

FLEXIBLE BUDGETARY CONTROL AND STANDARD COSTS

Cost Control for Management

BY

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FOREWORD

EARLY in nineteen thirty-four I made my first acquaintance with Flexible Budgetary Control and Standard Costs. When I say my "first acquaintance", I mean a detailed one. I had purchased a copy of Mr. Charter Harrison's book on the subject. It bewildered me, but if it did no more it converted me from opposition to neutrality.

Seven years earlier I had passed my final examination in Costing. One of the questions was, "What do you know about Standard Costs?" It was well for me that Mr. Charter Harrison did not read my answer. I got through, however—one of three out of a considerable number.

Since that time my experience has widened, and I have perforce become an ardent advocate of the use of Standard Costs and Flexible Budgetary Control as being the only practical tool for real managerial control.

It has been my privilege as a consultant to help in developing the method to its present stage of advancement, and this book reveals many new features which I have developed and proved in practice. That practice has included the application and operation of Flexible Budgets and Standard Costs in the following industries—Electrical Engineering; Lighting; Power Generation; Steam and Gas Generation; Aircraft and Aircraft Components; Chemicals; Plastics; Press Shops; Toy Manufacturing; Building; all forms of Textiles—Cotton, Cotton Thread, Wool, Rayon and Silk; Transport; Estate Management; Accounting Machines; Foundries; Clothing; Heavy Engineering; and Weaving, Bleaching, Dyeing, and Finishing. Not once has it failed to provide a complete answer to every problem and an efficient tool of management. Like myself, many converts have been made when once they have grasped the rationality of the methods used.

The method speaks to the practical man in the language which he can understand—the language of the shop floor.

After intensive work in introducing the method into very many firms, ranging from small workshops and garages to factories of a combine employing many thousands of workers, I am convinced that it is the true basis of industrial accountancy, and that it does really serve management and every aspect of administration. It is the basis on which to formulate a uniform accounting method and cost control for an industry. Nothing but good can be derived from the application of the principle of uniform accounting to an industry.

One frequently hears "Yes, but it would not suit my business; it is all right for mass production, but my business is different; we have so much jobbing." All I have to say in reply is that it works for the repair of motor-cars in a garage, and the method has proved ideally suited to a jobbing factory.

In this treatise I have tried to give as broad a picture as possible and to cover all the major principles. The whole of the text is the result of practical experience and application. Theory has been introduced only to make some point clearer. But such a short thesis on the subject cannot hope to cover every aspect or possibility, though perhaps enough

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has been written to point the way. I hope it will be of service to management and the professions, and become a text-book for the student in which he will find theory and practice happily blended to the service of industry and management.

If wide practical experience and close study are sufficient justification for writing a book, then I need not apologise for the appearance of this volume. The principles discussed have been proved in the difficult world of shop experience and competitive business. They have greatly served many a unit in industry; they can serve every industry.

D. F. EVANS-HEMMING

INTRODUCTION

MANAGEMENT'S greatest problem is the attainment of the goal justifying the existence of a business. The success of a company's management is measured by the degree to which the concern continues to reach that goal, and to reach it profitably.

It is true that profit is not the sole objective, but it is also true that, ultimately, markets and the general public measure the status of a company by its ability to continue to operate profitably under current market and monetary values. In short, the criterion is whether the company is able to operate successfully under replacement cost—replacement cost, not only for raw materials, but also for plant and equipment.

Sales-price adjustment is not always a practical solution, particularly in a competitive market. It is possible in a seller's market, or under an absolute monopoly, but these conditions are inevitably short-lived. Over-production and under-consumption bring in their wake ever keener competition, no matter what may be the causes contributing to the ultimate result.

Under such conditions cost must be reduced. The chief cause of high cost is "waste": "waste" by wrong plant utilisation; "waste" of materials; "waste" of labour; "waste" of services; and "waste" caused by unwise expenditures. Cost reduction lies along a triple road:—

- (a) Improved Production Methods.
- (b) Effective Labour and Plant Utilisation.
- (c) Economy of Operation.

