important
A little important
More important
Less important
Not important at all
Others.

IN RELATION TO OTHER TECHNIQUES OF MANAGEMENT?

b) BECAUSE OF BUDGETING AS : SM. MR.

An exercise in itself
A means of planning
of control

(ii) HOW DID MANAGERS REACT TO THE SYSTEM?

Welcome it
Oppose it
Like it
Dislike it
Take no notice of it
Others

10. HOW WOULD YOU IMPROVE THE PRESENT SYSTEM TO SECURE THE UTMOST USE BY MANAGERS?

Give manager more time to prepare a budget
more consultation with senior manager
more consultation with Accountant
more consultation with foremen
more accurate or practical budgets
more training of managers
more training of foremen
Others

EXPLAIN.

II: THE CONTROL STAGE

H) DEPARTMENT OBJECTIVES :

11.(a) WHAT ARE THE FEATURES YOU CONSIDER AS MOST IMPORTANT IN A DEPARTMENT? VI. I. NI.

Level of output
Delivery on time
Quality
Cost
Good internal relations
Others

(b) IS THE MANAGER's RESPONSIBILITY TO COST

Extremely important
More important
As important
Less important
Not important at all
Others

THAN HIS RESPONSIBILITY TO OTHER FEATURES?

(c) WHICH ASPECTS OF THEIR COST CAN MANAGERS CONTROL?

Direct material
Direct labour
overhead
waste

(d)HAVE THE DEPARTMENT'S OBJECTIVES BEEN DISCUSSED AND ACCEPTED BY MANAGERS?

(e) WHAT FORM?

I) INFORMATION

12(i) ARE YOU SATISFIED WITH INFORMATION:

SS. S. ?. D. SD.

a) GIVEN TO YOU

form
contents
frequency
language

	SS.	S.	?.	D.	SD.
b) GIVEN TO MANAGERS					
form					
contents					
frequency					
language					

(ii) WHY?

(iii) IF NOT SATISFIED, WHY NOT?

(iv) SHOULD THE INFORMATION DISTINGUISH BETWEEN CONTROLLABLE AND NON-CONTROLLABLE ITEMS?

(v) SHOULD THE INFORMATION BE ON EXCEPTIONAL BASIS?

J) FOLLOW UP

13(i) WHAT USE DO YOU MAKE OF THE INFORMATION?
(ii) DO YOU FOLLOW-UP MANAGERS' PERFORMANCES?
(iii) HOW? IN WHAT FORM? IS IT PRESSURE?
(iv) DOES IT HAVE ANY EFFECT:

a) ON USE OF BUDGET AND INFORMATION

Extensive use
More use
Less use
No use at all
No difference
Others

b) ON THEIR MORALE?

A very good effect
A good effect
Not so good
A bad effect
No difference
Others

c) ON THEIR COOPERATION? MRS. SM. FS. A.

Very much improve cooperation
Fairly improve cooperation
Fairly deteriorate cooperation
Very much deteriorate cooperation
No difference
Others

K) ACCOUNTANT'S ROLE AS AN INTERPRETER

14(i) SHOULD THERE BE A FOLLOWING UP BY THE ACCOUNTANT?

(ii) IN WHAT FORM

(iii) SHOULD THE ACCOUNTANT DISCUSS FIGURES WITH MANAGERS AS A BASIS FOR YOUR DISCUSSIONS WITH THEM?

(iv) DO DISCUSSIONS WITH MANAGER HELP TO COMMUNICATE SHOP FLOOR PROBLEMS?

L) MANAGERS' USE OF THE INFORMATION

15(i) DO YOUR MANAGERS USE THEIR INFORMATION?

Extensively
Fairly
Not too much
A little
Don't use it at all
Others

(ii) WHAT MAKES THEM

a) USE THEIR INFORMATION?

Participation
Follow-up
Form of information
Contents of information
Frequency of information
Language of information
Good relations
Others

b) DO NOT USE THE INFORMATION?

Non follow-up
Not enough training
No time
Language is too difficult
Others

EXPLAIN.

16(a) DO YOU ASSESS YOUR MANAGERS BY THEIR BUDGETARY PERFORMANCE?

Partially
A little
Not very much
Not at all
Others

(b) SHOULD YOU?

(c) WHY?

(d) IF THE BONUS OF MANAGER IS PARTLY RELATED TO HIS BUDGET, WOULD THIS AFFECT HIS USE OF THE BUDGET?

Extensive use
More use
Little use
Less use
No use at all
No difference
Others

17. HOW WOULD YOU IMPROVE THE SYSTEM TO SECURE THE UTMOST USE BY MANAGERS?

More follow-up
Less follow-up
Change the form of follow-up
More training
Simplified information
More meetings with the Accountant
More interpretations by the Accountant
More consultation about information
Others.

EXPLAIN.

EXHIBIT 3

ACCOUNTANTS' INTERVIEW QUESTIONS

The great emphasis currently given to budgeting calls for a high degree of understanding and support by all levels of management. This enquiry is a part of a University research study to examine the budgeting process from the managers' view point. It is hoped to contribute to budgetary control in industry.

It is vital that Accountants point of view is understood and their experiences receive a proper emphasis. We should be grateful if you are entirely frank. Any information given will be treated as strictly confidential; neither your name nor your Company's will be associated with your answers in the thesis.

The Questionnaire is divided into two main parts. Part one is a discussion about the preparation stage of the budget, whereas part two is about the control stage.

INTRODUCTION: General Questions about the Company
about the budgeting system.

PART I: THE PLANNING STAGE.

Managers' participation in budget setting
Effect of participation on accuracy of budgets
on the manager
on manager's relations with others
on budget achievement
Participation in the revision of budgets
Training for participation
Effect of the budgeting system generally

PART II: THE CONTROL STAGE

Contents and relevance of the information
Frequency of the information
Presentation of the information
Consultation about the information
Accountant's role as an interpreter
Senior Manager's follow-up
Managers' use of the information.

ABBREVIATIONS:

A: Accountant

Budget: Departmental budget

C: Cost budget

Cas: Cash Budget

Cap: Capital budget

D: Dissatisfied

F: Foreman

I: Important

L: Labour budget

LT: Long Term budget

M: Material budget

MR: Manager

NI: Not important

O: Overhead Budget

P: Output budget

S: Satisfied

SD: Strongly dissatisfied

SL: Sales budget

SM: Senior Manager

SS: Strongly satisfied

VI: Very important

W: Waste

? : Undecided

A. GENERAL QUESTIONS ABOUT THE COMPANY

1(i) WHAT ARE THE COMPANY'S MAIN PRODUCTS?

(ii) WHAT ARE THE MAIN METHODS OF PRODUCTION?

Mass production
Continuous process
Batch production
One-off production
Others

(iii) HOW MANY EMPLOYEES DOES THE COMPANY HAVE ?

2(i) WHAT IS THE COMPANY'S SHARE OF THE MARKET?

(ii) IS THE COMPANY'S MARKET :

Expanding
Constant
Stagnant
Others

(iii) WHETHER THE MARKET IS :

Local
National
Overseas
National and overseas
Others

(iv) WHO ARE THE COMPANY'S MAIN CUSTOMER AND SUPPLIER GROUPS?

(v) WHAT IS THE PERCENTAGE INCREASE IN :

Sales
Capital

IN THE LAST TEN YEARS?

(vi) WHAT MATTERS MOST AS FAR AS THE COMPANY IS CONCERNED?

Sales
Production
Cost
Good relations
Others

B. GENERAL QUESTIONS ABOUT THE BUDGETING SYSTEM

3(i) DOES THE COMPANY HAVE :

An integrated system
A standard costing system
Others

(ii) WHICH BUDGETS DO THE COMPANY PREPARE?

SL. P. M. L. O. Cap. Cas. LT.

In detail
Generally

4(i) FOR HOW LONG DID THE COMPANY HAVE A BUDGETING SYSTEM?

(ii) ANY SPECIAL REASONS FOR PUTTING THE SYSTEM?

a) PROBLEMS LED TO THE ADOPTION OF THE SYSTEM

b) OBJECTIVES HOPED TO BE ACHIEVED BY THE SYSTEM

Better planning
Better control
pricing
communication
providing information to all managerial levels
reducing cost
impriving productivity
increasing sales
others.

C) OBJECTIVES ALREADY ACHIEVED

I: THE PLANNING STAGE

C) MANAGERS' PARTICIPATION IN BUDGET-SETTING

5(i) a) WHEN DID YOU START BUDGETING FOR THE PRESENT YEAR?

b) HOW LONG DID IT TAKE?

c) FOR HOW LONG HAVE MANAGERS BEEN PARTICIPATING?

(ii) THE PROGRAMME BUDGET

a) IS THE STARTING BUDGET SALES OR PRODUCTION?

b) HOW WAS IT ARRIVED AT? WHAT BASIS?

c) BY WHOM?

(iii) THE DEPARTMENTAL BUDGETS

a) HOW WERE THEY PREPARED?

b) ON WHAT BASIS WERE THEY PREPARED?

Material
Labour
Overhead
Long term

c) WHO PARTICIPATED IN THE PREPARATION?

d) WHAT INFORMATION GIVEN TO MANAGERS TO HELP THEM PREPARE A BUDGET?

e) WHO CHECKED THE ACCURACY OF BUDGETS? HOW?

f) WHO APPROVED OF THE BUDGET?

6)(i) WHY DID MANAGERS PARTICIPATE? MR. F.

Company's policy
Part of the manager's job
To arouse their interest
Others

(ii) OR WHY DID THEY NOT PARTICIPATE?

Company's policy
Not trained enough
Part of Accountant's job
Far too busy
Others.

(iii) OR WHY DID THEY NOT PARTICIPATE IN OTHER BUDGETS?

	M.	L.	O.	P.	LT.
Less important					
Expenses are mostly fixed					
Have no control on them					
No time					
Others					

7(i) DO YOU CONSIDER THEIR PARTICIPATION?

	SM.	MR.	F.
Very important			
Fairly important			
Of little importance			
Not important at all			
No difference			
Others			

(TABLES C_1 and C_2)

(ii) ARE YOU SATISFIED WITH THEIR PARTICIPATION?

	SS.	S.	?.	D.	SD.
Senior Manager					
Manager					
Foreman					

(iii) WHICH PARTICIPATION FORM IS MORE EFFECTIVE IN YOUR EXPERIENCE?

Participation or consultation
Consultation before or after preparation
Generally or in detail
Individually or in a meeting
Others

EXPLAIN.

(iv) DO YOU INSIST THAT THE MANAGER ACCEPTS HIS BUDGET BEFORE IT IS FINALISED?

D) EFFECT OF PARTICIPATION ON ACCURACY OF BUDGETS:

8(i) ARE THE DEPARTMENTAL BUDGETS REGARDED AS:

Precise ones
Approximation
Generalisations
A hope to work for
Others

(ii) HOW DID PARTICIPATION AFFECT BUDGET-SETTING?

SM. MR. F. A.

Ideal budget
Practical budget
Very much higher than practical
A little higher than practical
More accuracy (practical) budget
Less " " "
A little lower than practical
Very much lower than practical
Others

(TABLES C_3 and C_4)

9. DO YOU HAVE CONFIDENCE IN BUDGETS PREPARED BY OTHERS?

MR. F.

A great deal of confidence
A fair amount
A little
No confidence
Others

10. (i) WHAT DO YOU THINK OF THE ACCURACY OF THE PRESENT BUDGET?

Very much higher than practical
A little higher than practical
Very much lower than practical
A little lower than practical
Others

(TABLES C_{27} and C_{28})

(ii) HOW DOES THIS AFFECT ITS ACHIEVEMENT?

Try to achieve his budget
a higher budget
a lower budget

Take no notice of the budget
Work to his own secret budget
Others

(TABLES C_{27} and C_{28})

E. EFFECT OF PARTICIPATION ON THE MANAGER:

11. HOW DOES THE PRESENT FORM OF PARTICIPATION AFFECT:

a) MANAGER'S MORALE — MR. F.

Very good effect
Good effect
Bad effect
Very bad effect
Others

(TABLES C_5 and C_6)

b) MANAGER'S STATUS — MR. F.

More status
Less status
No difference
Others

(TABLES C_7 and C_8)

c) MANAGER'S INTEREST

	Budget		Department	
	MR.	F.	MR.	F.
Very much interested				
Fairly interested				
More interested				
Less interested				
Not interested at all				
No difference				
Others				

(TABLES C_9 to C_{14})

d) MANAGER'S BACKING TO THE BUDGET: — MR. F.

Secure his full backing
more backing
less backing
no backing at all
no difference
Others

(TABLES C_{11} and C_{12})

F. EFFECT OF PARTICIPATION ON MANAGER'S RELATIONS WITH OTHERS

12.(a) DOES THIS FORM OF PARTICIPATION MAKE THE MANAGER DEPARTMENTAL-CENTRED?

MR. F.

Very much departmental-centred
Fairly departmental-centred
A little departmental-centred
More departmental-centred
Less departmental-centred
Not departmental-centred at all
No difference
Others

EXPLAIN.

(TABLES C_{15} and C_{16})

(b) HOW DOES IT AFFECT HIS COOPERATION WITH OTHER MANAGERS?

MRS. SMS. FS. A.

Very much improve cooperation
Fairly improve
A little improvement
More cooperation
Less cooperation
A little deterioration
Fairly deteriorate cooperation
Very much deteriorate cooperation
No difference

EXPLAIN.

(TABLES C_{17} to C_{24})

G. EFFECT OF PARTICIPATION ON BUDGET ACHIEVEMENT:

13. HOW DOES THE PRESENT FORM OF PARTICIPATION AFFECT BUDGET ACHIEVEMENT?

MR. F.

Try to achieve his budget
Use his budget extensively
Fair use of the budget
Little use of the budget
More use of the budget
Less use of the budget
Take no notice of the budget
Work to his own secret budget
No difference
Others

EXPLAIN.

(TABLES C_{25} and C_{26})

H. PARTICIPATION IN THE REVISION OF BUDGETS

14.(i) ARE BUDGETS REVISED?

(ii) WHEN? HOW OFTEN?

(iii) ON WHAT BASIS?

(iv) WERE MANAGERS CONSULTED ABOUT REVISION? SM. MR. F.

Participated
Were consulted
Neither

15.(i) SHOULD THE MANAGER BE CONSULTED ABOUT REVISION?

(ii) WHAT FORM?

Participation or consultation
Be consulted about principles of revision or in detail
Others

16. WHAT USE DO YOU MAKE OF THE VARIABLE (REVISED) BUDGET?

a) Manager
b) Senior manager
c) Accountant

I. TRAINING FOR PARTICIPATION

17.(i) DID MANAGERS HAVE TRAINING TO HELP THEM? MR. F.

a) Prepare a budget
b) Use the budget

(ii) WHAT KIND OF TRAINING?

Training by the Accountant
An independent course
Others

(iii) ARE YOU SATISFIED WITH THEIR TRAINING?

SS. S. ?. D. SD.

Manager
Foreman

(iv) WOULD YOU SUGGEST ANY OTHER FORM OF TRAINING?

(v) WHAT IS THE EDUCATIONAL BACKGROUND OF MANAGERS?

MR. F.

J. EFFECT OF THE BUDGETING SYSTEM GENERALLY

18.(i) IS IT REGARDED SERIOUSLY IF BUDGETS ARE NOT MET?

Very seriously
Fairly seriously
A little seriously
Not seriously at all
Others

EXPLAIN.

(ii) a) DO YOU CONSIDER THE BUDGETING SYSTEM AS : A. SM. MR.

Very important
Fairly important
Of little importance
Not important at all
Others

b) IS IT IMPORTANT BECAUSE OF : A. SM. MR.

Its value as an exercise in itself
as a means of planning
control
communication
evaluating managers
as a basis for the periodic information
as a target
as an incentive
Others

(iii) HOW WOULD YOU IMPROVE THE PRESENT SYSTEM TO SECURE THE UTMOST USE OF BUDGETS BY MANAGERS?

MR. F.

More time
More consultation
More training
More studies of shop floor problems
More accuracy (practical) budgets
More authority to reject budgets
Others

EXPLAIN.

II: THE CONTROL STAGE

K. CONTENTS AND RELEVANCE OF THE INFORMATION

19. WHAT ARE THE CONTROL RETURNS PROVIDED TO MANAGERS?

	F.	MR.	SM.
Daily, Weekly			
Monthly, Quarterly,			
Others.			

20.(i) a) WHAT ARE THE FEATURES THAT MATTER MOST IN A DEPARTMENT?

	VI.	I.	NI.
Output			
Delivery on time			
Quality			
Cost			
Others			

b) ARE THESE FORMAL OR INFORMAL OBJECTIVES? DISCUSSED OR NOT?

(ii) DO YOU CONSIDER COST AS:

	M.	W.	L.	O.
Extremely important				
Fairly important				
Of little importance				
As important				
More important				
Less important				
Not important at all				

IN RELATION TO OTHER FEATURES OF A DEPARTMENT?

(iii) WHAT CAN MANAGERS CONTROL?

Output
Labour cost
Material cost
Waste
Overheads
Others

(iv) IS THE INFORMATION PROVIDED RELEVANT TO:

a) What managers can control
b) Features considered as most important
c) To the problems of a department

	a)	b)	c)
wholly relevant			
partly relevant			
a little relevant			
not relevant at all			

WHY NOT? SHOULD IT BE?

(v) IS THE INFORMATION:

Adequate enough
Fairly adequate
A little adequate
Not adequate at all
Too much
Too little
Others

TO REPORT THE THINGS REGARDED AS MOST IMPORTANT?

(vi) ARE THERE MATTERS REGARDED AS MOST IMPORTANT BUT NOT INTEGRATED IN THE INFORMATION?

21(i) DO YOU CONSIDER THE ITEMS ON THE RETURN AS :

Entirely controllable within the Department
Partly controllable within the Department
Hardly controllable within the Department
Others

(ii) DOES THE INFORMATION DISTINGUISH BETWEEN CONTROLLABLE AND NON CONTROLLABLE ITEMS?

(iii) SHOULD IT DO? WHY?

(iv) WHICH INFORMATION SHOULD BE PROVIDED ON THE FOLLOWING RETURN:

	Cont.	N-cont.	Both.
Daily, Weekly			
Monthly, Quarterly.			

WHY?

22.(i) IS THE INFORMATION PROVIDED ON AN EXCEPTIONAL BASIS?

(ii) SHOULD IT BE? WHY?

L. FREQUENCY OF THE INFORMATION

23.(i) HOW OFTEN IS THE INFORMATION PROVIDED TO MANAGERS?

	SM.	MR.	F.

(ii) HOW QUICK?

(iii) IS IT TOO OFTEN?

	SM.	MR.	F.
Too often			
Fairly often			
Often enough			
Not often enough			
Others			

(iv) IS IT TOO QUICK OR TOO LATE ?

	SM.	MR.	F.
Too quick			
Fairly quick			
On time			
Late			
Too late			
Others			

(v) WOULD IT BE MORE HELPFUL IF MANAGERS HAVE THE INFORMATION

a) MORE OFTEN

b) MORE QUICK

	a)	b)
Very much helpful		
Fairly helpful		
A little helpful		
As helpful		
More helpful		
Less helpful		
No difference		

M. PRESENTATION

24(i) ARE YOU SATISFIED THAT THE FORM OF PRESENTATION USED SUITS MANAGERS' TRAINING AND BACKGROUND?

	SS.	S.	?.	D.	SD.
SM.					
M.					
F.					

(ii) IF NOT, WHAT WOULD YOU SUGGEST?

(iii) a) WHICH COMPARISONS ARE MORE USEFUL FOR CONTROL?

Actual with budget for the period
Actual with budget for the period to date
Others

b) WHICH FIGURES ARE MORE IMPORTANT FOR CONTROL ?

Intrensic figures
OR Trend figures

25. IS THE LANGUAGE OF THE INFORMATION:

	SM.	MR.	F.
Very difficult to understand			
Fairly difficult to understand			
A little difficult to understand			
Fairly easy to understand			
Very easy to understand			
Others			

N. CONSULTATION ABOUT THE INFORMATION:

26.(i) WERE MANAGERS CONSULTED ABOUT THE INFORMATION?

(ii) SHOULD THEY BE CONSULTED?

	(i)			(ii)		
	SM.	MR.	F.	SM.	MR.	F.
Contents						
Form						
Relevance						
Frequency						
Language						
System						

(iii) WHICH FORM SHOULD TAKE PLACE ?

Participation
Consultation
Once
From time to time
Individually or in a meeting
Others

(iv) CAN MANAGERS REPORT ANY CHANGES IN THE SYSTEM? DID THEY?

O. ACCOUNTANT'S ROLE AS AN INTERPRETER

27.(i) IS THE INFORMATION NEW TO THE MANAGER?

(ii) ARE THERE INTERPRETATIONS TO FOLLOW THE RETURN? WHAT FORM?

(iii) HOW OFTEN DO YOU SEE MANAGERS TO DISCUSS THE RETURN?

(iv) IS THE INFORMATION DISCUSSED REGULARLY BETWEEN YOU AND THE MANAGER BEFORE IT IS DISCUSSED WITH HIS SENIOR MANAGER?

(v) IF NOT, SHOULD IT BE?

(vi) SHOULD THERE BE A FOLLOWING UP BY YOU, NOT TO CRITICISE BUT TO EXPLAIN THE FIGURES AND UNDERSTAND SHOP FLOOR PROBLEMS?