Economy of operation involves efficiency in Methods, Labour, and Plant Operation. It means more: it implies rapid turnover of stocks, reduction in the time of the manufacturing cycle, and the wise spending of money.

The art of management is the correct continual use of the four *Ms*—"MONEY", "MEN", "MATERIALS", and "MACHINES"—to attain the company's objective in a competitive market in which values are, for various reasons, continually fluctuating.

In order to reach this objective, management sets a plan, and the plan is embodied in its budget. Through these budgets it seeks to operate at a set or standard cost. By means of cost control it seeks to measure performance against the plan. It produces hours of work; it sells articles that are the product of work effort.

The measurement is, of necessity, a negative measurement. The deviations from plan are measured. The causes for the variances are determined, and constructive management applies corrective action.

There is no merit in the elimination of unfavourable variances, but their existence is a challenge to management. Their existence means that management is not operating to plan, and that the management of the economics of the business is unsound.

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Credit is due, however, to the management when it maintains volume and efficiency, and a favourable variance results. The plan has then been bettered and costs have been reduced.

For this reason the following thesis outlines the principles, and not the detailed applications, by which management can measure performance against the plan. If the principles are understood, the mechanics of the procedure can be adapted to suit any business, and keep operative the factual profitability measurement and project trend, rather than the historical "accounting for" the result.

Before entering upon a detailed examination of the principles involved, a general sketch of Cost Control principles is set out. The object is to obtain an overall picture of the mechanism involved. Then a general examination of requirements is made. From these reviews the essentials of the control structure are built up, and an illustrated example in short form is given, typical of many operating installations, accompanied by a brief explanatory key to each plate comprising the illustration.

That is the pattern of our thesis, and by adopting this new and approved presentation it is hoped that, after a diligent study of the text and charts, Managements, Executives, and Students will be masters of a technique that has proved itself perfectly efficient in practically every type of industry.

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PART I

CHAPTER I

SUMMARY OF GENERAL PRINCIPLES.

A SYSTEM of Flexible Budgetary Control and Standard Costs is an instrument of Management, and in considering its use it is necessary to define what is meant by the management of a business. The management of a business is the direction of its affairs to achieve a specified objective. Just as navigation charts and instruments are necessary to enable a captain to bring his ship to port, so an effective system of Cost Control, such as that described in this book, is necessary to enable the management of a business to attain its objective. The making of a good profit by a business does not necessarily indicate good management, for its prosperity may be due to fortuitous and temporary circumstances, and its management may be poor. In effective management, in which Flexible Budgetary Control and Standard Costs are used, there are five essential phases :—

The Plan.

The necessity for any organisation to have a policy needs no emphasis. This plan is made after careful study of all the factors which affect the business, and may consist of one master plan and a number of subsidiary plans. For example, a business may plan to achieve a total profit of £50,000 in the year, based on subsidiary plans for a certain volume and price level of sales, certain price levels for materials, the attainment of certain outputs in the departments, and also for other operations. The value of the study and thought necessary in order to make these plans is of itself considerable.

The Measurement of Performance.

Having established the plans it is necessary to measure the performance in attaining the planned objectives. This measurement also extends to the measurement of the divergence as analysed to its different causes. For example, if the plan called for the production of a certain department for a four weeks period at a cost of £4,539, measurement might show that the actual cost of that production was £4,926 and that the divergence, or variance, in the form of excess cost was £387, of which £108 was lost due to the low volume of output, £167 due to causes within the control of the departmental manager and £112 in respect of revisions of the original plan.

Investigation.

The records that are maintained as a routine for the measurement of performance cannot of necessity convey all the information that is required by the Management of



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a business, but must be supplemented by *ad hoc* investigations to reveal causes that are not disclosed in the records. For example, the routine measurement of results in a department may reveal that the actual cost of clerical labour was £62, as against a planned cost of £40, but investigation would be necessary to reveal that this excess cost of £22 was due to the prolonged employment of a temporary clerk who had been engaged to deal with an abnormal rush of work.

Action.

The measurement of performance and subsequent investigation continuously indicates the points at which action should be taken by the Management. In some cases the action may be negative, in that a decision may be taken to do nothing for the present, but so long as this is a decision taken after consideration of the results of measurement and investigation, this may well be the correct course. In other cases positive action must be taken. For example, as the result of the investigation of the excess cost of £22 in clerical labour revealing that the services of the additional clerk were not justified, action should be taken to improve the clerical methods and dispense with the services of this clerk. Expenditure upon any system of Cost Control is only warranted to the extent that it provides information upon which the Management bases its action whether positive or negative.

Revision.

In some cases the measurement of performance may indicate that, due to external circumstances over which the business has no control, the plans of the company may have to be revised. While one of the essentials of management is having a policy and sticking to it, this conception must not be pushed to the extreme of rigidity. In some cases plans must be revised in certain particulars, and in exceptional cases the change in circumstances may be so great as to warrant the preparation of a completely new set of plans. As an example of a revision in certain particulars, a National Wages Award may necessitate a revision of the plan for Labour Costs and a revision of the Sales plan by the introduction of increased selling prices.

In all these phases of management Flexible Budgetary Control and Standard Costs is the system of recording and presenting the necessary information to Management. It is also a system of accounting which is designed to conform with the principles of management laid down as Plan, Measure, Investigate, Act and Revise.

Decentralisation of Cost Responsibility.

One essential feature of Flexible Budgetary Control and Standard Costs is the decentralisation of cost responsibility to departments, and therefore to departmental managers. In some cases the manager of a department may be known as the foreman, but that does not alter the fact that under Flexible Budgetary Control and Standard Costs, as the executive responsible for the operations of the department, he would be responsible for its results as revealed by the measurement of actual performance in relation to the plan for the production and cost expenditure of the department. As a plan is prepared for each department the departmental executive is consulted, and by this means his interest is aroused in operating his department according to the plan laid down, this interest being sustained by the con-

tinuous measurement of his actual performance. Under Flexible Budgetary Control and Standard Costs the practice of concentrating in a secret inner office cost records too voluminous and detailed to be used by those to whom access is granted is swept away, and replaced by a system reducing this information to manageable proportions and distributing it to those executives directly concerned and aided by the information.

Flexibility.

Flexibility is, as its name implies, another main feature of Flexible Budgetary Control and Standard Costs. As the plans, or budgets, are used to measure performance, the budgets must be capable of adjustment so that they can represent a fair measure of performance under different conditions of activity. For example, the plan for a department may call for the production in a four weeks period of 10,000 units at a Departmental Expense Cost of £3,000—that is, 6s. each. If in any period a reduction of sales caused 8,000 units only to be produced, at this activity of 80% the budget for Departmental Expense must be capable of adjustment to indicate the cost allowed to the departmental executive as a measure of his performance. As certain of these expenses, such as Depreciation, remain fixed and cannot be reduced, the cost allowed would be greater than 8,000 at 6s. = £2,400, and might be £2,600, the excess of £200 representing the effect of the fixed element in the expenses. Apart from flexibility in respect of changes in activity, the system outlined in this book provides that the budgets should also be flexible in respect of the revision of plans, which has been described as one of the phases of management. By means of the technique described later in this book, a change in circumstances necessitating a revision of plans need not entail the scrapping of the existing budgets and their replacement, but, instead, the existing budgets are maintained and supplemented in respect of the effect of the alteration of plan. This flexibility makes it possible to employ Budgetary Control and Standard Costs in those industries where the usage of a wide range of materials and the manufacture of a large number of different products and components would render the frequent resetting of product standard costs too expensive of clerical effort to be practicable.

The Plans of a Business.

The necessity that management should be based on the principle of working to plan extends throughout a business organisation, so that every detailed operation is part of a plan. These plans take various forms as follows:—

Budgets.