P. SENIOR MANAGER'S FOLLOW UP

28(i) ARE YOU SATISFIED WITH FOLLOW-UP AS PRACTISED BY SENIOR MANAGERS?

SS. S. ?. D. SD.

(ii) IF NOT, WHAT WOULD YOU SUGGEST?

(iii) DO YOU THINK THAT FOLLOW UP EFFECTS :

a) MANAGER'S MORALE
Very good effect
good effect
bad effect
very bad effect
no difference

(TABLES C_{33} and C_{34})

b) HIS CO-OPERATION WITH OTHERS

	MRS.	SMR.	FS.	A.
Very much improve cooperation				
Fairly improve cooperation				
A little improvement				
A little deterioration				
Fairly deteriorate cooperation				
Very much deteriorate cooperation				
No difference				

(TABLES C_{35} to C_{42})

c) HIS USE OF THE PERIODIC INFORMATION:

Extensive use
Fair use
Little use
More use
Less use
No use at all
Others

(TABLES C_{31} and C_{32})

d) HELP TO COMMUNICATE SHOP FLOOR PROBLEMS

to the accountant
to his senior manager

(TABLES C_{29} and C_{30})

Q. MANAGERS' USE OF THE INFORMATION

29(i) DO YOU THINK THAT MANAGERS USE THE INFORMATION?

	SM.	MR.	F.
Extensive use			
Fair use			
Little use			
No use at all			
Take no notice of it			
Others			

(ii) WHY DO THEY USE IT?

(iii) OR WHY DO THEY NOT USE IT?

(iv) WHAT SHOULD BE DONE TO MAKE THE INFORMATION MORE USEFUL TO THEM?

More consultation about the information
More discussions about objectives
More interpretations
Less information
More information
More follow-up
Less follow-up
Simplified information
Quicker information
Better relations
Expand the system
Abolish the system
Others.

APPENDIX 'C'

Tabulated Results of Guide Interview Questions.

This appendix is a tabulation of answers to the questions employed in interviews in order to measure managers' attitudes on certain aspects of budgetary control. In this respect, only questions concerning opinions or attitudes are tabulated.

The tabulation of managers' opinions for each question is given in two steps. First, the opinions of managers in Factories 'A', 'B', 'C' and 'D' of the Case Studies on a separate page. Second, the opinions of managers in Factories 'E', 'F', 'G' and 'H' of the Limited Investigations on the following page. This is presented in this way in order to show the results of the Case Studies and of the cross-checkings separately.

In each of the two tables managers' opinions for each factory are presented in the same way, in order to facilitate comparisons between the different factories. The total effect of each group of factories is included in each table. Moreover, the opinions of accountants are also included so that a contrast between accountants' and managers' views is shown. Under each table, the findings of each factory and of the Case Studies are summarised. Furthermore, the result of cross-checking the Case Studies' findings is also included.

As regards questions of participation, managers are divided into two groups: those who actually participated in setting their budgets or were consulted, and those who did not participate. This was thought advisable since each of the two groups of managers looks at participation from a different angle. The same rule is also observed in tabulating the questions concerning senior manager's follow-up. In this case managers are divided to those who are actually followed-up by their senior manager, and those who are not followed-up.

In a few cases, the responses of some managers were not tabulated as some of them believed budgetary control to be irrelevant to their jobs and others neiter participated in the preparation stage of their budgets, nor did they receive periodic information.

As a result of this, their opinions were excluded on the basis that if a manager does not know anything about budgets, it would not serve any useful purpose to tabulate his opinion on participation or follow-up or the accuracy of the budget since these opinions would be unrepresentative of the typical manager in the study. However, the study of their opinions in comparison with other managers proved to be helpful in establishing managers' use of their information and the factors which affect it.

Before presenting the tables which present managers' opinions, it may be advisable to give some definitions of the terms used.

DEFINITIONS:

a) The Accuracy of the Budget :

i) A practical budget: a budget which can be achieved if the manager exercises the normal efforts expected of him.

ii) A Little tight budget : a budget which is a little higher than practical in the case of production or sales and a little higher than practical in the case of cost. As such, it is achievable with more efforts than normal.

iii) Too tight budget: a budget which is very much higher than practical in the case of production or sales and very much lower than practical in the case of cost. As such it is difficult to achieve.

iv) A little loose budget : a budget which is a little lower than practical in the case of sales or production, and a little higher than practical in the case of cost. As such it is easy to achieve.

v) A too loose budget : a budget which is very much lower than practical in the case of sales or production and very much higher than practical in the case of cost. As such it is very easy to achieve.

b) Effect of Participation on manager's morale : whether participation improves or deteriorates manager's morale.(1)

c) Effect of Participation on Manager's Status : whether the manager's position in the organisation structure as he thinks his senior manager or the accountant consider it to be more important as a result of participation. (2)

d) Effect of Follow-up on Manager's Morale: whether senior manager's follow up improves or deteriorates the manager's morale.

e) Departmental-centredness : means that the manager is very much interested in his own department and is less interested in other departments of the factory.

f) Co-operation : The degree of which managers get together to achieve better targets and results.

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(1) Morale is "the state of motivational derives through which the individual (or group members) experiences confidence in his ability to achieve goals and to cope with future challenges". See Miller, C.D. and Form, W.H. Industrial Sociology; New York: Harper & Row, 1964, p.706.

(2) As to the definition of participation and follow up, see Appendix 'E', and as to the definitions of use of the budget see Appendix 'D'.

TABLE C_1

Importance of Manager's Participation.

"CASE STUDIES"

Do you consider your participation?

very important.
fairly important.
of little importance.
not important at all.
others.

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
very important	7	6	1	5	19
fairly important	2	-	1	1	4
(ii) who did not participate					
very important	1	1	8	-	10
fairly important	1	-	1	4	6
of little importance	1	-	-	-	1
not important at all	-	-	2	1	3
	12	7	13	11	43
ACCOUNTANTS					
very important	x	x	x	x	4

THEREFORE:

Factory A, B & C: Participation is very important in managers' and accountants' views.

Factory D: Participation is fairly important in managers' views, whereas it is very important in accountants' view.

THEREFORE, PARTICIPATION IS IMPORTANT IN MANAGERS' AND ACCOUNTANTS' VIEWS.

TABLE G_2

Importance of Manager's Participation

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
very important	4	3	4	7	18
fairly important	2	1	-	-	3
(ii) who did not participate					
very important	-	2	-	-	2
fairly important	-	-	-	2	2
	6	6	4	9	25
ACCOUNTANTS					
very important	-	x	x	x	3
fairly important	x	-	-	-	1

THEREFORE:

Factory E: Participation is very important in managers' views, whereas it is fairly important in accountant's view.

F, G, & H : Participation is very important in managers' and accountants' views.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION IS IMPORTANT IN MANAGERS' AND ACCOUNTANTS' VIEWS.

TABLE C_3

Effect of Participation on Accuracy of Budgets.

"CASE STUDIES"

Do you always put precisely the budget you will meet ?

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
a little tight	1	3	-	1	5
practical	8	3	2	3	16
a little loose	-	-	-	2	2
(ii) who did not participate					
fairly tight	-	-	-	1	1
a little tight	-	-	1	-	1
practical	2	-	6	3	11
a little loose	1	1	2	1	5
fairly loose	-	-	2	-	2
-	12	7	13	11	43
ACCOUNTANTS					
practical	x	x	x	x	4

THEREFORE:

Factory A: Participation results in a practical budget.

B: Participation results either in a practical or a little tight budget in managers' views, whereas it results in a practical budget in accountant's view.

C & D: Participation results in a practical budget.

THEREFORE, PARTICIPATION RESULTS IN A PRACTICAL BUDGET

TABLE C_4

Effect of Participation on Accuracy of Budgets.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
a little tight	-	1	-	-	1
practical	1	2	3	3	9
a little loose	5	1	1	4	11
(ii) who did not participate					
a practical budget	-	2	-	1	3
a little loose	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
a little tight	-	x	-	-	1
a practical budget	x	-	-	-	1
a little loose	-	-	x	x	2

THEREFORE:

Factory E: Participation results in a little loose budget in managers' views, whereas it results in a practical budget in accountant's view.

F: Participation results in a practical budget in managers' views, whereas it results in a little tight budget in accountant's.

G: Participation results in a practical budget in managers' views, whereas it results in a little loose budget in accountant's views.

H: Participation results in a little loose budget in managers' and accountants' views.

Thus there is a tie between the factories and the total effect. As a result, the total effect of the case studies and the limited investigations is taken.

THEREFORE, PARTICIPATION RESULTS IN A PRACTICAL BUDGET.

TABLE C_5

Effect of Participation on manager's morale

"CASE STUDIES"

How does the present form of participation affect your morale?

very good effect.
good effect.
bad effect.
very bad effect.
no difference.
others.

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
a very good effect	3	2	1	2	8
a good effect	6	3	-	4	13
no difference	-	1	1	-	2
(ii) who did not participate					
a very good effect	-	1	2	-	2
a good effect	1	-	4	-	6
no difference	2	-	5	5	12
	12	7	13	11	43
ACCOUNTANTS					
a very good effect	-	x	-	x	2
a good effect	x	-	x	-	2

THEREFORE:

Factory A : Participation has a very good effect on manager's morale in managers' and accountant's views.
B, C, & D : Participation has a good effect.

THEREFORE, PARTICIPATION HAS A GOOD EFFECT ON MANAGERS' MORALE IN MANAGEES' AND ACCOUNTANTS' VIEWS.

TABLE C_6

Effect of Participation on Manager's Morale.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
a very good effect	-	-	1	2	3
a good effect	6	3	2	4	15
no difference	-	1	1	1	3
(ii) who did not participate					
a good effect	-	2	-	1	3
no difference	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
a very good effect	-	-	x	x	2
a good effect	x	x	-	-	2

THEREFORE:

Factory E & F: Participation has a good effect on manager's morale.

G & H: Participation has a good effect in managers' opinions whereas it has a very good effect in accountants'.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION HAS A GOOD EFFECT ON MANAGERS' MORALE.

TABLE C_7

Effect of Participation on Manager's Status

"CASE STUDIES"

How does the present form of participation affect your status?

more status.
less status.
no difference.
others.

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
more status	7	3	2	3	15
no difference	2	3	-	3	8
(ii) who did not participate					
more status	1	1	4	1	7
no difference	2	-	7	4	13
	12	7	13	11	43
ACCOUNTANTS					
more status	x	x	x	-	3
no difference	-	-	-	x	1

THEREFORE:

Factory A & B: Participation gives the manager more status.
C: Participation does not affect status in managers' views whereas it furthers it in accountant's.
D: Participation does not affect manager's status.

Thus, there is a tie between the factories. As a result, the total effect is taken. However, the total effect is marginal.

THEREFORE, PARTICIPATION GIVES THE MANAGER MORE STATUS.

TABLE C_8

Effect of Participation on Manager's Status.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
more status	4	1	1	2	7
no difference	2	2	3	5	13
(ii) who did not participate					
more status	-	1	-	-	1
no difference	-	2	-	2	4
	6	6	4	9	25
ACCOUNTANTS					
more status	x	-	-	-	1
no difference	-	x	x	x	3

Factory E: Participation gives the manager more status.

F,G & H: Participation does not affect the manager's status.

Thus, in three factories participation does not affect manager's status, whereas in one it furthers it. Therefore, participation does not affect manager's status. As such, this limited investigation contradicts the case studies. However, as the result of the case studies is only marginal, therefore the total effect of all the eight factories is taken.

THEREFORE, PARTICIPATION DOES NOT AFFECT MANAGER'S STATUS.

TABLE C_9

Effect of participation on manager's interest in his budget.

"CASE STUDIES"

How does the present form of participation affect your interest in your budget?

very much interested.
fairly interested.
more interested.
less interested.
not interested at all.
no difference.
others.

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated:					
very much interested	4	3	-	4	11
fairly interested	1	-	-	-	1
more interested	3	3	2	2	10
no difference	1	-	-	-	1
(ii) who did not participate					
very much interested	1	-	3	-	4
fairly interested	1	-	-	2	3
more interested	-	1	6	1	8
no difference	1	-	2	2	5
	12	7	13	11	43
ACCOUNTANTS					
fairly interested	x	x	x	-	3
more interested	-	-	-	x	1

Factory A, B, C & D: Participation supports manager's interest in his budget.

THEREFORE, PARTICIPATION SUPPORTS MANAGER'S INTEREST IN HIS BUDGET.

TABLE C_{10}

Effect of Participation on manager's interest in his budget.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
very much interested	-	-	1	3	4
fairly interested	1	-	1	-	2
more interested	5	4	2	3	14
no difference	-	-	-	1	1
(ii) who did not participate					
very much interested	-	1	-	-	1
more interested	-	1	-	1	2
no difference	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
very much interested	x	-	x	-	2
fairly interested	-	-	-	x	1
more interested	-	x	-	-	1

Factory E, F, G & H: Participation supports and furthers manager's interest in his budget.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION SUPPORTS MANAGER'S INTEREST IN HIS BUDGET.

TABLE C_{11}

Effect of participation on manager's backing to his budget.

"CASE STUDIES"

How does the present form of participation affect your backing to the budget?

secure your full backing.
fair backing.
more backing.
less backing.
no backing at all.
no difference.
others.

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
full backing	3	5	-	2	10
fair backing	1	-	-	-	1
more backing	3	1	1	2	7
no difference	2	-	1	2	5
(ii) who did not participate					
full backing	2	-	4	2	8
fair backing	-	-	2	-	2
more backing	-	1	2	-	3
no difference	1	-	3	3	7
	12	7	13	11	43
ACCOUNTANTS					
full backing	-	-	-	x	1
more backing	-	-	x	-	1
no difference	x	x	-	-	2

Factory A, & B: Participation supports manager's backing to his budget in managers' opinions, whereas it does not affect it in accountant's view.

C & D: Participation supports manager's backing to his budget.

THEREFORE, PARTICIPATION SUPPORTS MANAGERS' BACKING TO HIS BUDGET.

TABLE G_{12}

Effect of participation on manager's backing to his budget.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
full backing	2	-	4	5	11
fair backing	4	1	-	-	5
more backing	-	2	-	1	3
no difference	-	1	-	1	2
(ii) who did not participate					
full backing	-	-	-	1	1
more backing	-	2	-	-	2
no difference	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
full backing	x	-	x	-	2
more backing	-	-	-	x	1
no difference	-	x	-	-	1

Factory E: Participation supports manager's backing to his budget.

F: Participation supports backing in managers' views whereas it does not affect it in accountant's view.

G: Participation secures manager's full backing to his budget.

H: Participation supports manager's backing to his budget.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION SUPPORTS MANAGERS' BACKING TO HIS BUDGET.

TABLE C_{13}

Effect of participation on manager's interest in his department.

"CASE STUDIES"

How does the present form of participation affect your interest in your department?

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS:					
(i) who participated					
very much interested	2	1	-	1	4
fairly interested	1	-	-	-	1
more interested	1	1	1	2	5
no difference	-	1	-	2	3
does not apply	5	3	1	1	10
(ii) who did not participate					
very much interested	2	-	1	-	3
fairly interested	-	-	-	1	1
more interested	-	-	3	-	3
no difference	1	1	5	3	10
does not apply	-	-	2	1	3
	12	7	13	11	43
ACCOUNTANTS					
fairly interested	x	x	x	-	3
more interested	-	-	-	x	1

Factory A: Participation supports manager's interest in his department.

B & C: It is difficult to deduce the effect according to managers' views, whereas it furthers manager's interest in his department according to the accountants.

D: Participation does not affect manager's interest in his department according to managers, whereas it furthers it in accountant's view.

Thus, there is no agreement between the factories. As a result, the total effect is taken.

THEREFORE, PARTICIPATION FURTHERS MANAGERS' INTEREST IN HIS DEPARTMENT.

TABLE C_{14}

Effect of Participation on manager's interest in his department.

"LIMITED INVESTIGATIONS"

How does the present form of participation affect your interest in your department?

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated:					
very much interested	-	-	1	3	4
fairly interested	1	-	1	-	2
more interested	5	4	2	2	13
no difference	-	-	-	2	2
(ii) who did not participate:					
very much interested	-	1	-	1	2
more interested	-	1	-	-	1
no difference	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
very much interested	-	-	x	-	1
fairly interested	x	-	-	-	1
more interested	-	x	-	-	1
no difference	-	-	-	x	1

Factory E, F & G: Participation furthers manager's interest in his department.

H: Participation furthers manager's interest in his department in managers' views, whereas it does not affect it in accountant's view.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION FURTHERS MANAGERS' INTEREST IN HIS DEPARTMENT.

TABLE C_{15}

Effect of Participation on
Departmental-Centredness.

"CASE STUDIES"

Does participation make you more or less department-centred?

very much departmental-centred.
fairly departmental-centred.
a little departmental-centred
more departmental-centred
less departmental centred
no difference
others.

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS:					
(i) who participated					
very much	-	-	-	1	1
fairly	1	1	1	-	3
more	-	-	-	1	1
a little	1	-	-	-	1
no difference	2	2	-	3	7
does not apply	5	3	1	1	10
(ii) who did not participate					
very much	1	1	3	2	7
fairly	1	-	6	1	8
no difference	1	-	-	1	2
does not apply	-	-	2	1	3
	12	7	13	11	43
ACCOUNTANTS					
fairly	x	x	-	-	2
a little	-	-	x	-	1
no difference	-	-	-	x	1

Factory A & C: Participation furthers manager's departmental-centredness.

B: It is difficult to deduce the effect in managers' opinions, whereas it furthers it in accountant's view.

D: Participation furthers manager's departmental-centredness in managers' views, whereas it does not affect it in accountant's view.

THEREFORE, PARTICIPATION FURTHERS MANAGER'S DEPARTMENTAL-CENTREDNESS.

TABLE C_{16}

Effect of Participation on Manager's Departmental-centredness.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS:					
(i) who participated					
very much	1	-	1	3	5
fairly	4	2	1	2	9
a little	1	1	1	-	3
more	-	-	-	2	2
no difference	-	1	1	-	2
(ii) who did not participate					
very much	-	1	-	-	1
a little	-	1	-	-	1
more	-	-	-	2	2
	6	6	4	9	25
ACCOUNTANTS					
very much	-	x	-	-	1
fairly	x	-	-	-	1
a little	-	-	x	-	1
no difference	-	-	-	x	1

Factory E, F & G: Participation furthers manager's departmental-centredness.

H: Participation furthers manager's departmental centredness in managers' views, whereas it does not affect it in accountants'.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION FURTHERS MANAGER'S DEPARTMENTAL-CENTREDNESS.

TABLE C_{17}

Effect of Participation on Cooperation between managers with the same status.

'CASE STUDIES'

How does participation affect your cooperation with other managers with the same status?

very much improve cooperation
fairly improve
a little improvement
very much deteriorate.
fairly deteriorate
a little deterioration
no difference
others.

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
very much improve	-	-	-	1	1
fairly improve	2	1	-	3	6
fairly deteriorate	-	1	-	-	1
a little deterioration	-	-	1	-	1
no difference	2	1	-	1	4
does not apply	5	3	1	1	10
(ii) who did not participate					
fairly improve	1	-	3	-	4
a little improvement	1	-	-	-	1
fairly deteriorate	-	1	1	-	2
no difference	1	-	5	4	10
does not apply	-	-	2	1	3
	12	7	13	11	43
ACCOUNTANTS					
no difference	x	x	x	x	x

Factory A: Participation improves cooperation according to managers whereas it does not affect it in accountant's view.
B: Participation deteriorates cooperation in managers' views whereas it does not affect it in accountants.
C & D: Participation does not affect cooperation.

Thus there is noagreement between the factories. In this case the total effect is taken.

THEREFORE, PARTICIPATION DOES NOT AFFECT CO-OPERATION BETWEEN MANAGERS WITH THE SAME STATUS.

TABLE C_{18}

Effect of Participation on Cooperation between Managers with the same status.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
fairly improve	-	1	3	1	5
a little improvement	1	1	-	-	2
a little deterioration	1	1	-	-	2
no difference	4	1	1	6	12
(ii) who did not participate					
fairly improve	-	-	-	1	1
fairly deteriorate	-	1	-	1	2
no difference	-	1	-	-	1
	6	6	4	9	25
ACCOUNTANTS					
a little improvement	-	-	x	-	1
a little deterioration	x	x	-	-	2
no difference	-	-	-	x	1

Factory E: Participation does not affect cooperation according to managers, whereas it deteriorates it according to the accountant.

F: It is difficult to deduce the effect according to managers' views, whereas it deteriorates it in accountant's view.

G: Participation improves cooperation.

H: Participation does not affect cooperation.

Thus, there is no agreement between the factories. As a result, the total effect is taken.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION DOES NOT AFFECT COOPERATION BETWEEN MANAGERS WITH THE SAME STATUS.

TABLE C_{19}

Effect of Participation on Cooperation
between the manager and his senior manager.

"CASE STUDIES"

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
very much improve	-	1	-	1	2
fairly improve	7	4	1	4	16
a little improvement	1	-	-	-	1
no difference	1	1	1	1	4
(ii) who did not participate					
fairly improve	-	1	1	1	3
a little improvement	1	-	-	-	1
no difference	2	-	9	4	15
fairly deteriorate	-	-	1	-	1
	12	7	13	11	43
ACCOUNTANTS					
fairly improve	x	x	-	x	3
a little improvement	-	-	x	-	1

Factory A & B: Participation improves cooperation with senior meneger.

C: Participation does not affect cooperation in managers' views whereas it improves it in accountant's.

D: Participation improves cooperation.

THEREFORE, PARTICIPATION IMPROVES COOPERATION BETWEEN THE MANAGER AND HIS SENIOR MANAGER.

TABLE C_{20}

Effect of Participation between the manager and his senior manager.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
fairly improve	-	1	3	2	6
a little improvement	1	2	-	-	3
no difference	5	1	1	5	12
(ii) who did not participate					
fairly improve	-	1	-	1	2
fairly deteriorate	-	1	-	-	1
no difference	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
fairly improve	-	-	x	x	2
a little deterioration	-	x	-	-	1
no difference	x	-	-	-	1

Factory E: Participation does not affect cooperation.

F: Participation improves cooperation in managers' views whereas it deteriorates it in accountant's.

G: Participation improves cooperation.

H: Participation does not affect cooperation in manager's views whereas it improves it in accountant's.

Thus, there is a tie; in this case the total effect is taken. Therefore, participation does not affect cooperation with senior managers. However, this is a marginal result. As such, this result does not support that of the case studies. However, as the total effect of the case studies and the limited investigation is in favour of the case studies' result, therefore this result stands.

THUS, PARTICIPATION IMPROVES COOPERATION BETWEEN THE MANAGER AND HIS SENIOR MANAGER.

TABLE C_{21}

Effect of participation on cooperation between the manager and his foremen.

"CASE STUDIES"

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
very much improve	-	-	-	1	1
fairly improve	1	2	-	3	6
no difference	3	1	1	1	6
does not apply	5	3	1	1	10
(ii) who did not participate					
fairly deteriorate	-	-	1	-	1
no difference	3	1	8	4	16
does not apply	-	-	2	1	3
	12	7	13	11	43
ACCOUNTANTS					
no difference	x	x	x	x	4

Factory A: Participation does not affect cooperation with foremen.

B: It is difficult to deduce the effect. However, the accountant thinks it does not affect it.

C & D: Participation does not affect cooperation.

THEREFORE, PARTICIPATION DOES NOT AFFECT COOPERATION BETWEEN THE MANAGER AND HIS FOREMEN.

TABLE C_{22}

Effect of participation on cooperation between the manager and his foremen.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
fairly improve	-	-	3	1	4
a little improvement	1	1	-	-	2
no difference	4	2	1	5	12
does not apply	1	1	-	1	3
(ii) who did not participate					
fairly improve	-	-	-	2	2
a little deterioration	-	1	-	-	1
no difference	-	1	-	-	1
	6	6	4	9	25
ACCOUNTANTS					
fairly improve	-	-	x	-	1
no difference	x	x	-	x	3

Factory E & F: Participation does not affect cooperation with foremen.

G: Participation improves cooperation with foremen.

H: Participation does not affect cooperation.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION DOES NOT AFFECT COOPERATION BETWEEN THE MANAGER AND HIS FOREMEN.

TABLE C_{23}

Effect of participation on cooperation between the manager and the accountant.

"CASE STUDIES"

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who partcipated					
very much improve	-	-	-	2	2
fairly improve	1	2	-	3	6
no difference	3	1	1	-	5
does not apply	5	3	1	1	10
(ii) who did not participate					
fairly improve	-	-	2	1	3
fairly deteriorate	-	-	1	-	1
no difference	3	1	6	3	13
does not apply	-	-	2	1	3
	12	7	13	11	43
ACCOUNTANTS					
very much improve	-	-	x	x	2
fairly improve	x	x	-	-	2

Factory A: Participation does not affect cooperation in managers' views whereas it improves it in accountant's.

B: It is difficult to deduce the effect according to managers' views. However, the accountant thinks participation improves cooperation.

C: Participation does not affect cooperation in managers' views whereas it improves it in accountant's.

D: Participation improves cooperation between the manager and the accountant.

THEREFORE, PARTICIPATION DOES NOT AFFECT COOPERATION BETWEEN THE MANAGER AND THE ACCOUNTANT

TABLE C_{24}

Effect of Participation on cooperation between the manager and the accountant.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS:					
(i) who participated					
fairly improve	1	1	3	1	6
a little improvement	1	-	-	-	1
no difference	4	3	1	6	14
(ii) who did not participate					
fairly improve	-	2	-	1	3
a little improvement	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
fairly improve	-	x	x	x	3
a little improvement	x	-	-	-	1

Factory E: Participation does not affect cooperation in managers' views whereas it improves it in accountant's.

F: It is difficult to deduce the effect according to managers' opinions, whereas it improves it in accountant's.

G: Participation improves cooperation.

H: Participation does not affect cooperation in managers' views, whereas it improves it in accountant's.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION DOES NOT AFFECT COOPERATION BETWEEN THE MANAGER AND THE ACCOUNTANT.

TABLE C_{25}

Effect of Participation on Budget Achievement

"CASE STUDIES"

How does the present form of participation affect the achievement of the budget?

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who participated					
use the budget extensively	-	1	-	-	1
achieve the budget	5	4	-	2	11
fair use of it	2	-	1	1	4
more use of it	1	-	-	2	3
no difference	1	1	1	1	4
(ii) who did not participate					
try to achieve the budget	-	-	4	1	5
fair use of it	1	-	-	1	2
more use of it	-	-	4	1	5
no difference	2	1	3	2	8
	12	7	13	11	43
ACCOUNTANTS					
Try to achieve it	-	-	-	x	1
fair use of it	-	-	x	-	1
no difference	x	x	-	-	2

Factory A & B: Participation supports budget achievement in managers' views, whereas it does not affect it in accountant's view.

C & D: Participation supports budget achievement.

THEREFORE, IN ALL FOUR CASEES, PARTICIPATION SUPPORTS BUDGET ACHIEVEMENT.

TABLE C_{26}

Effect of participation on budget achievement

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who participated					
extensive use of the budget	1	-	-	-	1
achieve better budget	-	-	-	1	1
achieve the budget	1	1	4	3	9
fair use of it	3	2	-	-	5
more use of it	-	1	-	-	1
no difference	1	-	-	3	4
(ii) who did not participate					
achieve the budget	-	1	-	1	2
fair use of it	-	1	-	-	1
no difference	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
Try to achieve it	-	-	x	x	2
fair use	x	-	-	-	1
more use	-	x	-	-	1

There is agreement between all the four factories.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION SUPPORTS BUDGET ACHIEVEMENT.

TABLE C_{27}

Effect of accuracy of the budget on its achievement.

"CASE STUDIES"
a) What do you think of the accuracy of the present budget?
b) How does this affect its achievement?

	FACTORY				TOTAL
	A	B	C	D	
a) The present budget					
MANAGERS					
too tight	-	-	2	1	3
fairly tight	-	-	1	-	1
a little tight	2	1	1	1	5
practical	9	6	7	5	27
a little loose	-	-	-	2	2
fairly loose	1	-	-	-	1
too loose	-	-	1	-	1
does not know	-	-	1	2	3
	12	7	13	11	43
ACCOUNTANTS					
a little tight	-	x	-	x	2
practical	x	-	x	-	2
b) Effect of achievement					
MANAGERS:					
achieve better budgets	4	2	4	-	10
achieve the budget	8	4	5	5	22
take no notice of it	-	-	3	4	7
no difference	-	1	-	-	1
does not apply	-	-	1	2	3
	12	7	13	11	43
ACCOUNTANTS					
try to achieve it	x	x	x	x	4

Thus in all four factories, REGARDING THE BUDGET AS PRACTICAL BY MANAGERS SUPPORTS ITS ACHIEVEMENT.

TABLE C_{28}

Effect of accuracy of the budget on its achievement.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
a) The present budget					
MANAGERS					
fairly tight	-	1	-	-	1
a little tight	2	-	-	2	4
practical	3	3	4	6	16
a little loose	1	-	-	1	2
does not know	-	2	-	-	2
	6	6	4	9	25
ACCOUNTANTS					
a little tight	-	-	x	x	2
practical	x	x	-	-	2
b) Effect on achievement					
MANAGERS					
achieve better budgets	2	1	2	1	6
achieve the budget	4	3	2	8	17
does not apply	-	2	-	-	2
	6	6	4	9	25
ACCOUNTANTS					
achieve better budgets	x	-	-	-	1
achieve the budget	-	x	x	x	3

THEREFORE, LIKE THE CASE STUDIES, IN ALL FOUR FACTORIES, REGARDING THE BUDGET AS PRACTICAL BY THE MANAGER SUPPORTS ITS ACHIEVEMENT.

TABLE C_{29}

Effect of follow up on communication of department's problems.

'CASE STUDIES"

Does the system of follow up help to communicate shop floor problems?

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who are followed up					
yes, it helps	9	6	6	5	26
no, it does not help	-	-	1	2	3
(ii) who are not followed up					
yes, it would help	3	1	2	3	9
no, it would not help	-	-	1	-	1
no difference	-	-	2	1	3
does not know	-	-	1	-	1
	12	7	13	11	43
ACCOUNTANTS					
yes, it does help	x	x	x	x	4

THUS IN ALL FACTORIES, FOLLOW UP HELPS TO COMMUNICATE DEPARTMENT'S PROBLEMS.

TABLE C_{30}

Effect of follow up on communication of department's problems.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who are followed up					
yes, it does help	2	4	4	8	18
no difference	1	-	-	-	1
(ii) who are not followed up					
yes, it would help	-	1	-	-	1
no, it would not help	3	1	-	1	5
	6	6	4	9	25
ACCOUNTANTS					
yes, it does help	x	x	x	x	4

Factory E: Follow up does not help to communicate the department's problems in managers' views whereas it does help in accountant's view.

F, G & H: Follow up helps to communicate the department's problems.

THEREFORE, LIKE THE CASE STUDIES, FOLLOW UP HELPS TO COMMUNICATE DEPARTMENT'S PROBLEMS.

TABLE C_{31}

Effect of follow up on use of budgetary information.

"CASE STUDIES"

How does follow up affect your use of the control information?

	FACTOR				TOTAL
	A	B	C	D	
MANAGERS					
(i) who were followed up					
extensive use	3	-	1	-	4
fair use	2	1	1	-	4
more use	4	3	5	5	17
no difference	-	2	-	2	4
(ii) who are not followed up					
extensive use	-	-	1	-	1
fair use	-	-	1	-	1
more use	1	1	1	3	6
no difference	2	-	3	1	6
	12	7	13	11	43
ACCOUNTANTS					
extensive use	-	-	-	x	1
more use	x	-	x	-	2
little use	-	x	-	-	1

THEREFORE, IN ALL FOUR CASES, FOLLOW UP SUPPORTS USE OF BUDGETARY INFORMATION.

TABLE C_{32}

Effect of follow up on use of
Budgetary information.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who are followed up					
extensive use	-	1	1	-	2
fair use	-	-	1	6	7
more use	3	2	1	1	7
little use	-	1	-	-	1
no difference	-	-	1	1	2
(ii) who are not followed up					
extensive use	-	1	-	-	1
more use	3	1	-	-	4
no difference	-	-	-	1	1
	6	6	4	9	25
ACCOUNTANTS					
fair use	-	-	x	-	1
more use	x	x	-	-	2
little use	-	-	-	x	1

THEREFORE, LIKE THE CASE STUDIES, IN ALL FOUR FACTORIES, FOLLOW UP SUPPORTS USE OF BUDGETARY INFORMATION.

TABLE C_{33}

Effect of follow up on manager's morale

"CASE STUDIES"

How does follow up affect your morale?

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who are followed Up					
a very good effect	-	-	1	-	1
a good effect	4	5	6	4	19
a bad effect	-	1	-	-	1
depends on its way	-	-	-	1	1
depends on achievement	3	-	-	-	3
no difference	2	-	-	2	4
(ii) who are not followed up					
a good effect	3	-	1	2	6
depends on its way	-	-	1	-	1
depends on achievement	-	-	1	-	1
no difference	-	1	3	2	6
	12	7	13	11	43
ACCOUNTANTS					
a good effect	-	x	x	x	3
no difference	x	-	-	-	1

Factory A: Follow up has a good effect on morale in managers' views, whereas it does not effect it in accountant's view.

B, C & D: Follow up has a good effect on morale.

THEREFORE IN ALL FOUR CASES, FOLLOW UP HAS A GOOD EFFECT ON MANAGER'S MORALE.

TABLE C_{34}

Effect of Follow up on manager's morale

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who are followed up					
a very good effect	-	-	-	2	2
a good effect	1	4	2	3	10
a bad effect	1	-	-	-	1
depends on achievement	-	-	-	2	2
no difference	1	-	2	1	4
(ii) who are not followed up					
a good effect	1	2	-	-	3
no difference	2	-	-	1	3
	6	6	4	9	25
ACCOUNTANTS					
a good effect	-	x	x	x	3
no difference	x	-	-	-	1

Factory E: Follow up does not affect manager's morale.

F: Follow up has a good effect on manager's morale.

G: It is difficult to deduce the effect. However, the accountant thinks it has a good effect on manager's morale.

H: Follow up has a good effect on morale.

Thus, there is no agreement between the factories, as a result, the total effect is taken.

THEREFORE, LIKE THE CASE STUDIES, FOLLOW UP HAS A GOOD EFFECT ON MANAGER'S MORALE.

TABLE C_{35}

Effect of follow up on cooperation between managers with the same status.

"CASE STUDIES"

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who are followed up					
fairly improve	2	2	2	3	9
fairly deteriorate	-	1	-	-	1
no difference	2	-	2	2	6
does not apply	5	3	3	2	13
(ii) who are not followed up					
fairly improve	-	-	-	2	2
fairly deteriorate	-	-	1	-	1
no difference	3	1	5	2	11
	12	7	13	11	43
ACCOUNTANTS					
fairly improve	-	-	x	-	1
no difference	x	x	-	x	3

Factory A: Follow up does not affect cooperation.

B: Follow up improves cooperation in managers' views whereas it does not affect it in accountant's.

C: Follow up does not affect cooperation in managers' views, whereas it improves it in accountant's view.

D: Follow up improves cooperation in managers' views whereas it does not affect it in accounrant's.

Thus, there is a tie, as a result the total effect is taken.

THEREFORE, FOLLOW UP DOES NOT AFFECT COOPERATION BETWEEN MANAGERS WITH THE SAME STATUS.

TABLE C_{36}

Effect of follow up on cooperation between managers with the same status.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who are followed up					
fairly improve	-	1	3	1	5
a little improvement	-	1	-	-	1
no difference	3	2	1	7	13
(ii) who are not followed up					
fairly improve	-	1	-	-	1
a little improvement	1	-	-	-	1
a little deterioration	1	-	-	-	1
no difference	1	1	-	1	3
	6	6	4	9	25
ACCOUNTANTS					
fairly improve	-	x	x	-	2
a little improvement	-	-	-	x	1
no difference	x	-	-	-	1

Factory E: Follow up does not affect cooperation.
F: There is a tie in managers' opinions. However, the accountant thinks it improves cooperation.
G: Follow up improves cooperation.
H: Follow up does not affect cooperation in managers' opinions whereas it improves it in accountant's view.

Thus, there is no agreement between the factories, as a result the total effect is taken.

THEREFORE, LIKE THE CASE STUDIES, FOLLOW UP DOES NOT AFFECT COOPERATION BETWEEN MANAGERS WITH THE SAME STATUS.

TABLE C_{37}

Effect of follow up on cooperation between the manager and his senior manager.

"CASE STUDIES"

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who are followed up					
fairly improve	5	4	6	4	19
fairly deteriorate	-	1	-	-	1
no difference	4	1	1	3	9
(ii) who are not followed up					
fairly improve	1	-	-	1	2
fairly deteriorate	-	-	1	-	1
no difference	2	1	5	3	11
	12	7	13	11	43
ACCOUNTANTS					
fairly improve	-	-	x	-	1
a little improvement	-	-	-	x	1
no difference	x	x	-	-	2

Factory A: It is difficult to deduce the effect according to managers' views, whereas it does not affect it in accountants.

B: Follow up improves cooperation according to managers' views whereas it does not affect it in accountants.

C: There is a tie in managers' views whereas the accountant thinks it improves it.

D: Follow up does not affect cooperation in managers' views whereas it improves it in accountant's view.

Thus, there is no agreement between the factories, as a result the total effect is taken. However, the total effect is marginal in this case.

THEREFORE, FOLLOW UP IMPROVES COOPERATION BETWEEN THE MANAGER AND HIS SENIOR MANAGER.

TABLE C_{38}

Effect of follow up on cooperation between the manager and his senior manager.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who are followed up					
fairly improve	-	1	3	3	7
a little improvement	-	2	-	-	2
no difference	3	1	1	5	10
(ii) who are not followed up					
fairly improve	1	2	-	-	3
no difference	2	-	-	1	3
	6	6	4	9	25
ACCOUNTANTS					
fairly improve	-	x	x	-	2
a little deterioration	-	-	-	x	1
no difference	x	-	-	-	1

Factory E: Follow up does not affect cooperation.

F & G: Follow up improves cooperation.

H: Follow up does not affect cooperation in managers' opinions whereas it deteriorates it in accountant's view.

Thus, there is no agreement between the factories, as a result the total effect is taken, which is follow up does not affect cooperation. However, this is marginal. As the two conclusions of the case studies and the limited investigations are marginal, therefore the total effect of all the factories is taken. However there is another tie in managers' views.

THEREFORE IT IS DIFFICULT TO DEDUCE THE EFFECT OF FOLLOW UP ON COOPERATION BETWEEN THE MANAGER AND HIS SENIOR MANAGER.

TABLE C_{39}

Effect of follow up on cooperation between the manager and his foremen.

"CASE STUDIES"

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who are followed up					
very much improve	-	1	-	-	1
fairly improve	-	1	2	3	6
no difference	4	1	2	2	9
does not apply	5	3	3	2	13
(ii) who are not followed up					
fairly improve	-	-	-	1	1
fairly deteriorate	-	-	1	-	1
no difference	3	1	5	3	12
	12	7	13	11	43
ACCOUNTANTS					
no difference	x	x	x	x	4

Factory A: Follow up does not affect cooperation.

B: There is a tie in managers' opinions, whereas the accountant thinks it does not affect it.

C & D: Follow up does not affect cooperation.

THEREFORE, FOLLOW UP DOES NOT AFFECT COOPERATION BETWEEN THE MANAGER AND HIS FOREMEN.

TABLE C_{40}

Effect of follow up on cooperation between the manager and his foremen.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who are followed up					
fairly improve	-	-	2	1	3
no difference	3	3	2	5	13
does not apply	-	1	-	2	3
(ii) who are not followed up					
fairly improve	1	1	-	-	2
no difference	1	1	-	1	3
does not apply	1	-	-	-	1
	6	6	4	9	25
ACCOUNTANTS					
a little improvement	-	x	x	-	2
no difference	x	-	-	x	2

Factory E: Follow up does not affect cooperation.

F: It does not affect cooperation in managers' views whereas it improves it in accountant's view.

G: There is a tie in managers' opinions, however, the accountant thinks it improves cooperation.

H: Follow up does not affect cooperation.

THEREFORE, LIKE THE CASE STUDIES, FOLLOW UP DOES NOT AFFECT COOPERATION BETWEEN THE MANAGER AND HIS FOREMEN.

TABLE C_{41}

Effect of follow up on cooperation between the manager and the accountant.

"CASE STUDIES"

	FACTORY				TOTAL
	A	B	C	D	
MANAGERS					
(i) who are followed up					
very much improve	-	1	-	-	1
fairly improve	-	-	3	2	5
no difference	4	2	1	3	10
does not apply	5	3	3	2	13
(ii) who are not followed up					
a little improvement	-	-	-	1	1
fairly deteriorate	-	-	1	-	1
no difference	3	1	5	3	12
	12	7	13	11	43
ACCOUNTANTS					
fairly improve	-	-	x	x	2
no difference	x	x	-	-	2

Factory A & B: Follow up does not affect cooperation.

C & D: Follow up does not affect cooperation in managers' views, whereas it improves it in accountants' views.

THEREFORE, FOLLOW UP DOES NOT AFFECT COOPERATION BETWEEN THE MANAGER AND THE ACCOUNTANT.

TABLE C_{42}

Effect of follow up on cooperation between the manager and the accountant.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
MANAGERS					
(i) who are followed up					
fairly improve	-	1	2	1	4
a little deterioration	-	2	-	-	2
no difference	3	1	2	7	13
(ii) who are not followed up					
very much improve	1	-	-	-	1
fairly improve	1	1	-	-	2
no difference	1	1	-	1	3
	6	6	4	9	25
ACCOUNTANTS					
fairly improve	-	-	x	x	2
a little deterioration	-	x	-	-	1
no difference	x	-	-	-	1

Factory E: Follow up does not affect cooperation.

F: There is a tie in managers' views. However, the accountant thinks that follow up deteriorates cooperation. In this particular case, this is true.

G: There is a tie in managers' views. However, the accountant thinks it improves cooperation.

H: Follow up does not affect cooperation in managers' views, whereas it improves it in accountant's view.

The total effect is that follow up does not affect cooperation.

THEREFORE, LIKE THE CASE STUDIES, FOLLOW UP DOES NOT AFFECT COOPERATION BETWEEN THE MANAGER AND THE ACCOUNTANT.

APPENDIX 'D'

DETAILED ANALYSIS OF MANAGERS' USE OF BUDGETARY INFORMATION.

The object of this appendix is to present a detailed analysis of managers' use of budgetary information. It presents the definition of use, the detailed method and illustration of establishing use, and the factors which affect it.