This term is commonly used to denote a financial plan, such as the annual National Budget, but it may also denote a plan expressed in quantities. For Budgetary Control and Standard Costs in business the following budgets are normally employed:—

(1) Sales Budget.

Sales are the life-blood of a business, and no plans can be made for the operation of a business without a plan of sales expressed in a Sales Budget.

(2) Production Budget.

Having established a plan of Sales, a Production Budget can then be prepared setting out the products to be manufactured or the units of service to be supplied.

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There is, however, no one set order in which the budgets should be prepared, and in certain cases the Production Budget may be set before the Sales Budget. It is also possible that, having provisionally set the Sales Budget, on preparing the Production Budget it becomes obvious that the Sales Budget must be altered. The important factor in the preparation of the different budgets is not so much the order of time in which they are prepared, but the necessity for these budgets to be in balance and form one logical master plan. In the preparation of the Production Budget regard will be had to the capacity of each department and the load of work on each department entailed by the budgeted production.

(3) *Production Cost Budgets.*

When the production load on each department has been planned, the cost of that production can be budgeted. At this stage it is recommended that the departmental executive should be consulted and his agreement secured to the budget set. The departmental cost budgets must be set for :—

(a) *Direct Labour*, specifying the number of personnel of each grade and the budgeted rates of pay, which would be extended to give the budgeted direct labour cost at the level of activity represented by the production budget.

(b) *Indirect Labour*, specifying the number of personnel of each grade to be engaged on each type of work, such as Tool Setting, Inspection, etc., extended by the budgeted rates of pay to give the budgeted labour cost.

(c) *Departmental Expenses*, that is those expenses other than Indirect Labour incurred directly by the department, and therefore coming within the control of the departmental executive. Amounts are budgeted separately for each classification of expense, and in addition the extent to which each expense is budgeted to vary with changes in the level of activity.

(d) *General Works Expenses*, that is those expenses which are incurred by other departments than those directly engaged on production, and also expenses incurred by the works in general. Each expense and the manner in which it varies with change in the level of activity is budgeted separately.

(4) *Material Prices Budget.*

The planned cost of production cannot be completed without budgeting the material costs, and this entails setting a budget of Material Standard Prices.

(5) *Sales Department Expenses.*

While the accounting treatment of Selling Expenses differs from that of Works Expenses, it is equally important to control the expenses of the Sales Department, for which budgets must be prepared as for the Works Departments.

(6) *Administration Expenses.*

The same considerations as apply to Selling Expenses apply equally to Administration Expenses.

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Standard Costing Rates.

Standard Costing Rates are derived from the Departmental Budgets representing for each department, or cost centre within a department, the budgeted cost of one unit of production—for example, of a standard hour of work. It is common to prepare departmental standard costing rates in three parts—Direct Labour, Departmental Expenses (including Indirect Labour) and General Works Expenses. For example, if the budgeted total cost of the Centre Lathes Section of the Machine Shop is £431 and the budgeted production 1,150 standard hours, the standard costing rate is as follows:—

Element of Cost.	Budget, £.	Production in Standard Hours.	Costing Rate Pence per Standard Hour.
Direct Labour	144	1,150	30.0
Departmental Expense	97		20.2
Works General Expense	190		39.7
	<u>£431</u>	<u>1,150</u>	<u>89.9</u>

Product Specifications.

The Product Specification, which is known by many other different names—such as, for example, Operation Layout—is the technical plan for the manufacture of an article or component. It is prepared by the Technical Departments, and specifies the material content of the article, the operations or processes and the departments and cost centres in which performed, and the time to be taken on each operation.

Product Standard Cost.

The Product Standard Cost is the plan of the business as applied to each of the products and components manufactured, and is based on the Product Specification. The specified material is extended by the appropriate standard prices, and the operation times by the standard costing rates for the departments in which carried out. In the system outlined in detail in this book Production Costs only are included in the Product Standard Cost, and Selling and Administration Expenses are not included.

The Measurement of Performance.