It is divided into three sections :

Section 1: presents the definitions of use.

Section 2: presents the methods of establishing use, with a detailed illustration.

Section 3: presents the method of identifying and establishing the factors which affect use, with a detailed illustration.

SECTION 1: DEFINITIONS

Before defining use of budgets it is necessary to define a shop floor manager and a senior manager as they will be used in the definition of use of budgets.

a) Managers: are classified into two groups only, top or senior managers and shop floor managers.

i) A Shop Floor Manager: is the manager or foreman who is responsible for a section, department, area or service and who is the lowest level of management who is directly involved in the budgetary process, either through participating in budget setting or receiving information about his responsibility budget or both. These are often called foremen or departmental managers in production and services departments, whereas they are called sales representatives or managers in the sales department.

These managers have been chosen as the focus of the study as they are the managers who are concerned with the actual control process whereas top managers are primarily concerned with planning the future activities of the business. This has been stressed in the productivity team report (1) "Senior management pays far more attention to forecasts than to past results. It is interested in the latter chiefly as a means of setting targets for the future and controlling subordinates. The nearer a manager is to the shop floor or to the customer, the more he is interested in current results as a guide to immediate action and because he knows that his effectiveness will be judged by his success in reaching the target".

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(1) Productivity Team Report, op cit. p.9, para. 28.

ii) A Top or a Senior Manager: is the manager who is not responsible for one section or department, but rather is responsible for the whole company or a major part thereof, such as directors, sales managers, works manager and production manager. Thus, his main job is not to produce, sell, or provide a service, but rather to supervise or direct shop floor managers.

b) Theoretical Use of the Budget:

i) A shop floor manager should use his budget in order to achieve the planned performance be it production or sales and to watch or reduce his cost. As such, there are two stages of theoretical use :

First: After the planning stage of the budget in trying to achieve the planned performance and watch the cost. Thus, use here includes the manager's effort to achieve his budget be it performance, cost, or both.

Second: After he receives the periodic information through comparing actual results with the budget, identifying the main problem areas, and controlling the significant deviations through minimising them in the future periods. Thus, the second stage of use is an evaluation of the effort exerted by the manager in the first stage in order to achieve his budget.

In sum, manager's use of his budget and information implies the effort exerted by him to achieve his budget through preventing deviations to happen which is a control before the event, and to minimise the effect of deviations in future periods which is a control after the event. It must be emphasised, however, that the first stage of use is more significant than the second.

ii) A senior or a top manager on the other hand, should use his budget in two stages; first after the planning stage to guide and help shop floor managers to achieve their budgets, and second after receiving the information to follow up subordinates; shop floor managers.

Thus, unlike shop floor managers, senior manager's use is more significant in the second stage of use rather than the first stage.

c) Limited Use of the Budget

Limited use is affected if a manager uses only his performance budget and not his cost budget or the other way round, or if he uses his budget but does not use the information, or if he uses the information and does not use his budget, or finally if he uses only a limited part of the information. Thus, limited use is a transitional stage between ignoring the budget altogether and using it in the theoretical use. In effect, it is a theoretical use but limited in extent.

d) Non-Use of the Budget

Non-use of the budget is effected when the manager ignores his budget and information altogether and uses his experience or any other media as an alternative for control. Moreover, non-use may even be effected if he does not use his experience at all. In the case of a senior manager, non-use is effected if he does not follow up his subordinate managers on the basis of the information. Thus, non-use is the other extreme of the theoretical use of the budget.

SECTION 2: ESTABLISHMENT OF MANAGER'S USE OF THE BUDGET:

Manager's use of his budgetary information is established in each case through taking each manager as a case study in himself and looking at him rather than the budget. In fact use has been established as a result of collating the following pieces of evidence together :

a) through a study of the department's figures in order to establish whether the deviations in the department's actual performance from budget are in a state of control; deviation being reasonable in extent and random in movement.

b) through interviewing the manager concerned in order to get the facts of the control system concerned and to measure the manager's opinions or attitudes to this specific system, taking the present budget as a representative sample of the system.

c) through horizontal and vertical cross-checking with other managers who belong to the same system, with their senior manager and with the accountant, in order to cross-check facts and opinions expressed in the manager's interview.

d) through personal observations of the manager concerned to see whether he understands his budget and gets in touch with the accountant, etc.

However, it must be emphasised that each piece of evidence is complementary to the others, and it was only through living with the real situation that the research worker was able to weigh the different pieces of evidence and establish whether each manager uses his budget or not.

In many instances, it has been proved that to depend on one of these elements alone results in the wrong conclusion, for example a manager's departmental figures in comparison with others showed that the departmental deviation is under control. However, interviewing the manager himself proved that his budget was too easy to achieve and moreover he did not understand which deviations are favourable and which are unfavourable. Therefore, the first impression that one may get as a result of seeing the departmental figures is proved wrong through interviewing the manager himself.

Moreover, if there is a contradiction between the different pieces of evidence, a deduction is reached as a result of weighing all the pieces of evidence together. This was only possible because the research worker was able to work from within the organisation and as such knew the managers concerned. Furthermore, as a result of cross-checking each piece of evidence with other managers, senior managers and the accountant, it was fairly simple to see which piece of evidence was false and which was true.

As a result of this method manager's use or otherwise of the budgetary information was established. The next step in the analysis is to present how this was established in Factory 'A' as an example which has been followed in all the other factories.

The step taken after concluding the field research for the case study was to analyse the information obtained. As mentioned before, the information came about mainly from three sources: documents, interviews and personal observations.

As a result of taking each manager as a case study in himself, each manager's interview needed to be tabulated in a way which observes two principles: first, to observe the individuality of the manager as a case study and second to facilitate tabulations of all managers together, so that deductions can be made on the basis of the manager himself and for all the managers in each factory.

In order to achieve this the questionnaire was simplified and rearranged as follows :

1. Participation

Did he participate?

Why?

Is it important?

Is he satisfied?

If not, what from?

Does he take budgets prepared by senior manager seriously?

Does he take budgets prepared by accountant seriously?

Authority to reject budgets

Is he satisfied with it?

2. Accuracy of Budgets

Basis of the Budget

Accuracy of the present budget

How does this affect the achievement?

Does he have confidence in it?

Does he take interest in it?

3. Effect of Participation on :

Accuracy of Budgets

Manager's morale

status

interest in his budget

backing to the budget

interest in his department

Departmental-centredness

Cooperation with other managers

with his senior manager

with his foremen

with the accountant

Budget achievement

4. Training

General education and background

Training to prepare a budget

Satisfied with it

If not, what does he suggest?

How long has he been participating in budgets?

or how long has he been getting the information?

5. Relevance of Cost

What is the relative position of Cost?

6. Information

Relevance of information to important features
" " " to Department's problems
Adequacy of the information
Is it controllable?
Often enough?
Quick enough?
Easy to understand?
Satisfied with presentation?
Consulted about it?
Should he?
Can he change it?
Did he?
Does he have confidence in it?
Does he take interest in it?

7. Accountant's role as an interpreter

Is the information new to the manager?
Are there interpretations to follow the information?
Is the information discussed with the Accountant?
Should there be an Accountant's following up?

8. Managerial Following-up

Does Senior Manager regard the system important?
Why?
How does he react if budgets are not met?
How does the system affect manager's feeling of security?
Is the manager followed up?
Satisfied with it?

9. Effect of Following-up

Communication of departments problems
Use of information
Manager's morale
cooperation with other managers
with his senior manager
with his foremen
with the accountant

10. Use of the Information

How does the system affect you generally?

Is the system important?

Why?

What is the effect of the system on his department?

How does he use the information?

Why?

How much time does he spend on it?

Why not too much?

Is the information worthwhile to him?

How to improve the system?

All managers interviews were tabulated in the same way with a distinction between responses which concern the tabulated questions and other responses given freely by the manager. These latter responses are presented under the heading "open comments". For example, Manager 'X' interview in Factory 'A' was tabulated as follows :

FACTORY 'A' - MANAGER 'X' INTERVIEW RESPONSES:

1. Participated
Part of my job
Very important
Satisfied
Fairly seriously
Fairly seriously
D/A
D/A

2. Last year's figures
A practical budget
Achieve a lower cost budget
Fair confidence
A great deal of interest

3. A practical budget
A good effect
No difference
Fairly interested
Fair backing
No difference
No difference
Fairly improve
" "
" "
" "
More use

4. Professional qualification
No practical experience
Satisfied
10 years

5. Cost is as important

6. Wholly relevant
Wholly relevant
Adequate enough
Partly controllable
Often enough
Quick enough
Easy to understand
Satisfied
Consulted
Yes
Yes

6 (cont.)

No

Fair confidence

A great deal of interest

7. I have an idea

No

I query it sometime

Yes

8. Very important

Target x Planning

Don't know

No difference

Don't know

Satisfied

9. Yes, it would help

No difference

Good effect

No difference

Fairly improve

No difference

No difference

10. Welcome it

Very important

Target x Information

Improve productivity, cost, planning x control

Know reasons of excess expenses

To run the department economically

Little time

Don't need to

Yes

Improve sales forecast

Open Comments :

I normally prepare it; based on last year's figures. Economics of the job is as important as the technical side. Consultation with production people after I prepare it (is the best form of participation).

If it is a poor trading year, this would give me the incentive to cut (cost) as much as possible until a better time. I try to keep my budget when things are better, cut it if trade conditions are bad. Keep my budget in relation to the profitability of the company. I have been consulted all the time. I have seen no other way. I expect to be consulted with this job. It goes with the job. I have not any formal training in budgets. It is only practical experience. It took a short while to prepare this budget.

Senior management's reaction depends on the trading conditions. If trading position is not so good they expect you to be within your budget.

Information to prepare a budget is not accurate enough on the conditions of this trade. Sales budget is loose 10% or 15%. It cannot be helped in this industry.

I can guess before the month how much will the cost be. Information gives me a general indication of the flow in the plant. The information does not distinguish between what is controllable and uncontrollable. It lists all the items. I know what is controllable and what is not. I get monthly information, a week after the month. I go up (to the accountant) and assess the situation when it approaches the end of the month. I have an idea about the information, checking weekly labour cost. Information is self explanatory. I query it sometime. Someone on the board may look at the figures. I do not know (if there is a system of following up). Queries come from the accountant.

I look at the overall picture, know reasons of excess expenses. I try to run the department economically to keep machines running as long as possible at least cost. The information is worthwhile as it shows me how I am running the department economically.

As a result of this interview, the following deductions are made :

1. The manager is responsible for one budget, which concerns cost.
2. The manager has prepared his budget and is satisfied with his participation.
3. The manager thinks that his budget is practical and has confidence and interest in it.
4. The manager is highly educated (professionally qualified) and has long experience in budget-setting.
5. The manager is satisfied with the information provided to him.
6. The manager initiates interpreation by going to the accountant to query figures.
7. The accountant does not work as an interpreter.
8. The manager thinks the accountant should work as an interpreter.
9. Does not know whether there is a system of follow up by senior manager or not.
10. Has a favourable attitude towards budgetary control since he thinks it is wholly relevant to his job and in his attitude of associating his department's performance to the overall performance of the factory.

11. Has a favourable attitude towards participation, senior manager's follow, the accountant's role as an interpreter, and use of budgetary information.

12. The manager uses his budget to try to reduce cost or keep within the budget and uses the periodic information to see how well he has been successful in achieving his budget. Thus, the manager concerned claims to use his budgetary information in accordance with the theoretical model.

As a result of cross-checking these with the other manager's, accountant's and senior manager's interviews, and as a result of personal observation, these deductions have been confirmed except for the following :

1. <u>Senior Manager's Follow up</u>:

a) The senior manager concerned has unfavourable attitude to cost budgets although he has a favourable attitude to performance budgets as he thinks, and this is rightly so to a great extent, that volume matters much more than cost in this industry.

b) As a result of this attitude, he does not follow up managers on the basis of cost budgets and information. This has been confirmed as a result of interviewing all the managers who are responsible to him and who are responsible for cost budgets. For although he said he follows managers up on cost budget as a result of weighing the two pieces of evidence together, the managers evidence outweighed the senior manager's. In this case the accountant's evidence is of no value as he said that he does not know whether the senior manager follows up his managers or not, but he supposes so.

c) Furthermore, it has been ascertained that there is a system of formal follow up which is conducted in a management meeting. However, as a result of attending the meeting, it was soon found out that this is not a follow up system as far as cost budgets are concerned. What actually happened in the meeting was that the senior manager concerned read the overall performance of the factory's figures, the periodic revenue account, without any discussion whatsoever of departmental figures and performances. Thus, the main advantage of the meeting is to put the manager in the picture as far as the factory's profit or loss is concerned.

d) On the basis of gathering all these pieces of evidence together, it has been found that there is no effective system of follow up. Thus, the manager concerned is not followed up on the basis of his cost budget and information.

2. Accountant's role as an interpreter:

As a result of interviewing the accountant, it has been found that the accountant does not work as an interpreter except for senior managers. In fact, what happens is if the manager on his own initiative asks for an interpretation of certain items, he gets it, and if he does not the accountant in this case does not provide the interpretation service. Thus, the interpretation service as far as managers are concerned informal and initiated by the manager concerned.

3. Participation:

As a result of cross-checking the manager's interview with the accountant's interview and studying the draft budgets and comparing the hand writing, it has been ascertained that the manager concerned has been consulted in the preparation stage of his budget and did not participate as he claims.

4. Use:

As a result of cross-checking his evidence with that of the accountant, it seems that the manager concerned uses his budget. Senior manager's evidence here is of limited value as he does not follow up the manager concerned, so his evidence is an opinion and not a fact. However, his opinion confirms that of the manager and the accountant. Moreover, through looking at the figures, this seems to give the indication that the deviations are reasonably under control (excluding the abnormal deviations which are accepted by the accountant as uncontrollable items by the manager).

As a result of putting all these pieces of evidence together, it seems that the manager uses his budget in accordance with the theoretical model of use.

This, however, may be criticised on the basis that use is ascertained on the basis of the manager's interview and as such the research worker was in the realm of opinion and not fact. Although on the face of it this may be true, in fact this is not entirely so, since the manager's claims were cross-checked by the accountant, the senior manager, the department's figures, and the personal observation of the research worker. Moreover, it must be added that the establishment of manager's use of the information was one of the most difficult parts of the study. However, it was only through working from within the organisation and living with the real situation that the research worker was able to establish use in this way.

This method was arrived at after experimenting with departmental figures statistically. However, it must be emphasised that all methods available are indications of use, as manager's use of the information cannot be established factually and precisely since it is intangible and cannot be seen.

The methods available either to establish it on facts or opinions or both. If one takes the first approach, this can be done tangibly through a statistical analysis of the departmental performance figures.

In fact, departmental figures were taken for eighteen months in Factory 'C', and were treated statistically to see whether the manager uses his budget or not on the basis of whether the deviations are under control or not. This proved to take a long time for one factory, and meanwhile did not by itself answer the question whether managers' use the information or not. In fact, although the researcher was kindly permitted to use the University computing service, the calculations took too long and the effort proved to be unworthy of the results obtained. For this information again needed to be cross-checked to see whether the manager uses his budget or not. In fact, the results were interesting but contradictory to facts. The manager may not exert any effort at all and at the same time have his deviations under control because the budget was too easy to achieve at the beginning. As a matter of fact, this was the case with some managers. In one instance, the manager concerned did not get the information and did not know his budget, and in spite of this, his deviations according to the computer's programme were under control. So although logically he could not have used his budget, the statistics indicate that he does.

As a result of this it was decided that studying the figures in depth does not pay, and is not by itself a reliable method to establish manager's use. Therefore, an alternative method of interviewing the manager, and cross-checking his claims with the accountant, the senior manager, the general pattern of the departmental figures and the observations of the research worker were taken as the criteria to establish use. Although this is not a perfect method, it was the only logical alternative at the time.

As a result of applying this method of analysis to all managers in Factory 'A', it was found that out of the twelve managers who are responsible for the budgetary programme and who were studied, only three used their budgets in accordance with the theoretical model, six made a limited use of their budgetary information, and three did not use them at all.

SECTION 3: ESTABLISHMENT OF THE FACTORS WHICH AFFECT USE

The next step after establishing use is to establish the factors which affect managers' use of budgetary information. Factors were identified in this way:

a) The analysis of the original open interviews with managers, senior managers and the accountants in the first group of factories studied, A, B, C, and D, provided a set of factors which managers thought to support or hinder use.

b) The factors were then cross-checked in another group of factories working under completely different set of circumstances, E, F, G, and H, in order to make sure that these factors do not belong to a certain set up, and that they did not come by chance. As a result of this, the same factors were identified.

c) On the basis of these findings, hypotheses were constituted as to which factors establish, which factors support use and which factors hinder them.

d) The hypotheses were then tested and proved in the final stage of the empirical study.

The next step in the analysis is to show how the factors behind use or non-use were established, taking Factory 'A' as an example, since the method was adopted in the same way in all the other factories.

Again, the basis of the factors in this case is the manager's interview. The first step after analysing the interview is to cross-check the information provided in the manager's interview with the other managers who belong to the same control system, production, sales or services.

Moreover, the manager's interview was cross-checked with senior manager's and accountant's interviews in order to establish the facts of each control system which relates to a certain budget with each manager being taken as a case study in himself. The next step was to list all the circumstances in which each manager is working and the facts of each control system. This provides a set of factors for each manager. Then, by comparing all the managers who belong to the same system first with each other and second with other managers who belong to the other control systems, the factors were identified.

It must be emphasised, however, that a distinction was drawn throughout the analysis between factors which are largely responsible for establishing manager's use and the other factors which support it. Furthermore, the way in which the manager uses his budgetary information seems to indicate to a certainextent the main reasons behind his use. For example, it was found that most managers who use the information in a limited sense use only those parts which are followed up by their senior manager and do not use those parts which are not followed up. This seems to suggest that manager's use here is due mainly to senior manager's follow up. In this case the other favourable factors would be taken as supporting factors to use whereas the other unfavourable factors would be taken as to limit use.

The results of applying this method to the managers of Factory 'A' are outlined, taking manager 'X' as an example.

Manager 'X' is a service manager. Three service managers, 'X', 'Y' and 'Z' were studied. As a result of applying the same method of analysis, it was found that managers 'X' and 'Y' use their budgets whereas manager 'Z' does not. In fact, the circumstances in which managers 'Y' and 'Z' are working are similar to that of manager 'X' except for the following :

Manager 'Y'

1. The manager was not consulted about his budget at the preparation stage. Moreover, he has no authority to reject the budget figures and is not satisfied with either of his participation or rejection of the budget. However, he accepts his budget as a practical one and has confidence and interest in it.

2. The manager is highly educated, professionally qualified, had training, and long experience in budgets.

3. Like manager 'X', however, manager 'Y' is not followed up by his senior manager. Manager 'Y' is, however, dissatisfied with not being follow up as he feels that his efforts to achieve his budget are not recognised.

4. Unlike manager 'X', he thinks that the accountant should not work as an interpreter.

5. Thinks that his budget is wholly relevant to his job, accepts it since it comes through higher authority and works by it.

6. However, like manager 'X', he uses his budget first to plan his expenditure to be within the budgeted figure and uses his information to check his actual performance against his budget.

Thus, to sum up, like manager 'X', manager 'Y' is highly educated, has a long experience in budgets, accepts his budget as practical, is satisfied with the information, is not followed up by his senior manager, and the accountant does not work as an interpreter. However, unlike manager 'X', he did not participate in the preparation stage of his budget, he had training in budgets and does not think that the accountant should work as an interpreter, and is dissatisfied with not being followed up by his senior manager.

However, like manager 'X', manager 'Y' uses his budgetary information in accordance with the theoretical model.

Manager 'Z'

Manager 'Z', unlike other managers, does not use his budgetary information. The circumstances in which he is working are as follows :

1. The manager is responsible for one budget which concerns cost.
2. The manager was consulted at the preparation stage of his budget. However, he thinks that he has prepared his own budget.
3. The manager thinks that his budget is practical and has confidence and interest in it.
4. He has no intermediate or high education, no training in budgets, and little experience in budgets.
5. The manager is satisfied with the information provided to him.
6. The manager does not initiate interpretation as from the accountant.
7. The accountant does not work as an interpreter.
8. The manager thinks that the accountant should not work as an interpreter.
9. There is no system of follow-up by senior manager.
10. In comparison of the same manager in the two years under study, it seems that the manager understands his budgetary information better than the first year. The only factor which has changed is the manager's participation in the preparation of his budget.

11. The manager does not use his budgetary information at all for control.

Thus, to sum up, under service managers' control system, there are three managers, two are using their budgetary information in accordance with the theoretical model, and one does not use his budgetary information at all.

The question now is; why managers 'X' and 'Y' use their budgetary information whereas manager 'Z' does not?

According to the hypotheses based on the first and second stages of the study, a manager uses his budgetary information mainly either as a result of senior manager's follow-up, or high degree of appreciation of budgets as a result of high education or as a result of participation in budget-setting.

Taking these hypotheses one by one, and putting them to the test in each case, proves that :

First: As the senior manager in the three cases does not follow up the three subordinate managers on the basis of the information, so this factor cannot logically establish use in the two cases of managers 'X' and 'Y'.

Second: As to participation in budget-setting, this does not seem to establish use, as by comparison manager 'X' has participated and uses his budget whereas manager 'Z' has participated and does not use his budget, and manager 'Y' has not participated and uses his budget. Therefore, managers 'X' and 'Y' use of the information cannot logically be attributed to participation in budget-setting.

Third: As to education, this seems the most logical factor which establishes use in the two cases of 'X' and 'Y', as in the two cases the managers concerned are highly educated and use their budgets. Moreover, in the third case of manager 'Z', the manager concerned is not highly educated and does not use his budget. Therefore, managers 'X' and 'Y' use of their budgets is mainly due to high education whereas manager 'Z' non-use is due to poor education. Although it was true to say that manager 'Z' non-use is due to poor education in the first year of the study, this is not necessarily true in the second year under the study since the manager in the second year understands his budgetary information more fully. Thus, his non-use in this case is mainly due to non-follow up and not poor education.

In this case, all the other favourable factors such as participation, training, long experience in budgets, are taken as supporting factors to use, whereas the unfavourable factors of non-follow up, long experience without budgets, lack of training in budgets, and non provision of the interpretation service by the accountant support non-use.

The other managers on the production and sales side were treated in the same way. As a result, it has been found that of the four managers on the production side, two managers use the production budget information whereas they do not use the cost budget information. Moreover, the other two managers neither use their production nor their cost budgets. The factors were identified in the same way as under the service managers. As a result, it has been found that one manager uses his budget as a result of high education, the other uses it as a result of both high education and follow up, whereas the other two managers do not use their budgets as a result of poor education.

As a result of applying the same method of analysis to the five managers on the sales side, it has been found that one of them uses his sales and cost budgets in accordance with the theoretical model, whereas the other four managers use their sales budgets only. The factors which establish use were identified, as a result it has been found that the five managers use their budgets in this case mainly as a result of senior manager's follow up.

The comparison and collation of the findings of the three systems; production, services and sales, resulted in the findings of Factory 'A'. The same method of analysis was adopted in all the other factories. The results of Factories 'A', 'B', 'C' and 'D' of the case studies are presented in table D_1, and the results of Factories 'E', 'F', 'G' and 'H' of the limited investigations are presented in table D_2.

TABLE D_1

Extent and Main Factors Behind Managers' Use of Budgetary Information.

'CASE STUDIES'

	FACTORY				TOTAL
	A	B	C	D	
Extent of Use					
Theoretical Use	3	1	-	2	6
Limited Use	6	6	7	3	22
Non-Use	3	2	11	16	32
	12	9	18	21	60
Main Factors Behind:					
(i) Theoretical Use					
High Education	2	1	-	2	5
Follow-Up	1	-	-	-	1
(ii) Limited Use					
Education	1	1	-	-	2
Training	-	-	-	1	1
Follow-Up	4	3	7	2	16
Education & Follow Up	1	2	-	-	3
(iii) Non-Use					
Poor Education	2	2	2	-	6
Non-Follow up	1	-	7	3	11
No Information	-	-	2	8	10
Too Tight Budget	-	-	-	1	1
Poor Education & Non-follow up	-	-	-	4	4
	12	9	18	21	60

THUS:

Factory A & B: Managers use their budgetary information mainly as a result of high education or follow up or both.

C: Managers use their budgets mainly as a result of follow up.

D: Managers use their budgets mainly as a result of education or follow up.

THEREFORE, MANAGERS USE THEIR BUDGETARY INFORMATION AS A RESULT OF HIGH EDUCATION, FOLLOW-UP OR BOTH. MOREOVER, EDUCATION RESULTS IN THEORETICAL USE WHEREAS FOLLOW-UP RESULTS IN LIMITED USE.

TABLE D_2

Extent and Main Factors Behind
Managers' Use of Budgetary Information.

"LIMITED INVESTIGATIONS"

	FACTORY				TOTAL
	E	F	G	H	
A) Extent of Use					
Theoretical Use	1	-	4	1	6
Limited Use	3	3	-	7	13
Non-Use	2	3	-	1	6
	6	6	4	9	25
B) Main Factors Behind					
(i) Theoretical Use					
High Education	-	-	1	1	2
Follow-Up	-	-	3	-	3
Education & Follow Up	1	-	-	-	1
(ii) Limited Use					
Follow-up	2	3	-	7	12
Presumed Follow-up	1	-	-	-	1
(iii) Non-Use					
Poor Education	2	-	-	-	2
Non Follow-Up	-	-	-	1	1
Poor Education & Non Follow up	-	3	-	-	3
	6	6	4	9	25

THUS:

Factory E: Managers use their budgetary information mainly as a result of follow up or both education and follow-up.

F: Managers use their budgetary information mainly as a result of follow up.

G & H: Managers use their budgetary information mainly as a result of education or follow up.

THEREFORE, THIS CONFIRMS THE RESULTS OF THE CASE STUDIES.

APPENDIX 'E'

Relationships Based on Cross-Checked Opinions and Facts

The object of this appendix is to present the relationships which are based on cross-checked opinions and facts, between managers' use of budgetary information and the factors which affect it.

The relationships are presented for each factory for the case studies, then on the following page the result of cross-checking this in the other four factories 'E', 'F', 'G' and 'H', and on the next page, the result of collating the relationships for all the eight factories together.

Furthermore, the details of the relationships are presented under each factory. Moreover, the definitions of the different terms used and a note on the calculation of the statistical association are included. To facilitate the calculation of the degree of association, the information has been presented in the form of contingency tables.

Thus, this appendix presents :

Section 1: Definitions.

Section 2: Relationships for each Factor:

- Case Studies
- Limited Investigations
- All the Factories Studied

Section 3: Relationships for each Factory:

- Factory 'A'
- 'B'
- 'C'
- 'D'
- 'E'
- 'F'
- 'G'
- 'H'

Section 4: Note on the Calculation of Statistical Association

SECTION 1 : DEFINITIONS

a) Education:

i) High Education: is measured by a University degree or a professional qualification.

ii) Intermediate Education : is measured by a qualification higher than the school stage, but lower than a University degree, such as the National Diploma.

iii) Poor Education : All other managers who do not have high or intermediate education are poorly educated.

Education was established through interviewing the manager and cross-checking this with other information obtained independently from the personnel officer, or the senior manager or the accountant.

b) Training in Budgets : is measured by a course which includes budgetary control.

Training in budgets was established through interviewing the manager concerned and cross-checking this information with other information obtained independently from the personnel officer, the senior manager, or the accountant.

c) Long experience without Budgets: is measured by working ten years or over without either participating in budget setting or receiving periodic information.

Long experience without budgets was established through interviewing the manager and cross-checking this information with the other information obtained independently from the personnel officer and the accountant.

d) Long experience in Budgets : This is measured by participating in budget-setting or being consulted on it or receiving periodic information or participating and receiving information for three years or over.

Long experience in budgets was established through interviewing the manager and cross-checking this information with other information obtained independently from the accountant and the senior manager.

e) Participation in budget-setting

i) Manager's participation : means the making of a budget by the manager concerned. However, this does not necessarily involve the actual calculations but it means the draft of the general policy or outline of a budget by the manager concerned.

ii) Manager's Consultation: means that the budget is prepared by the accountant or the senior manager and the manager was consulted on the figures with a true intent to know his problems, to adjust the original figures if necessary, and to make sure that the manager accepts the budget.

iii) Apparent Pretence Consultation : means that the accountant gets the approval of the manager without really taking any notice of his opinion or adjustment.

iv) Non-consultation : means that the manager was neither consulted nor participated in setting his budget.

Participation was established through interviewing the manager and cross-checking this information with information obtained from the accountant and the senior manager, also the study of the draft budgets and the comparison of hand writing.

f) Follow up: means that the manager is watched and followed up by his senior manager to ask for reasons of favourable as well as adverse variances. This may be practised formally, i.e. in a meeting or informally, i.e. individually, and is left to the senior manager concerned.

Senior manager's follow up was established through attending the relevant management meetings and through interviewing the manager and cross-checking this information with other information obtained independently from the accountant and the senior manager.

g) Accountant Role as an Interpreter : Means that the accountant provides a regular interpretation service to managers either formally in a meeting or informally individually.

Accountant's role as an interpreter was established through interviewing the manager and cross-checking this information with other information obtained from the accountant and the senior manager.

SECTION 2: RELATIONSHIPS FOR EACH FACTOR.

TABLE E_1

Relationship between Education and
Use of Budgetary Information.

"CASE STUDIES"

High education is measured by a University degree or a professional qualification. Intermediate education is measured by a qualification higher than the school stage but lower than a University or a professional qualification such as the National Diploma. All other managers are poorly educated.

	High	Intermediate	Poor	TOTAL
Use	5	0	1	6
Limited Use	3	4	15	22
No Use	6	2	24	32
TOTAL	14	6	40	60

Thus:

1. High education supports use.
   This is true in 8 cases out of 14.

2. Intermediate education supports use.
   This is true in 4 cases out of 6.

3. Education whether high or intermediate supports use.
   This is true in 12 cases out of 20.

4. Poor education hinders use.
   This is true in 24 cases out of 40.

5. Association: $Q_1 = 0.506$

Existence a) The characteristics of education and use are associated.
Direction b) The association is positive between having an intermediate or high qualification and use.
Degree c) The association is of moderate degree 0.506.
Nature d) The percentage of managers who have education and use their budgets is 60%. while the percentage of managers who are poorly educated and use their budgets is 40%.

THEREFORE, EDUCATION SUPPORTS USE OF BUDGETARY INFORMATION AND POOR EDUCATION HINDERS IT.

TABLE E_2

Relationship between Education and
Use of Budgetary Information.

"LIMITED INVESTIGATIONS"

	High	Intermediate	Poor	TOTAL
Use	3	0	3	6
Limited Use	2	3	8	13
No use	0	1	5	6
TOTAL	5	4	16	25

1. High education supports use.
   This is true in 5 cases.

2. Intermediate education supports use.
   This is true in 3 cases out of 4.

3. Education whether high or intermediate supports use.
   This is true in 8 cases out of 9.

4. Poor education does not hinder use.
   This is true in 11 cases out of 16.

   However, if the relative effect is considered, i.e. the percentage of managers who are educated and use their budgets is 88% while only 68% of managers who are poorly educated use them. Therefore, poor education hinders use.

5. Association: $Q_2 = 0.568$

Existence: The characteristic of education and use of budgetary information are associated.
Direction: The association is positive.
Degree: The association is of moderate degree .
Nature: The percentage of managers who have education and use their budget is 88% while only 68% of managers without education use their budgets.

THEREFORE, LIKE THE CASE STUDIES, EDUCATION SUPPORTS MANAGERS' USE OF BUDGETARY INFORMATION, AND POOR EDUCATION HINDERS IT.

TABLE E_3

Relationship between Education and
Use of Budgetary Information.

"ALL FACTORIES STUDIED"

	High	Intermediate	Poor	TOTAL
Use	8	0	4	12
Limited Use	5	7	23	35
No Use	6	3	29	38
TOTAL	19	10	56	85

1. High education supports use.
   This is true in 13 cases out of 19.

2. Intermediate education supports use.
   This is true in 7 cases out of 10.

3. Education whether high or intermediate supports use.
   This is true in 20 cases out of 29.

4. Poor education hinders use.
   This is true in 29 cases out of 56.

5. Association :

$Q_1 = 0.506$ $Q_2 = 0.568$ $Q_3 = 0.397$

Existence: The characteristics of education and use of budgetary information are associated.
Direction: The association is positive between education and use.
Degree : The association is of moderate degree as measured by $Q = 0.397$.
Nature: The percentage of managers who have education and use their budgets is 68.9%, while 48.2% of the managers who are poorly educated use their budgetary information.

THEREFORE, EDUCATION SUPPORTS USE OF BUDGETARY INFORMATION AND POOR EDUCATION HINDERS IT.

TABLE E_4

Relationship Between Training in Budgets and Use of Budgetary Information.

"CASE STUDIES"

Training in budgets is measured by an independent Course.

	Training	No Training	TOTAL
Use	4	2	6
Limited Use	6	16	22
No Use	9	23	32
TOTAL	19	41	60

1. Training in budgets supports use.
   This is true in 10 cases out of 19.

2. Lack of training in budgets hinders use.
   This is true in 23 cases out of 41.

3. Association : $Q_1 = 0.173$

Existence: The characteristics of training in budgets and use are associated.

Direction: The association is positive between training in budgets and use.

Degree: The association is of low degree as measured by $Q = 0.173$.

Nature: The percentage of managers who have training in budgets and use their budgetary information is 52.6%, while 43.9% of managers who had no training in budgets used their budgetary information.

THEREFORE, TRAINING IN BUDGETS SUPPORTS USE OF BUDGETARY INFORMATION, AND LACK OF TRAINING HINDERS IT.

TABLE E_5

Relationship Between Training in Budgets and Use of Budgetary Information.

"LIMITED INVESTIGATIONS"

	Training	No Training	TOTAL
Use	3	3	6
Limited Use	6	7	13
No Use	0	6	6
TOTAL	9	16	25

1. Training in budgets supports use.
   This is true in 9 cases.

2. Lack of training in budgets does not hinder use.
   This is true in 10 cases out of 16.

   However, if the relative effect is considered, i.e., the percentage of managers who have training in budgets and use their information is 100%., while 62.5% of managers who do not have training in budgets use them. Therefore, lack of training in budgets hinders use.

3. Association : $Q_2 = 1$

Existence: The characteristics of training in budgets and use of budgetary information are associated.
Direction: The association is positive.
Degree: The association is perfect as measured by $Q = 1$
Nature: The percentage of managers who had training in budgets that used their budgetary information is 100%, while only 62% of managers who did not have training in budgets use their budgetary information.

THEREFORE, LIKE THE CASE STUDIES, TRAINING IN BUDGETS SUPPORTS MANAGERS' USE OF THEIR BUDGETARY INFORMATION, AND NON-TRAINING IN BUDGETS HINDERS IT.

TABLE E_6

Relationship Between Training in Budgets and Use of Budgetary Information.

"ALL FACTORIES STUDIED"

	Training	No Training	TOTAL
Use	7	5	12
Limited Use	12	23	35
No Use	9	29	38
TOTAL	28	57	85

1. Training in budgets supports use.
   This is true in 19 cases out of 28.

2. Lack of training in budgets hinders use.
   This is true in 29 cases out of 57.

3. Association :

   $Q_1 = 0.173$ $Q_2 = 1$ $Q_3 = 0.339$

Existence: The characteristics of training in budgets, and use of budgetary information are associated.
Direction: The association is positive.
Degree : The association is of moderate degree as measured by $Q = 0.339$.
Nature: The percentage of managers who have training in budgets and use their budgetary information is 67.8%, while 49.1% of the managers who have no training in budgets use their budgetary information.

THEREFORE, TRAINING IN BUDGETS SUPPORTS MANAGERS' USE OF BUDGETARY INFORMATION AND NON-TRAINING HINDERS IT.

TABLE E_7

Relationship Between Long Experience without Budgets and Use of Budgetary Information.

"CASE STUDIES"

Long experience without budgets is taken as ten years or over.

	Long Experience	Short Experience	TOTAL
Use	1	5	6
Limited Use	15	7	22
No Use	27	5	32
TOTAL	43	17	60

1. Long experience without budgets hinders use. This is true in 27 cases out of 43.

2. Short experience without budgets does not hinder use. This is true in 15 cases out of 17.

3. Association : $Q_1 = -0.603$

Existence: The characteristics of long experience without budgets and the use of budgetary information are associated.

Direction: The association is negative between having long experience without budgets and use.

Degree : The association is of moderate degree as measured by $Q = -0.603$.

Nature: The percentage of managers who have long experience without budgets and use their information is 34.9% while 70.6% of managers who do not have long experience without budgets use their budgetary information.

THEREFORE, LONG EXPERIENCE WITHOUT BUDGETS HINDERS USE.

TABLE E_8

Relationship Between Long Experience without Budgets and Use of Budgetary Information.

"LIMITED INVESTIGATIONS"

	Long Experience	Short Experience	TOTAL
Use	2	4	6
Limited Use	8	5	13
No Use	5	1	6
TOTAL	15	10	25

1. Long experience without budgets does not hinder use. This is true in 10 cases out of 15.

2. Short experience without budgets does not hinder use. This is true in 9 cases out of 10.

   However, relatively speaking, long experience without budgets hinders use.

3. Association : $Q_2 = -0.636$

Existence: The characteristics of long experience without budgets and use of budgetary information are associated.

Direction: The association is negative.

Degree : The association is of moderate value as measured by $Q = -0.636$.

Nature: The percentage of managers who have long experience without budgets is 67% while 90% of managers who do not have long experience use their budgetary information.

THEREFORE, LIKE THE CASE STUDIES, LONG EXPERIENCE WITHOUT BUDGETS HINDERS USE.

TABLE E_9

Relationship Between Long Experience without Budgets and Use of Budgetary Information.

"ALL FACTORIES STUDIED"

	Experience	No Experience	TOTAL
Use	3	9	12
Limited Use	23	12	35
No Use	32	6	38
TOTAL	58	27	85

1. Long experience without budgets hinders use. This is true in 32 cases out of 58.

2. Short experience without budgets does not hinder use. This is true in 21 cases out of 2 7.

3. Association:

$Q_1 = -0.603$ $Q_2 = -0.636$ $Q_3 = -0.623$

Existence: The characteristics of having long experience without budgets and use of budgetary information are associated.

Direction: The association is negative between having long experience without budgets and using the information.

Degree: The association is of a high degree as measured by $Q = -0.623$.

Nature: The percentage of managers who have long experience without budgets and use their budgetary information is 44.8%, while 77.7% of managers who do not have long experience without budgets use their budgetary information.

THEREFORE, LONG EXPERIENCE WITHOUT BUDGETS HINDERS USE.

TABLE E_{10}

Relationship Between Long Experience in Budgets and Use of Budgetary Information.

"CASE STUDIES"

Long experience in budgets is taken as three years or over.

	Long Experience	Short Experience	No Experience in Budgets	TOTAL
Use	6	0	0	6
Limited Use	15	7	0	22
No Use	14	10	8	32
TOTAL	35	17	8	60

Thus:

1. Long experience in budgets supports use.
   This is true in 21 cases out of 35.

2. Short or no experience in budgets hinders use.
   This is true in 18 cases out of 25.

3. Association : $Q_1 = 0.588$

Existence: The characteristics of long experience in budgets and use are associated.

Direction: The association is positive between having long experience in budgets and use.

Degree: The association is of moderate degree 0.588.

Nature: The percentage of managers who have long experience in budgets and use the information is 60% while only 28% of managers who do not have long experience in budgets use their budgetary information.

THEREFORE, LONG EXPERIENCE IN BUDGETS SUPPORTS USE, AND SHORT OR NO EXPERIENCE IN BUDGETS HINDERS USE.

TABLE E_{11}

Relationship Between Long Experience in Budgets and Use of Budgetary Information.

"LIMITED INVESTIGATIONS"

	Long Experience	Short Experience	TOTAL
Use	6	0	6
Limited Use	8	5	13
No Use	2	4	6
TOTAL	16	9	25

1. Long experience in budgets supports use. This is true in 14 cases out of 16.

2. Short experience in budgets does not hinder use. This is true in 5 cases out of 9.

   However, if the relative effect is taken, i.e. the percentage of managers who have long experience in budgets and use their information is 87.5% while 55.5% of managers who do not have long experience in budgets use them. Therefore, short experience in budgets hinders use.

3. <u>Association</u>: $Q_2 = 0.697$

<u>Existence</u>: The characteristics of long experience in budgets and use of budgetary information are associated.

<u>Direction</u>: The association is positive.

<u>Degree</u>: The association is of high degree as measured by $Q = 0.697$.

<u>Nature</u>: The percentage of managers with long experience in budgets that use their budgetary information is 87.5% while only 55.5% of managers who do not have long experience in budgets use their budgetary information.

THEREFORE, LIKE THE CASE STUDIES, LONG EXPERIENCE IN BUDGETS SUPPORTS MANAGERS' USE OF THEIR BUDGETARY INFORMATION, AND SHORT EXPERIENCE HINDERS IT.

TABLE E_{12}

Relationship Between Long Experience in Budgets and Use of Budgetary Information.

"ALL FACTORIES STUDIED"

	Long Experience	Short Experience	TOTAL
Use	12	0	12
Limited Use	23	12	35
No Use	16	22	38
TOTAL	51	34	85

1. Long experience in budgets supports use . This is true in 35 cases out of 51.

2. Short experience in budgets hinders use. This is true in 22 cases out of 34.

3. Association:

$Q_1 = 0.588$ $Q_2 = 0.697$ $Q_3 = 0.601$

Existence: The characteristics of long experience in budgets and use of budgetary information are associated.
Direction: The association is positive.
Degree : The association is of high degree as measured by $Q = 0.601$.
Nature: The percentage of managers who have long experience in budgets and use their budgetary information is 68.6% while 35.2% of managers who do not have long experience in budgets use their budgetary information.

THEREFORE, LONG EXPERIENCE IN BUDGETS SUPPORTS USE OF BUDGETARY INFORMATION WHEREAS SHORT OR NO EXPERIENCE IN BUDGETS HINDERS IT.

TABLE E_{13}

Relationship Between Participation and
Use of Budgetary Information.

"CASE STUDIES"

	Participated	Was Consulted	Not Consulted	TOTAL
Use	4	1	1	6
Limited Use	11	5	6	22
No Use	1	6	25	32
TOTAL	16	12	32	60

1. Participation supports use.
   This is true in 15 cases out of 16.

2. It is difficult to deduce the effect of consultation as 6 cases use and 6 others do not.

3. If the effect of consultation and participation is taken together, still participation and consultation supports use.
   This is true in 21 cases out of 28.

4. Non-consultation hinders use.
   This is true in 25 cases out of 32.

5. <u>Association</u>: $Q_1 = 0.827$

<u>Existence</u>: The characteristics of participation and use of budgetary information are associated.
<u>Direction</u>: The association is positive.
<u>Degree</u>: The association is of a high degree as measured by $Q = 0.827$.
<u>Nature</u>: The percentage of managers who have participated or were consulted and used their budgets is 75% while only 21.9% of the managers who were not consulted use their budgetary information.

THEREFORE, CONSULTATION AND PARTICIPATION SUPPORT USE OF BUDGETARY INFORMATION, AND NON-CONSULTATION HINDERS IT.

TABLE E_{14}

Relationship Between Participation and Use of Budgetary Information.

"LIMITED INVESTIGATIONS"

	Participated	Was Consulted	Not Consulted	TOTAL
Use	6	0	0	6
Limited Use	9	3	1	13
No Use	3	0	3	6
TOTAL	18	3	4	25

1. Participation supports use.
   This is true in 15 cases out of 18.

2. Consultation supports use.
   This is true in 3 cases.

3. Participation or consultation support use.
   This is true in 18 cases out of 21.

4. Non-consultation hinders use.
   This is true in 3 cases out of 4.

5. <u>Association</u>: $Q_2 = 0.894$

<u>Existence</u>: The characteristics of participation and use of budgetary information are associated.
<u>Direction</u>: The association is positive.
<u>Degree</u>: The association is of a very high degree as measured by $Q = 0.894$.
<u>Nature</u>: The percentage of managers who have participated and used their budgetary information is 85.7% while only 25% of managers who were not consulted used their budgetary information.

THEREFORE, LIKE THE CASE STUDIES, PARTICIPATION AND CONSULTATION SUPPORT USE OF BUDGETARY, AND NON-CONSULTATION HINDERS IT.

TABLE E_{15}

Relationship Between Participation and Use of Budgetary Information.

"ALL FACTORIES STUDIED"

	Participated	Was Consulted	Not Consulted	TOTAL
Use	10	1	1	12
Limited Use	20	8	7	35
No Use	4	6	28	38
TOTAL	34	15	36	85

1. Participation supports use.
   This is true in 30 cases out of 34.

2. Consultation supports use.
   This is true in 9 cases out of 15.

3. Participation or consultation support use.
   This is true in 39 cases out of 49.

4. Non-consultation hinders use.
   This is true in 28 cases out of 36.

5. Association:

$Q_1 = 0.827$ $Q_2 = 0.894$ $Q_3 = 0.863$

Existence: The characteristics of participation in budget-setting and use of budgetary information are associated.
Direction: The association is positive.
Degree: The association is of a very high degree as measured by $Q = 0.863$.
N ature: The percentage of managers who participate and use their budgetary information is 79.5% while 22.2% of managers who are not consulted use their budgetary information.

THEREFORE, PARTICIPATION OR CONSULTATION SUPPORT USE OF BUDGETARY INFORMATION AND NON-CONSULTATION HINDERS IT.

TABLE E_{16}

Relationship Between Follow-up and
Use of Budgetary Information.

"CASE STUDIES"

	Followed Up	Not followed Up	TOTAL
Use	3	3	6
Limited Use	21	1	22
No Use	7	25	32
TOTAL	31	29	60

1. Follow up supports use.
   This is true in 24 cases out of 31.

2. Non-follow up hinders use.
   This is true in 25 cases out of 29.

3. Association : $Q_1 = 0.911$

Existence: The characteristics of follow - up and use are associated.
Direction: The association is positive.
Degree: The association is of a very high degree as measured by $Q = 0.911$.
Nature : The percentage of managers who are followed up and use their budgetary information is 77.4% while 13.7% of managers who are not followed up use their budgets and information.

THEREFORE, FOLLOW UP SUPPORTS USE OF BUDGETARY INFORMATION AND NON-FOLLOW UP HINDERS IT.

TABLE E_{17}

Relationship Between Follow-up and Use of Budgetary Information.

"LIMITED INVESTIGATIONS"

	Followed Up	Not Followed Up	TOTAL
Use	6	0	6
Limited Use	12	1	13
No Use	1	5	6
TOTAL	19	6	25

1. Follow up supports use.
   This is true in 18 cases out of 19.

2. Non-follow up hinders use.
   This is true in 5 cases out of 6.

3. Association : $Q_2 = 0.817$

Existence: The characteristics of follow up and use of budgetary information are associated.

Direction: The association is positive.

Degree: The association is of a very high degree as measured by $Q = 0.817$.

Nature: The percentage of managers who were followed up and used their budgetary information is 49.7% while only 16.7% of managers who are not followed up use their budgetary information.

THEREFORE, LIKE THE CASE STUDIES, FOLLOW UP SUPPORTS USE AND NON-FOLLOW UP HINDERS USE.

TABLE E_{18}

Relationship Between Follow-up and Use of Budgetary Information.

"ALL FACTORIES STUDIED"

	Followed Up	Not followed Up	TOTAL
Use	9	3	12
Limited Use	33	2	35
No Use	8	30	38
TOTAL	50	35	85

1. Follow up supports use.
   This is true in 42 cases out of 50.

2. Non-follow up hinders use.
   This is true in 30 cases out of 35.

3. Association:

   $Q_1 = 0.911$ $Q_2 = 0.817$ $Q_3 = 0.904$

Existence: The characteristics of follow up and use of budgetary information are associated.

Direction: The association is positive.

Degree: The association is of a very high degree as measured by $Q = 0.904$.

Nature: The percentage of managers who are followed up and use their budgetary information is 84% while 14.2% of the managers who are not followed up use their budgetary information.

THEREFORE, FOLLOW UP SUPPORTS USE AND NON-FOLLOW UP HINDERS IT.

TABLE E_{19}

Relationship Between the Accountant's Role as an Interpreter and Use of Budgetary Information.

"CASE STUDIES"

	Accountant as an Interpreter	Not as an Interpreter	TOTAL
Use	4	2	6
Limited Use	8	14	22
No Use	4	28	32
TOTAL	16	44	60

1. Accountant role as an interpreter supports use. This is true in 12 cases out of 16.

2. Accountant not working as an interpreter hinders use. This is true in 28 cases out of 44.

3. Association: $Q_1 = 0.680$

Existence: The characteristics of the accountant working as an interpreter and use are associated.

Direction: The association is positive.

Degree: The association is of a high degree as measured by $Q = 0.680$.

Nature: The percentage of managers to whom the accountant works as an interpreter and use their budgetary information is 75% while only 36% of the managers to whom the accountant does not work as an interpreter use their budgetary information.

THEREFORE, ACCOUNTANT'S ROLE AS AN INTERPRETER SUPPORTS USE AND NOT WORKING AS AN INTERPRETER HINDERS IT.

TABLE E_{20}

Relationship Between the Accountant's Role as an Interpreter and Use of Budgetary Information.

"LIMITED INVESTIGATIONS"

	Interpreter	Not as Interpreter	TOTAL
Use	5	1	6
Limited Use	10	3	13
No Use	1	5	6
TOTAL	16	9	25

1. Accountant's role as an interpreter supports use. This is true in 15 cases out of 16.

2. Accountant not working as an interpreter hinders use. This is true in 5 cases out of 9.

3. Association : $Q_2 = 0.898$

Existence: The characteristics of accountant's role as an interpreter and use of budgetary information are associated.

Direction: The association is positive.

Degree: The association is of a very high degree as measured by $Q = 0.898$.

Nature: The percentage of managers to whom the accountant works as an interpreter and use their budgetary information is 93.7% while only 44.4% of managers to whom the accountant does not work as an interpreter use their budgetary information.

THEREFORE, LIKE THE CASE STUDIES, ACCOUNTANT'S ROLE AS AN INTERPRETER SUPPORTS USE OF BUDGETARY INFORMATION, AND NOT WORKING AN AN INTERPRETER HINDERS IT.

TABLE E_{21}

Relationship Between the Accountant's Role as an Interpreter and Use of Budgetary Information.

"ALL FACTORIES STUDIED"

	Interpreter	Not as an Interpreter	TOTAL
Use	9	3	12
Limited Use	18	17	35
No Use	5	33	38
TOTAL	32	53	85

1. Accountant's role as an interpreter supports use. This is true in 27 cases out of 32.

2. Accountant not working as an interpreter hinders use. This is true in 33 cases out of 53.

3. Association:

$Q_1 = 0.680$ $Q_2 = 0.898$ $Q_3 = 0.798$

Existence: The characteristics of the Accountant's role as an interpreter and use of budgetary information are associated.

Direction: The association is positive.

Degree: The association is of a high degree as measured by $Q = 0.789$.

Nature: The percentage of managers to whom the accountant works as an interpreter and use their budgetary information is 84.3%, while 37.7% of the managers to whom the accountant does not work as an interpreter use them.

THEREFORE, ACCOUNTANT'S ROLE AS AN INTERPRETER SUPPORTS USE OF BUDGETARY INFORMATION AND NOT WORKING AS AN INTERPRETER HINDERS USE.

SECTION 3: RELATIONSHIPS FOR EACH FACTORY

FACTORY 'A'

A) Education

	High	Intermediate	Poor	TOTAL
Use	2	0	1	3
Limited Use	2	0	4	6
No Use	0	0	3	3
TOTAL	4	0	8	12

1. High education supports use.
   This is true in 4 cases.
   However, use in two of them is limited.

2. Poor education makes no difference to use.
   This is true in 5 cases out of 8.
   Although the 5 managers were poorly educated they used their budgets. However, in 3 cases they did not use their budgets. However, if the relative effect is considered, the percentage of managers who are highly educated and use their budget is 100%, while 63% of managers who are poorly educated use their budgets.
   Thus, poor education hinders use.

THEREFORE, EDUCATION SUPPORTS USE OF BUDGETARY INFORMATION.

B) Training in Budgets

	Training	No Training	TOTAL
Use	1	2	3
Limited Use	2	4	6
No Use	1	2	3
TOTAL	4	8	12

1. Training in budgets supports use.
   This is true in 3 cases out of 4.
   In the fourth case, although the manager is trained in budgets, he does not use it.

2. Lack of training in budgets does not hinder use.
   This is true in 6 cases out of 8.
   For although the six managers were not trained in budgets, they used them.

THEREFORE, TRAINING IN BUDGETS SUPPORTS USE

C) Experience without budgets

	Long experience without Budgets	Short Experience	TOTAL
Use	1	2	3
Limited Use	3	3	6
No Use	3	0	3
TOTAL	7	5	12

1. Long experience without budgets makes no difference to use. This is true in 4 cases out of 7. However, if the relative effect is taken, the percentage of managers who have long experience without budgets and use them is 57%, while 100% of managers who have short experience without budgets use them. Thus long experience without budgets hinders use.

2. Short experience without budgets does not hinder use. This is true in all 5 cases.

THEREFORE, LONG EXPERIENCE WITHOUT BUDGETS HINDERS USE.

D) Experience in Budgets

	Long experience in Budgets	Short Experience	TOTAL
Use	3	0	3
Limited Use	4	2	6
No Use	3	0	3
TOTAL	10	2	12

1. Long experience in budgets supports use. This is true in 7 cases out of 10.

2. Short experience in budgets does not hinder use. This is true in 2 cases.

THEREFORE, LONG EXPERIENCE IN BUDGETS SUPPORTS USE.

E) Participation

	Participated	Was Consulted	Not Consulted	TOTAL
Use	2	0	1	3
Limited Use	5	1	0	6
No Use	1	0	2	3
TOTAL	8	1	3	12

1. Participation supports use.
   This is true in 7 cases out of 8.

2. Consultation supports use.
   This is true in 1 case.

3. Non-consultation supports non-use.
   This is true in 2 cases out of 3.

4. Managers if participate do not prepare easy budgets.
   In 8 cases where there is participation:
   5 prepare a little tight budget
   2 prepare a little loose budget
   1 prepares a practical budget.

THEREFORE, PARTICIPATION SUPPORTS USE.

F) Relevance

1. Managers use the most relevant budgets more extensively. In 6 cases out of 7 managers use only the most relevant budget. In the other two cases where there is use, managers are only responsible for one budget.

THEREFORE, MANAGERS USE THE MOST RELEVANT BUDGETS ONLY.

G) Follow Up

	Followed Up	Not followed Up	TOTAL
Use	1	2	3
Limited Use	6	0	6
No Use	2	1	3
TOTAL	9	3	12

1. Follow up supports use.
   This is true in 7 cases out of 9.
   However, use in six cases is limited.

2. Non-follow up does not hinder use.
   This is true in 2 cases out of 3.
   However, if the relative effect is taken, the percentage of managers who are followed up and use their budgets is 78%, while 67% of managers who are not followed up use their budgets.
   Therefore, non-follow up hinders use.

3. Non-follow up of less relevant budgets hinders their use.
   This is true in all 6 cases.

4. Managers follow their senior managers in the extent of use.
   This is true in 7 cases out of 9.

THEREFORE, FOLLOW UP SUPPORTS USE.

H) Accountant Role as an Interpreter

	Interpreter	Not as an Interpreter	TOTAL
Use	1	2	3
Limited Use	2	4*	6
No Use	0	3	3
TOTAL	3	5	12

* In 4 cases the accountant role as an interpreter does not apply.

1. Accountant's role as an interpreter supports use.
   This is true in 3 cases.

2. Accountant not working as an interpreter hinders use.
   This is true in 3 cases out of 5.
   However, in 4 caaes the accountant role as an interpreter does not apply.

THEREFORE, ACCOUNTANT'S ROLE AS AN INTERPRETER SUPPORTS USE.

I) Information

1. Irregular provision of information to managers limits its use.
This is true in 1 case.
In the other 11 cases, this factor does not apply.

J) Incentive Supports Use.

This is true in 5 cases.
In the other seven cases, this factor does not apply.

To sum up, the main relationships are :

1. Education supports use of budgetary information.
2. Training in budgets supports use of budgetary information.
3. Experience without budgets hinders use of budgetary information.
4. Experience in budgets supports use of budgetary information.
5. Participation supports use.
6. Managers use the most relevant budgets.
7. Follow-up supports use of budgetary information.
8. Accountant's role as an interpreter supports use of budgetary information.
9. Incentive supports use of budgetary information.
10. As to information, the evidence is not significant enough as it only applies to one manager. Therefore, it is wise not to base a conclusion on one case only.

FACTORY 'B'

A) Education

	High	Intermediate	Poor	TOTAL
Use	1	0	0	1
Limited Use	1	2	3	6
No Use	0	0	2	2
TOTAL	2	2	5	9

1. High education supports use.
   This is true in 2 cases.
   However, use was limited in one of them.

2. Intermediate education supports use.
   This is true in 2 cases.
   However, use was limited in the two cases.

3. Poor education hinders use.
   This is true in two cases out of five.
   In the two cases concerned, managers use their experience as an indication of close supervision attitude rather than budgets.

THEREFORE, EDUCATION SUPPORTS USE.

B) Training in Budgets

	Training in Budgets	No Training	TOTAL
Use	1	0	1
Limited Use	3	3	6
No Use	0	2	2
TOTAL	4	5	9

1. Training in budgets supports use.
   This is true in 4 cases.

2. Lack of training in budgets does not hinder use.
   This is true in 3 cases out of 5.
   However, the relative effect is: the percentage of managers who have training and use their budgets is 100% while 60% of managers who lack training use them. Therefore, lack of training in budgets hinders use.

THEREFORE, TRAINING IN BUDGETS SUPPORTS USE.

C) Experience without Budgets

	Long experience without Budgets	Short experience without Budgets	TOTAL
Use	0	1	1
Limited Use	3	3	6
No Use	2	0	2
TOTAL	5	4	9

1. Long experience without budgets makes no difference to use. For in 5 cases who have long experience without budgets :
   3 used their budgets
   2 did not use it.
   However, the relative effect is: the percentage of managers who have long experience without budgets and use their budgets is 60%, while 100% of managers who do not have long experience without budgets use them. Therefore, long experience without budgets hinders use.

2. Short experience without budgets does not hinder use. This is true in 4 cases.

THEREFORE, LONG EXPERIENCE WITHOUT BUDGETS HINDERS USE.

D) Experience in Budgets

	Long experience in Budgets	Short experience in Budgets	No experience in Budgets	TOTAL
Use	1	0	0	1
Limited Use	5	1	0	6
No Use	0	2	0	2
TOTAL	6	3	0	9

1. Long experience in budgets supports use. This is true in 6 cases.

2. Short experience in budgets hinders use. This is true in 2 cases out of 3.

THEREFORE, LONG EXPERIENCE IN BUDGETS SUPPORTS USE.

E) Participation

	Participated	Consulted	Not Consulted	TOTAL
Use	1	0	0	1
Limited Use	3	2	1	6
No Use	0	0	2	2
TOTAL	4	2	3	9

1. Participation supports use.
   This is true in 4 cases.
   However, in three cases use was limited.

2. Consultation supports use.
   This was true in 2 cases.
   However in the two cases use was limited.

3. Non-consultation hinders use.
   This was true in 2 cases out of 3.
   However, in the third case use was limited.

4. Managers if participate, prepare practical budgets.
   This is true in 4 cases out of 6.
   In the other two, manager prepared little tight and little loose budgets.

THEREFORE, CONSULTATION OR PARTICIPATION SUPPORTS USE.

F) Relevance

1. Regarding the budget as irrelevant results in non-use.
   This is true in two cases.

   In one of them, the manager concerned was followed up; as a result he used his experience rather than the budget as an indication of close supervision attitude.

   In the second case, the manager concerned was not followed up; however, he used his experience as an indication of the close supervision attitude.

2. Managers use the most relevant information only.
   This is true in 6 cases out of 7.

THEREFORE, REGARDING THE INFORMATION AS IRRELEVANT RESULTS IN NON-USE AND MANAGERS TEND TO USE THE MOST RELEVANT INFORMATION ONLY.

G) Follow up

	Followed Up	Not Followed Up	TOTAL
Use	1	0	1
Limited Use	6	0	6
No Use	1	1	2
TOTAL	8	1	9

1. Follow up supports use.
This is true in 7 cases out of 8.
In the eighth case, the manager concerned does not use his budget as a result of poor education. Instead he uses his experience as an indication of his attitude of close supervision.

2. Non-follow up hinders use.
This is true in one case.

3. Managers use those parts of the information which are followed up by senior managers.
This is true in 6 cases out of 7.

THEREFORE, FOLLOW UP SUPPORTS USE.

H) Accountant Role as an Interpreter.

	Interpreter	Not as an Interpreter	TOTAL
Use	1	0	1
Limited Use	1	5	6
No Use	0	2	2
TOTAL	2	7	9

1. Interpretation by the accountant supports use.
This is true in 2 cases.

2. It is difficult to deduce the effect of non interpretation by the accountant on use.

2 cases - no interpretation and no use
2 cases - no interpretation and use
3 cases - does not apply

However, the relative effect is: the percentage of managers to whom the accountant works as an interpreter and use their budgets is 100%, while 50% of managers to whom the accountant does not work as an interpreter use them. Therefore, the non-provision of the interpretation service by the accountant hinders use.

THEREFORE, INTERPRETATION BY THE ACCOUNTANT SUPPORTS USE.

I) Information

1. Non provision of information to manager limits use. This is true in one case.

2. Provision of simple information supports use. This is true in 6 cases out of 9.

One manager did not get the information. Two other managers did not use the information as a result of their attitude of close supervision.

3. Too much information limits use. This is true in two cases out of three.

J) Incentive

1. Incentive supports use.

This is true in all 3 cases.

In the other six cases, this factor does not apply.

FACTORY 'C'

A. Education

	High	Intermediate	Poor	TOTAL
Limited Use	0	2	5	7
No Use	2	2	7	11
TOTAL	2	4	12	18

1. High education does not make any difference to use. This is true in 2 cases. For, although in both cases managers were highly educated, they did not use their budgets. However, it must be emphasised that they were not followed up on their budgetary information.

2. It is difficult to conclude the effect of intermediate education as two use their budgetary information and the other two do not use theirs.

3. If the effect of intermediate and high education is taken together, the result is that education does not make any difference to use here as only two out of six managers use their information.

4. Poor education supports non-use. This is true in 7 cases out of 12.

THEREFORE, IT SEEMS THAT EDUCATION DOES NOT MAKE ANY DIFFERENCE TO USE HERE. HOWEVER, POOR EDUCATION SUPPORTS NON-USE.

B) Training in Budgets

	Training	No Training	TOTAL
Limited Use	0	7	7
No Use	2	9	11
TOTAL	2	16	18

1. Training in budgets does not make any difference to use. This is true in 2 cases. For although in both cases managers were trained in budgets, they did not use them. However, in both cases managers were not followed up.

2. Lack of training in budgets supports non-use. This is true in 9 cases out of 16.

THEREFORE, IT SEEMS THAT TRAINING IN BUDGETS DOES NOT MAKE ANY DIFFERENCE TO USE WHEREAS LACK OF TRAINING HINDERS USE.

C) Experience without Budgets

	Long Experience	Short Experience	TOTAL
Limited Use	6	1	7
No Use	10	1	11
TOTAL	16	2	18

1. Long experience without budgets hinders use. This is true in 10 cases out of 16.

2. It is difficult to conclude the effect of short experience without budgets as it applied in two cases; one uses it whereas the other does not.

THEREFORE, LONG EXPERIENCE WITHOUT BUDGETS HINDERS USE.

D) Experience with Budgets

	Long Experience	Short Experience	No Experience	TOTAL
Limited Use	6	1	0	7
No Use	7	2	2	11
TOTAL	13	3	2	18

1. Long experience in budgets does not make any difference to use.
This is true in 7 cases out of 13.
However, the relative effect is; the percentage of managers who have long experience in budgets and use their budgets is 46%, while only 20% of managers who have not long experience in budgets use them.
Therefore, long experience in budgets supports use.

2. Short experience in budgets hinders use.
This is true in 2 cases out of 3.

3. No experience in budgets hinders use.
This is true in 2 cases.

THEREFORE, SHORT OR NO EXPERIENCE IN BUDGETS HINDERS USE WHEREAS LONG EXPERIENCE IN BUDGETS SUPPORTS IT.

E) Participation

	Participated	Was Consulted	Not Consulted	TOTAL
Limited Use	2	1	4	7
No Use	0	1	10	11
TOTAL	2	2	14	18

1. Participation supports use.
   This is true in two cases.

2. It is difficult to deduce the effect of consultation as in the two cases, one manager used his budget and the other did not.

3. If the effect of participation and consultation is taken together, the result is; participation or consultation supports use; this is true in 3 cases out of 4.

4. Non-consultation supports non use.
   This is true in 10 cases out of 14.

THEREFORE, PARTICIPATION OR CONSULTATION SUPPORTS USE AND NON-CONSULTATION HINDERS IT.

F) Relevance

1. Managers tend to use the most relevant information only.
   This is true in all 7 cases where there is use.

   Production managers only used the daily information which is more relevant to production than the monthly information, whereas sales managers only used the sales budget and not the cost information, and service managers did not use any.

   However, production and sales managers were followed up only on the most relevant information, whereas service managers were not followed up at all.

THEREFORE, MANAGERS USE THE MOST RELEVANT INFORMATION ONLY.

G) Follow Up

	Followed Up	Not Followed Up	TOTAL
Limited Use	7	0	7
No Use	2	9	11
TOTAL	9	9	18

1. Follow up supports use.
This is true in 7 cases out of 9.

The other two managers did not use their budgets, although they are followed up. Instead, they use their experience as they are poorly educated and had long experience without budgets. In one of the two cases, the manager concerned intended to leave the organisation as a result of the wrong form of follow up.

2. Non-follow up hinders use.
This is true in 9 cases.

3. Managers use those parts of the information which are followed up by their senior managers.
This is true in 7 cases.
Managers did not use the less relevant budgets as they were not followed up on them.

Thus, to conclude, follow up supports use and non-follow up hinders it. Furthermore, managers use only those parts of the information which are followed up by their senior managers. In two cases, however, follow up established a habit of use, so that managers used their budgets even when they were not followed up afterwards. However, follow up in the first instance was strong and regular.

H) Accountant Role as an Interpreter

	Interpreter	Not Interpreter	TOTAL
Limited Use	4	3	7
No Use	2	9	11
TOTAL	6	12	18

1. Accountant's role as an interpreter supports use.
   This is true in 4 cases out of 6.
   In the other two cases, managers used their experience rather than their budgets.

2. If the accountant does not work as an interpreter, this hinders use.
   This is true in 9 cases out of 12.

   In the other three cases, managers used their budgets although the accountant did not work as an interpreter. However, the information was extremely simple and the accountant's role as an interpreter did not matter very much.

THEREFORE, THE ACCOUNTANT'S ROLE AS AN INTERPRETER SUPPORTS USE. MOREOVER IF HE DOES NOT WORK AS AN INTERPRETER THIS SUPPORTS NON-USE.

I) Information

1. Non-provision of budgetary information to managers hinders use.
   This is true in 2 cases out of 3.
   In the three cases, managers did not get the information although it was prepared; however in one case the manager concerned used his budget.

FACTORY 'D'

A) Education

	High Education	Poor Education	TOTAL
Use	2	0	2
Limited Use	0	3	3
No Use	4	12	16
TOTAL	6	15	21

1. On the face of it, it seems that high education supports non-use, as although there are 6 managers who are highly educated, only two use their budgets.

   In fact, in three other cases managers would use their budgets had they got the information; so their non-use is related to the system rather than high education.

   In the other three cases, two use their budgets, and one does not use it as the budget was too tight and he tried to improve it without success; as a result he was frustrated and did not use his budget at all.

   In the two cases where there is use, this is largely due to high education, training and long experience in budgets.

   Thus, high education supports use.

2. Poor education supports non-use.
   This is true in 12 cases out of 15.
   However, in the other three, two of them use their budgets as a result of follow up.

THEREFORE, HIGH EDUCATION SUPPORTS USE AND POOR EDUCATION HINDERS IT.

B) Training in Budgets

	Training	No Training	TOTAL
Use	2	0	2
Limited Use	1	2	3
No Use	6	10	16
TOTAL	9	12	21

1. Although on the face of it, it seems that training makes no difference to use of budgets, in fact one of the managers who do not use their budgets, do not use it as a result of the budget being too tight, and the other three managers would use the system had they got the information; therefore, non-use here is related to the system and not to training.

   Out of the remaining five cases, three managers use their budgets and two do not.

   Thus, training supports use.

2. Lack of training in budgets supports non-use.

   This is true in 10 cases out of 12. In the other two cases, managers use their budgets although they had no training in budgets, as a result of follow up.

THEREFORE, TRAINING IN BUDGETS SUPPORTS USE AND LACK OF TRAINING HINDERS IT.

C) Experience without Budgets

	Long Experience	Short Experience	TOTAL
Use	0	2	2
Limited Use	3	0	3
No Use	12	4	16
TOTAL	15	6	21

1. Long experience without budgets supports non-use. This is true in 12 cases out of 15.

   In the other three cases, however, one manager used his budget out of training and two out of follow up.

2. Although on the face of it, it seems that short experience without budgets supports non-use, in fact three managers do not use their budgets as a result of the system and not experience.

   Thus, short experience without budgets does not hinder use.

THEREFORE, LONG EXPERIENCE WITHOUT BUDGETS HINDERS USE.

D) Experience in Budgets

	Long Experience	Short Experience	No Experience	TOTAL
Use	2	0	0	2
Limited Use	0	3	0	3
No Use	4	6	6	16
TOTAL	6	9	6	21

1. Although on the face of it, it seems that long experience in budgets supports non-use, in fact the four managers do not use their budgets for different reasons; three of them as a result of the system and one as a result of having a too tight budget.
   In the other two cases where managers have a long experience in budgets, they used them.
   Therefore, long experience in budgets supports use.

2. Short experience in budgets supports non-use.
   This is true in 6 cases out of 9.
   In the other three cases, use was out of training in one case, and follow up in two cases.

3. No experience in budgets supports non-use.
   This is true in 6 cases.

E) Participation

	Participated	Was Consulted	Not Consulted	TOTAL
Use	1	1	0	2
Limited Use	1	1	1	3
No Use	0	5	11	16
TOTAL	2	7	12	21

1. Participation supports use.
   This is true in two cases.

2. Although on the face of it, it seems that consultation supports non-use, in fact three out of the five cases do not use their budgets as a result of the system. Therefore, it is difficult to deduce the effect of consultation as two managers use their budgets and two managers do not.

3. If the effect of participation and consultation is taken together, the result is: participation and consultation support use.

4. Non-consultation supports non-use.
   This is true in 11 cases out of 12.
   However, in the twelfth case, the manager used his budget as a result of follow up.

THEREFORE, PARTICIPATION AND CONSULTATION SUPPORT USE.
MOREOVER NON-CONSULTATION HINDERS USE.

F) Relevance

1. Managers use the most relevant information only.
   This is true in 3 cases out of 5.

   In the other two cases, managers used the less relevant budgets as well. However, the two managers concerned are highly educated and have training and long experience in budgets.

   It also must be emphasised that the three managers concerned are not followed up on the basis of the less relevant budgets.

2. Regarding the budgetary information as irrelevant results in its non-use.
   This is true in 8 cases.
   However, all eight managers are not followed up on the budget.
   Furthermore, if the manager concerned regards the budget as irrelevant, he would not use it.
   However, in this case his attitude is coupled with non-follow up.

THEREFORE, MANAGERS USE THE RELEVANT INFORMATION ONLY.

G) Follow Up

	Followed Up	Not Followed Up	TOTAL
Use	1	1	2
Limited Use	2	1	3
No Use	2	14	16
TOTAL	5	16	21

1. Follow up supports use.
   This is true in three cases out of five.

   In the other two cases, although the managers were followed up, they did not use their budgets.

2. Non-follow up hinders use.
   This is true in 14 cases out of 16.

   However, in the other two cases, one manager was highly educated and the other had training in budgets. Moreover, three out of the five managers who use their budgets do not use the less relevant budgets as they are not followed up on them.

3. Managers use those parts of the information which are followed up.
   This is true in 2 cases out of 3.

   The third manager used all the items whether followed up or not. This, however, is a highly educated manager.

THEREFORE, FOLLOW UP SUPPORTS USE AND NON-FOLLOW UP HINDERS IT.

H) Accountant Role as an Interpreter

	Interpreter	Non-Interpreter	TOTAL
Use	2	0	2
Limited Use	1	2	3
No Use	2	14	16
TOTAL	5	16	21

1. Accountant role as an interpreter supports use. This is true in 3 cases out of 5. In the other two cases, although the accountant did work as an interpreter, managers did not use their budgets.

2. Accountant not working as an interpreter hinders use. This is true in 14 cases out of 16.

   However, in the two cases where managers used their budgets, accountant role as an interpreter did not apply, as the information is very simple.

THEREFORE, THE ACCOUNTANT ROLE AS AN INTERPRETER SUPPORTS USE. MOREOVER, IF THE ACCOUNTANT DOES NOT WORK AS AN INTERPRETER THIS HINDERS OR LIMITS USE.

I) Information

1. Non-provision of information to managers supports non-use. This is true in 8 cases.

THEREFORE, NON-PROVISION OF INFORMATION TO MANAGERS HINDERS USE.

FACTORY 'E'

A) Education

	High	Intermediate	Poor	TOTAL
Use	1	0	0	1
Limited Use	0	1	2	3
No Use	0	0	2	2
TOTAL	1	1	4	6

1. High education supports use.
   This is true in one case.

2. Intermediate education supports use.
   This is true in one case.

3. It is difficult to deduce the effect of poor education on use, as two managers use their budgets and two do not. However, the two managers who use their budgets use it out of follow up, whereas the other two, although followed up, use their experience rather than the information for control. However, the relative effect is: the percentage of managers who are educated and use their budgets is 100%, while 50% of those who are not educated use them.

   Thus, poor education hinders use.

THEREFORE, EDUCATION SUPPORTS USE.

B) Training in Budgets

	Training	No Training	TOTAL
Use	1	0	1
Limited Use	2	1	3
No Use	0	2	2
TOTAL	3	3	6

1. Training in budgets supports use.
   This is true in three cases.

2. Lack of training in budgets hinders use.
   This is true in 2 cases our of 3.

THEREFORE, TRAINING IN BUDGETS SUPPORTS USE WHEREAS LACK OF TRAINING HINDERS IT.

C) Long Experience without Budgets

	Long Experience	Short Experience	TOTAL
Use	0	1	1
Limited Use	2	1	3
No Use	2	0	2
TOTAL	4	2	6

1. It is difficult to conclude the effect of long experience without budgets as two managers use their budgets and two do not. However, the relative effect is: the percentage of managers who have long experience without budgets and use their budgets is 50%, while 100% of managers who do not have long experience without budgets use them. Therefore, long experience without budgets hinders use.

2. However, short experience without budgets does not hinder use. This is true in 2 cases.

THEREFORE, LONG EXPERIENCE WITHOUT BUDGETS HINDERS USE.

D) Long Experience in Budgets

	Long Experience	Short Experience	TOTAL
Use	1	0	1
Limited Use	2	1	3
No Use	1	1	2
TOTAL	4	2	6

1. Long experience in budgets supports use. This is true in 3 cases out of 4.

2. It is difficult to conclude the effect of short experience in budgets as one manager uses his budget and one does not. However, the relative effect is: the percentage of managers who have long experience in budgets and use their budgets is 75%, while 50% of those who have not long experience use them. Thus, short experience in budgets hinders use.

THEREFORE, LONG EXPERIENCE IN BUDGETS SUPPORTS USE.

E) Participation

	Participation	Was not consulted	TOTAL
Use	1	0	1
Limited Use	3	0	3
No Use	2	0	2
TOTAL	6	0	6

1. Participation supports use.
   This is true in 4 cases out of 6.

THEREFORE, PARTICIPATION SUPPORTS USE.

F) Follow Up

	Followed Up	Not Followed Up	TOTAL
Use	1	0	1
Limited Use	2	1	3
No Use	0	2	2
TOTAL	3	3	6

1. Follow up supports use.
   This is true in 3 cases.

2. Non-follow up supports non-use.
   This is true in 2 cases out of 3.

   However, in the third case the manager used his budget out of presumed follow up.

3. Managers use the information which they are followed up on only.
   This is true in 2 cases out of 4.

   In two cases, where the managers used all the information whether followed up or not, they were either highly educated or presumed that the manager would follow up the budget as a whole. Thus, in a sense, use which results out of high education is more comprehensive than that which results from follow up. Moreover, use which results from presumed follow up is more comprehensive than that which results from explicit follow up.

THEREFORE, FOLLOW UP SUPPORTS USE WHEREAS NON-FOLLOW UP HINDERS USE.

G) Accountant Role as an Interpreter

	Interpreter	Not as an Interpreter	TOTAL
Use	0	1	1
Limited Use	2	1	3
No Use	0	2	2
TOTAL	2	4	6

1. Accountant's role as an interpreter supports use. This is true in 2 cases.

2. It is difficult to conclude the effect of accountant not working as an interpreter on use, as two managers use their budgets and the other two do not.

   However, the two who do not use their budgets, do not use them as a result of educational status, therefore, accountant's role as an interpreter would improve their understanding of the budget and as such would give it a higher probability for use.

   The other two who use their budgets, one of them uses it as a result of high education and the other out of presumed follow up.

3. Irregular interpretations by the accountant limits use.
   This is true in two cases.

THEREFORE, ACCOUNTANTS ROLE AS AN INTERPRETER SUPPORTS USE.

H) Information

1. Exceptional reporting supports use.
   This is true in three cases.

   In all three cases, managers had exceptional reports apart from the routine reports. This did work as a means of follow up to communicate top management's image of the seriousness of these particular deviations. However, exceptional reporting has another disadvantage, as managers tend to use the exceptional information and regard the other information as routine. However, as long as exceptional reporting reports all the significant deviations, its effect for control is the same whether managers used or ignored the routine information.

   On the other hand, exceptional reporting does not enable the manager to appreciate the whole picture and as such unlike the routine information it does not work as a means of appreciation. It only works, at least in this case, as a directive to investigate the reasons behind certain deviations.

FACTORY 'F'

A) Education

It is not possible to conclude the effect of education as all six managers are poorly educated.

However, it is difficult to conclude the effect of poor education on use as three managers use their budgets and three do not use them.

THEREFORE, IT IS DIFFICULT TO CONCLUDE THE EFFECT OF EDUCATION.

B) Experience without Budgets

Again, it is difficult to conclude the effect of long experience without budgets on use as all six managers have long experience without budgets.

Moreover, three managers use their budgets and three do not.

THEREFORE, IT IS DIFFICULT TO CONCLUDE THE EFFECT OF EXPERIENCE WITHOUT BUDGETS ON USE.

C) Experience in Budgets

	Long Experience	Short Experience	TOTAL
Limited Use	1	2	3
No Use	0	3	3
TOTAL	1	5	6

1. Long experience in budgets supports use.
   This is true in one case.

2. Short experience in budgets hinders use.
   This is true in 3 cases out of 5.

THEREFORE, LONG EXPERIENCE IN BUDGETS SUPPORTS USE AND SHORT EXPERIENCE HINDERS IT.

D) Training in Budgets

	Training	No Training	TOTAL
Limited Use	1	2	3
No Use	0	3	3
TOTAL	1	5	6

1. Training in budgets supports use.
   This is true in one case.

2. Lack of training in budgets hinders use.
   This is true in 3 cases.

THEREFORE, TRAINING IN BUDGETS SUPPORTS USE AND LACK OF TRAINING HINDERS IT.

E) Participation

	Consulted	Not Consulted	TOTAL
Limited Use	3	0	3
No Use	1	2	3
TOTAL	4	2	6

1. Consultation supports use.
   This is true in 3 cases out of 4.

2. Non-consultation hinders use.
   This is true in 2 cases.

THEREFORE, CONSULTATION SUPPORTS USE AND NON-CONSULTATION HINDERS IT.

F) Follow Up

	Followed Up	Not Followed Up	TOTAL
Limited Use	3	0	3
No Use	1	2	3
TOTAL	4	2	6

1. Follow-up supports use.
   This is true in 3 cases out of 4.

2. Non-follow up hinders use.
   This is true in 2 cases.

3. Managers use those parts of the information which are followed up by senior managers.
   This is true in 2 cases out of 3.

THEREFORE, FOLLOW UP SUPPORTS USE.

G) Accountant Role as an Interpreter

	Interpreter	Not Interpreter	TOTAL
Limited Use	1	2	3
No Use	0	3	3
TOTAL	1	5	6

1. Accountant role as an interpreter supports use.
   This is true in 1 case.

2. If the accountant does not work as an interpreter, this hinders use.
   This is true in 3 cases.

THEREFORE, ACCOUNTANT'S ROLE AS AN INTERPRETER SUPPORTS USE.

H) Information

1. Non provision of information to managers hinders use.
   This is true in 2 cases.

2. Provision of late information hinders its use.
   This is true in 5 cases.

3. Dissatisfaction of information hinders its use.
   3 - satisfied - use it
   3 - dissatisfied - do not use it.

FACTORY 'G'

This case is not good enough to establish relationships by itself as all the managers interviewed use their budgets.

However, its findings would be more meaningful in comparison with other cases. Thus, relationships which follow are of limited value by themselves, but of great value in comparison with other cases.

A) Education

	High	Poor	TOTAL
Use	1	3	4
No Use	0	0	0
TOTAL	1	3	4

1. High education supports use.
   This is true in 1 case.

2. Poor education makes no difference to use.
   This is true in 3 cases.

THEREFORE, IT SEEMS THAT EDUCATION DOES NOT MAKE ANY DIFFERENCE TO USE; AS MANAGERS USE THEIR BUDGETS WHETHER THEY ARE HIGHLY EDUCATED OR NOT.

B) Training in Budgets

	Training	No Training	TOTAL
Use	1	3	4
No Use	0	0	0
TOTAL	1	3	4

In this case, one manager had training in budgets. However, the manager who had training in budgets is not the same one who has high education.

1. Training in budgets supports use.
   This is true in 1 case.

2. No training in budgets does not make any difference to use.
   This is true in 3 cases.
   For, although managers did not have training in budgets, they still used them.

THEREFORE, IT SEEMS THAT TRAINING IN BUDGETS DOES NOT MAKE ANY DIFFERENCE TO USE.

C) Experience without Budgets

	Long Experience	Short Experience	TOTAL
Use	2	2	4
No Use	0	0	0
TOTAL	2	2	4

1. Long experience without budgets does not hinder use.
This is true in 2 cases.

2. Short experience without budgets does not make any difference to use.
This is true in 2 cases.

THEREFORE, IT SEEMS THAT LONG EXPERIENCE WITHOUT BUDGETS DOES NOT MAKE ANY DIFFERENCE TO USE.

D) Experience in Budgets

	Long Experience	Short Experience	TOTAL
Use	4	0	4
No Use	0	0	0
TOTAL	4	0	4

1. Long experience in budgets supports use.
This is true in all four cases.

THEREFORE, LONG EXPERIENCE IN BUDGETS SUPPORTS USE.

E) Participation

	Participated	Not Consulted	TOTAL
Use	4	0	4
No Use	0	0	0
TOTAL	4	0	4

1. Participation supports use.
This is true in all 4 cases.

Thus, to conclude on the basis of this case alone, it seems that participation supports use.

2. Managers if participate do not prepare easy budgets.
3 - a practical budget
1 - prepared a loose budget

THEREFORE, PARTICIPATION SUPPORTS USE.

F) Follow Up

	Followed Up	Not Followed Up	TOTAL
Use	4	0	4
No Use	0	0	0
TOTAL	4	0	4

1. Follow up supports use.

   This is true in all four cases.

THEREFORE, FOLLOW UP SUPPORTS USE.

H) Accountant Role as an Interpreter

1. Accountant's role as an interpreter supports use.

   This is true in all four cases.

THEREFORE, ACCOUNTANT'S ROLE AS AN INTERPRETER SUPPORTS USE.

FACTORY 'H'

A) Education

	High	Intermediate	Poor	TOTAL
Use	1	0	0	1
Limited Use	2	2	3	7
No Use	0	1	0	1
TOTAL	3	3	3	9

1. High education supports use.
   This is true in 3 cases.

2. Intermediate education supports use.
   This is true in 2 cases out of 3.

   However, the third manager did not use his budget as a result of a limited degree of control; most of the items are uncontrollable.

3. Education whether high or intermediate supports use.
   This is true in 5 cases out of 6.

4. Poor education does not hinder use.
   This is true in 3 cases.

THEREFORE, EDUCATION SUPPORTS USE.

B) Training in Budgets

	Training	No Training	TOTAL
Use	1	0	1
Limited Use	3	4	7
No Use	0	1	1
TOTAL	4	5	9

1. Training in budgets supports use.
   This is true in 4 cases.

2. Lack of training in budgets does not hinder use.
   This is true in 4 cases out of 5. However, the relative effect is: the percentage of managers who have training and use their budgets is 100% while 80% of those who are not trained use them. Thus, lack of training hinders use.

THEREFORE, TRAINING SUPPORTS MANAGERS' USE OF BUDGETARY INFORMATION.

C) Experience without Budgets

	Long Experience	Short Experience	TOTAL
Use	0	1	1
Limited Use	3	4	7
No Use	0	1	1
TOTAL	3	6	9

1. Long experience without budgets does not hinder use. This is true in 3 cases.

2. Short experience without budgets supports use.

THEREFORE, LONG EXPERIENCE WITHOUT BUDGETS DOES NOT HINDER USE.

D) Experience in Budgets

	Long Experience	Short Experience	TOTAL
Use	1	0	1
Limited Use	5	2	7
No Use	1	0	1
TOTAL	7	2	9

1. Long experience in budgets supports use. This is true in 6 cases out of 7.

2. Short experience in budgets does not hinder use. This is true in 2 cases.

THEREFORE, LONG EXPERIENCE IN BUDGETS SUPPORTS USE.

E) Participation

	Participated	Was Consulted	Not Consulted	TOTAL
Use	1	0	0	1
Limited Use	3	3	1	7
No Use	0	0	1	1
TOTAL	4	3	2	9

1. Participation supports use.
   This is true in 4 cases.

2. Consultation supports use.
   This is true in 3 cases.

3. It is difficult to conclude the effect of non-consultation as one manager uses his budget while the other does not. However, the relative effect is : the percentage of managers who participated or were consulted and use their budgets is 100% while 50% of those who are not consulted use them. Thus, non-consultation hinders use.

THEREFORE, PARTICIPATION SUPPORTS USE.

F) Follow-Up

	Followed Up	Not Followed Up	TOTAL
Use	1	0	1
Limited Use	7	0	7
No Use	0	1	1
TOTAL	8	1	9

1. Follow up supports use.
   This is true in 8 cases.

2. Non-follow up hinders use.
   This is true in 1 case.

3. Managers follow their senior managers in the extent of use.
   This is true in 7 cases out of 8.

THEREFORE, FOLLOW UP SUPPORTS USE.

G) Accountant's Role as an Interpreter.

In this case the accountant does not work as an interpreter. However, it seems that non provision of the interpretation service by the accountant does not hinder use; as 8 managers out of 9 already use their budgets without such interpretation.

However, in all cases the cost investigator provides this service and in 8 cases there is use.

THEREFORE, ACCOUNTANT'S ROLE AS INTERPRETER SUPPORTS USE.

SECTION 4: NOTE ON THE CALCULATION OF ASSOCIATION

As we are dealing with qualitative characteristics, the degree of association is ascertained through the contingency table method.[1] In this case, the degree of association is ascertained through the calculation of Q. This was chosen, as unlike the other measures it ranges from +1 for a perfect positive association, to nil for no association at all, and to -1 for a perfect negative association. Q is defined and computed thus:

$$Q = \frac{(AB)(\alpha\beta) - (A\beta)(\alpha B)}{(AB)(\alpha\beta) + (A\beta)(\alpha B)}.$$

For example, A may be taken to designate the attribute of highly educated in which case α is used to designate the attribute of being poorly educated. B may be taken to designate the attribute of using the budgetary information in which case β is used to designate the attribute of not using the information. AB would mean that managers are highly educated and use their budgets.

$A\beta$ would mean that managers are highly educated but do not use their budgets.

αB means that managers are poorly educated but use their budgets.

$\alpha\beta$ means that managers are poorly educated and do not use their budgets.

This technique is used to establish statistically whether two characteristics are associated, and to measure the degree, direction and nature of such association.

Moreover, since the attributes are based entirely on case studies, the validity of the association "depends on the accurate description of data rather than upon the number of cases or the method of sampling, and there is no need for measures of errors and precision or for tests of significance".[2]

(1) Hagood, M.J. and Price, D.O., Statistics for Sociologists, New York: Henry Holt, 1952. pp. 343-378.

(2) Ibid, p.363.

APPENDIX 'F'

The Historical Development of Management Accounting Information System in Factory 'A'.

The object of this appendix is to present a brief outline of the stages of development of the budgetary information system in Factory 'A'.

The system of management information started in the factory with the introduction of budgetary control system in 1957 (when the new factory was first opened and owned by the group). The system developed gradually to the present system of marginal standard costing. However, marginal costing was first introduced to the factory in 1962 by the new financial director. His main objectives were :

(1) To introduce a group control system on capital, movement of funds, cash and profitability of each factory.

(2) To introduce and unify balance sheet control in all factories.

(3) To introduce movement of funds control in all factories.

(4) and to provide factory top and senior management with information to help them plan and control the factory's activities.

The proposal of the financial director to introduce marginal standard costing has come about through the national evolution of the accounting process. The reasons for this type of costing being adopted are best shown by examining the stages through which the costing system in the factory have developed.

At the time of the opening of the new factory (1957) it was realised that a Revenue Account alone did not provide all the information required to run the business, as it merely disclosed the net results for the period covered by the account. No information was available on such matters as :

a) Whether there was wastage of either material or time occurring at any stage in the manufacturing cycle.

b) Whether every job, or type of work was equally profitable.

It also became obvious that a more realistic system of estimating must be introduced, which in itself would require more detailed information being made available.

The introduction of an estimating system was thought to be of the first importance. Temporary production standards were established and together with a budgeted Revenue Account, machine hour rates were calculated.

Naturally, when an estimating system is installed it is essential to make provision for information to be produced to verify the rates used.

The additional information required by management to verify the estimating rates is provided by a costing system.

Even at this time, certain members of the management were in favour of introducing standard costing but the system decided upon was the more conventional form of job costing. In this form of costing the individual job is taken as the unit of measurement; and all expenses are allocated on this basis with the object of determining the profit or loss on each job. It was soon realised however that the corrugator did not lend itself to this type of analysis, it being impractical to determine the cost of paper put into every job. It was decided therefore that all corrugated board should be credited to jobs at a theoretical (or standard) price. By comparing the cost of input of paper with the summary of board made, it was, however, possible to state the losses on the corrugator as a whole. Actual labour costs were analysed to various jobs from details supplied by the factory. Again it was found more practical to take the labour cost of the corrugator as a whole and apply it to the individual jobs at an average rate. When each job was finished the material and labour costs were summarised. In order to determine the profit on each job it was necessary to charge it with a fair proportion of the overhead expenditure of the business. It was impossible to analyse overhead expenditure direct to specific jobs in order to overcome this, an overhead recovery rate per hour was calculated for each machine and overheads charged on this basis.

The labour under-recovered was made up of stopped time and any difference between the labour rate per hour charged and the actual labour rates paid. Overheads under-recovered were due to the expenses incurred being greater than expenses charged.

This statement was accepted as an improvement on the revenue account in that :

a) It enabled management to compare the profits made job by job,
b) It showed the effect of excess labour and expenditure, and
c) It also showed the amount of scrap made by the corrugator.

This stimulated the desire for further detailed information and subsequent development was designed to supply answers to the following questions :

1) Was the scrap level on the corrugator reasonable?

2) Was the cost of material and labour charged to the individual jobs reasonable?

3) What profit could have been expected?

4) What was the reason for the under-recovery of labour and overheads.

It was obvious from the nature of the additional information required that management was now thinking in terms of information which would enable them to control costs as opposed to historical facts.

It was also realised at this time that if this type of information was to be used for control purposes, it would be needed by the functional heads as quickly as possible. The time lag between production and the preparation of cost statistics is an inherent fault in all historical costing systems. To correct this and in order to provide the additional information required it was decided to develop the costing procedures and to install standard job costing together with the necessary budgets which such a system requires.

This conversation took place in several stages; the first being the preparation of budgets for sales, production and expenses, thus enabling a comparison to be made between actual results and expected results.

The next step was to introduce standard paper prices into the paper records and to convert the budgets into standard labour rates and standard machine hour rates.

These steps went part of the way towards answering the requirements of the management but before the system could be brought to fruition it was necessary to establish studied production standards for all operations. When this had been done the estimating system was brought into line with the new standards. The same standards were also used to prepare daily summaries of machine performance showing indices of efficiency and utilisation.

All postings to job cards were now made at standard, i.e.

The quantity of boards produced were valued at standard board cost.
The <u>standard</u> time to process the item was recorded and valued at the standard labour rates and at the standard overhead machine rates.
On completion of the job, the amounts posted above were compared with the allowances made in the estimate and any variation written off as process losses.

It was becoming increasingly apparent that the 'job' was losing its identity as the sole unit of cost. As stated previously, information calculated on a job basis could not be produced quickly enough to control machine efficiency in the factory. Furthermore, it was considered unsatisfactory as a unit for this type of control, because of the short duration of the average job in each section. It was decided that the daily section performance was a more realistic measure of control, and as this information could be quickly produced, it was adopted. Corrugator waste was controlled in total, leaving only process losses of material and labour to be dealt with on a 'job' basis.

Standard job costing was installed at the factory sometime after the inception of the control system.

It was during this period, however, that market conditions were such as to make it difficult to obtain sufficient sales to fill the capacity of the production unit. The accepted measure of profitability of a given enquiry, i.e. the standard profit, was no longer a satisfactory indication as to whether work should be accepted.

Furthermore, due to the difficult market conditions, volume varied considerably from the budget. In these circumstances, it was extremely difficult for the accounting staff to provide management with a lucid explanation of the overhead volume variance. This moment was therefore ripe for the advancement of the theory of marginal standard costing. In fact this was the first implemented in 1962.

The main difference between absorption standard costing and marginal standard costing is in the method of treating overhead expenses. The marginal theory is based on a more realistic approach to the question of overheads. It follows therefore that material and labour costs are controlled in the same manner as under standard costing.

Under conventional (absorption) costing systems the different behaviour pattern of overheads is ignored. Total overheads envisaged by the budget are allocated to machine sections and then divided by the budgeted number of standard hours in order to arrive at an overhead machine hour rate. Therefore, when actual volume exceeds that anticipated by the budgets, the variable expenses will increase "pro rata" but the fixed costs will remain constant, (i.e. the cost per unit will be reduced). The amount recovered by the cost accounts will be a unit cost as calculated above, multiplied by actual production, which results in an over-recovery of expenses. The converse applies

when volume is lower than the budget. This over or under-recovery is in reality an increase or decrease in the standard profit.

The technique of marginal costing accepts the different characteristics of overheads and separates them between those which vary with production (variable costs) and those that do not (fixed costs). Only variable expenses are taken into account when computing machine hour rates. The total of direct material, direct labour, and variable expenses is called the marginal cost per unit. The difference between the sales value and the marginal cost is called the gross margin out of which fixed expenses have to be met. Any balance remaining constitutes profit.

It will be realised that the main object behind management decisions using this technique is to create as large a gross margin as possible, out of which fixed expenses can be paid.

This facet of management policy is especially valuable in periods of diminishing markets, and/or under utilised capacity. If prices have to be reduced (i.e. the angle of incidence of the sales line decreased) the increase in sales volume required to maintain the profit level is clearly shown.

Because the different characteristics of overhead expenses are ignored under standard absorption costing, these essential facts are very difficult to establish.

Under marginal standard costing each job or type of production will be judged on the amount which it contributes to the gross margin, and overheads are controlled solely by comparison of actual expenditure with budgeted expenditure - volume variances are eliminated.

In order for this control to be effective it is necessary to adjust the budgeted variable expenses up or down proportionally according to the level of production achieved.

This is called 'variable budgeting' and shows the profit which could be expected at the level of output reached. This as mentioned before, was introduced in 1963 on experimental basis, wholly adopted in 1964, but the practice was stopped altogether in 1965 as the basis of measuring cost behaviour and their degree of variability was extremely tentative.

The implementation of marginal standard costing apart from being best suited to the circumstances of the industry, as the variable cost represents 68% of the cost structure, it facilitated understanding of top management of the accounts a great deal and as thus helped them to achieve better control as the confusion of absorption and technicalities of terminology were eliminated. This coupled with a highly developed revenue statement and with constant training and explanations by the financial director and the accountants helped top management to understand the accounts and their use. This also helped them to pinpoint inefficiencies and as thus facilitated managerial control by exception.

APPENDIX 'G'

Sources of Evidence in the Factories Studied.

The object of this appendix is to present the sources of evidence in each of the eight factories studied.

As such, this appendix presents sources of evidence in :

Factory 'A'

'B'

'C'

'D'

'E'

'F'

'G'

'H'

FACTORY 'A'

1. A background study of the production process through visiting the works and getting to know the managers. At this preliminary stage, managers explained the technical implication of the production process.

2. An analysis of the factory's organisational structure, through following sales and production cycles and meeting the managers concerned.

3. All the draft, provisional and approved labour, material, overhead, production, sales, master, long-term, capital, financial and new prject (developments) budgets for 1964 and 1965.

4. Balance sheet forecasts, and planned movement of funds. Also the 1963 actual balance sheets to study the validity of the targets.

5. The variable budgets, for period No.10, 1963 and period No.1, 1964.

6. The provisional budget for 1966.

7. All relevant budget meeting minutes. Secretary's, cost accountant's and management accountant's working papers on budgets, and budget reports.

8. Relevant board meeting minutes.

9. Financial director's report on top management's information system, and a financial analysis of the main problem areas.

10. Management accountant's report on management accounting system and estimation in the company.

11. Analysis of the flow of daily, weekly, monthly and quarterly information systems.

12. Studies of corrugator daily, weekly and summary running reports, machine line running reports, bonus cards, cost collection cards and control accounts for period 12 of 1963.

13. An analysis of factory's financial reports and accounts for periods 9, 10, 11 and 12 of 1963, periods 1, 2 and 9 of 1964, and period 9 of 1965.

14. Analysis of follow up system through attending the management meeting and interviewing managers.

15. Analysis of a sample of scientific standards and the incentive scheme with special reference to the corrugator new and old standards.

16. Analysis of the pricing and estimation process through meeting the estimator and his staff and following the actual estimation process of sample of orders.

17. A paper on productivity given by the works director.

18. An economic study of the market and company's capital requirements by the Works Director.

19. A report on development budget by the managing director. In this respect all reports, estimates, letters, board meeting minutes and all graphs about the new project were studied.

20. Reports on sales and market conditions by the Sales Director for period 10, 11 and 12, of 1963, and period 9 of 1965.

21 Reports on market environments by the Manufacturers' Association. In this respect statistics and graphs on market structure have been studied for the years 1959-1965.

22. Reports on production by the works director for periods 9, 10, 11 and 12 of 1963, periods 1, 2 and 9 of 1964, and period 9 of 1965.

23. Interviews :

a) Group Level: Group Financial Director

b) Top Local Level: Managing, works and sales directors.

c) Accountants: The company's secretary, the management accountant, the cost accountant, and the works accountant.

d) Managers: Sales office manager, sales area manager, sales product manager, estimator and his staff, sales contact staff, sales planner, sales enquiries, sampling and design and development, work study engineer, production planner and staff, two chief maintenance engineers, works manager, case factory manager, new factory manager, transport manager, canteen manager, two sales representatives, purchasing and warehouse manager, quality-controller, bonus clerk and stock record keeper, bonus section staff, and time-checker.

The average interview was about two hours and most managers were interviewed more than once.

FACTORY 'B'

1. A background study of the production process.

2. An analysis of the factory's organisational structure.

3. All draft, provisional and approved labour, material, overhead, production, sales, master, long-term , capital,financial and new (project) budgets for 1964 and 1965.

4. Provisional budget for 1966.

5. All relevant budget meeting minutes.

6. Financial director's report on top management's information system.

7. Management Accountant's report on management accounting and estimation.

8. Analysis of the flow of daily, weekly, monthly and quarterly information systems.

9. Analysis of factory's financial reports and accounts for periods 9, 10, 11 and 12 in 1963, periods 1, 9, 10 and 11 in 1964, and periods 9 and 10 in 1965.

10. Analysis of the follow up system through attending the management meeting and interviewing managers.

11. Analysis of a sample of scientific standards and the incentive scheme, with special reference to the printing machines and the corrugator.

12. Analysis of pricing and estimation process through following the estimation of a sample of sales orders.

13. A report on the development budget by the general manager.

14. Interviews :

Group Level: Group financial director.
Top Local Level: Resident director and general manager.

Accountants : Management accountant, factory accountant and his staff.

Managers : The commercial manager, sales manager, works manager, works superintendent, two senior foremen, two sales representatives, the maintenance engineer, work study engineer, purchasing and warehouse manager, and stock record-keeper.

Most managers were interviewed more than once.

FACTORY 'C'

1. A background study of the technical process

2. An analysis of the factory's organisational structure.

3. All draft, provisional and approved labour, material, overhead, production, sales, master, long term and capital budgets for 1964 and 1965.

4. Budget blueprint plan for 1966.

5. All relevant budget meeting minutes. Secretary's and group cost accountant's working papers.

6. Analysis of Federation of Master Printers' management ratio scheme for 1962.

7. Analysis of flow of daily, weekly and monthly information control systems.

8. Analysis of follow up system through interviewing managers.

9. Analysis of factory's financial reports and departmental accounts for 18 months from January 1964 up to June 1965.

10. Analysis of departmental weekly control statements for last three periods in 1963, all periods in 1964, and 9 periods in 1965.

11. Analysis of a sample of scientific standards and the incentive scheme.

12. Analysis of the pricing and estimation process.

13. Procedure for labour information collection by the company's secretary.

14. Interviews :

a) Group Level : Group financial director, group sales director, group cost accountant and group system designer.

b) Top Local Level : The managing director, new general manager and works director.

c) Accountants: The company's secretary and the factory accountant and his staff.

d) Managers : Sales manager, works manager, estimator and his staff, work study engineer and his staff, production planner, chief maintenance engineer, head of order department, technical manager.

d) Departmental managers : All production departmental managers and transport, warehouse and typography managers.

Most managers were interviewed more than once.

FACTORY 'D'

1. A background study of the technical process.

2. An analysis of the factory's organisational structure.

3. All draft and approved labour, material, overhead, production, sales, master, long-term and capital budgets for 1963, 1964 and 1965.

4. The draft budget for 1966, and the accountant's working papers.

5. Analysis of the British Carton Association Statistical Returns from 1955 to 1964.

6. Analysis of the Federation of Master Printers' management ratio scheme between 1959 and 1963 (except for 1961).

7. Analysis of flow of daily, weekly, monthly and quarterly systems.

8. Analysis of follow-up systems through attending management meeting and interviewing managers.

9. Analysis of the factory's financial reports and departmental accounts for the first two quarters in 1964 and two quarters in 1965; weekly departmental figures for six months in 1964.

10. Analysis of a sample of scientific standards and the incentive scheme.

11. Analysis of the pricing and estimation process.

12. A report by the commercial director on a proposal to buy a new machine.

13. Notes by the accountant and the work study engineer on the new information system.

14. Interviews :

Group level: The group financial director, group sales director, group system designer, group cost accountant and group financial accountant.

Top Local Level : The managing director, the general manager, and the works director.

Accountants: : The company's secretary and the factory's accountant and his staff.

Managers : Sales manager, works manager, chief estimator, work study engineer, production planner, chief maintenance engineer, order department staff, the development manager, chief chemist, all production departmental managers, raw-materials manager, traffic manager, warehouse manager, a sales representative, the personnel manager and his staff, sales correspondence staff.

Most managers were interviewed more than once.

FACTORY 'E'

1. Provisional and approved sales, output, overhead, labour and materials budgets.

2. Circular letter from the financial director to managers about their performances and the preparation of the budget.

3. Departmental monthly statements for periods 11 and 12 of 1964.

4. Balance sheets and final accounts for 1953 and 1963.

5. Interviews : The chief accountant and secretary, the cost accountant, the financial accountant, a senior manager, a service manager, two assistant production managers, three superintendants, and a foreman.

The chief and cost accountants were interviewed several times.

FACTORY 'F'

1. Approved target figures for 1965 budget.

2. Weekly output and cost sheets for the first and part of of the second quarters of 1965.

3. Quarterly overhead statements for the last quarter in 1964, and the first quarter in 1965.

4. Quarterly trading profit statements for last quarter in 1964.

5. Reports of the monthly management meeting.

6. Interviews : The accountant, assistant accountant, the general manager, two assistant general managers, the sales manager, and all production managers.

The accountant was interviewed several times.

FACTORY 'G'

1. Provisional estimates, provisional consolidated factory's overhead budget, and the approved budget for 1965/1966.

2. Factory loading line chart.

3. Copies of circular letters sent by the accountant to managers before the budget year.

4. The last period of 1964/1965 and the first period of 1963/1966 production departmental statements.

5. Minutes of monthly cost meetings.

6. Interviews : The factory's controller, the cost accountant, the senior manager and superintendents of the production department.

The factory's controller and cost accountant were interviewed several times.

FACTORY 'H'

1. The 1965 and 1966 revenue budgets of the department under the study - manufacturing output budget, input budgets of direct labour, materials and factory expenses, productive hours and employees.

2. The actual accounts of the department under the study for the last six months of 1965.

3. Interviews : The assistant superintendent of production engineering services department, a senior member of the department, three superintendents, four foremen, the chief production engineer, the commercial engineer, the division chief cost accountant, and the cost investigator.

The assistant superintendent and the cost investigator were interviewed several times.