The measurement of performance is a vital part of management as already described, and is the particular concern of the Accountant or Cost Accountant of the business. There are two parts of this function: first, the recording and calculation of the measurements of performance, or Accounting as it may be briefly described; and secondly, the presentation of this information to the Management.

Accounting.

It is strongly recommended that the operation of Flexible Budgetary Control and Standard Costs should be carried out by the well-tried Double-Entry Accounting technique, and that these Cost Accounts should be integrated in the Financial Accounts of the business.

Preparation of Management Statements.

The statements presented to the Management of a business are largely decided by the particular circumstances of the business, and to some extent by the mental approach to problems normally followed by members of the Management. Statements can be provided for Management at all levels, from the section foreman to the managing director; and in respect of all periods of time from the Weekly, or even Daily, Statement of Labour Control Statistics, to an Annual Review of Operations. It is recommended that although certain simple statistics can be presented weekly at the foreman level, the normal period for the measurement of performance should be a four-week accounting period. This arrangement has the advantage that the period always ends at the same time each week. The most convenient time of the week, such as at the week-end, which is a natural arrangement and normally coincides with the end of the wages week, can then be selected for this purpose. In addition, the four-weekly period bears the advantage that it facilitates comparison between the performance of one period and another; but, on the other hand, there is some disadvantage, in that a year of thirteen periods is not divisible into intermediate periods, and that the periods are divorced from the calendar months in terms of which it is usual to think of the longer periods of time. The illustrations in this book have been based on the four-weekly period. Examples of important four-weekly management statements which are capable of general application in industry are:—

Departmental Operating Statement.

This statement is a measure of the performance of a department, being a comparison of the production of the department for the period with the budgeted production, and of the actual costs incurred by the department with the budgeted, or standard, cost value of the production, the difference, or variance, between the two values being analysed to its causes. This statement serves to provide a measure of performance to the departmental executive and to the higher Management, to indicate the points to which managerial attention should be given, and to sustain the departmental executive's active interest in cost control. The results shown can also be used as the basis of incentive remuneration to the departmental executive.

General Works Operating Statement.

This statement is a comparison of the budgeted General Works Expense of the production for the period with the actual expenditure, the resultant variance being analysed to its causes.

Summary Operating Cost Statement.

This statement is a summary of all the departmental operating statements and the general works operating statement, so that it presents in small compass a picture of the whole plan of the production cost for the period and the analysis of the total variance to its causes. The Management can then see the extent of each kind of variance and the departments in which it has been incurred.

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Sales Summary.

This statement shows in concise form the sales results for the period. It compares the sales budgeted with the sales actually achieved, and indicates the cost of sales and the gross profit of the actual sales in different markets. It is essentially the overall measure of the performance in carrying out the sales plan.

Profit and Loss Statement.

This statement is the climax of the information presented to Management, indicating in broad figures the final results of the operations of the business for the period. Under a system of Flexible Budgetary Control and Standard Costs this statement is not confined to a recital *in vacuo* of income, expenditure and profit or loss, but it is designed to show the profit or loss actually made in comparison with the planned profit, and to demonstrate why this planned profit was either surpassed or not achieved. The Profit and Loss Statement gives the overall measurement of the operations of the business, and its story is detailed in the other management statements.

Investigation.

It must be recognised that it is hardly possible, and certainly not economic, for any control system to be established which will have on tap all the information that is likely to be required by Management at some time or another. Only that information which is required continuously should be the subject of continuous recording, and information that is required once and for all should be ascertained by *ad hoc* investigations or studies. It is also true that there are cases where information required for the Management is better obtained by a technical study than by keeping records. Flexible Budgetary Control and Standard Costs is designed to provide a smaller volume but a more effective quality of information for Management, and it is inherent in its conception that the information produced must frequently be followed by investigation. For example, in the Grinding Section of the Machine Shop, the Departmental Operating Statement for a particular period may indicate a loss due to Extra Allowances of £17 on work of a standard cost value of £97, but it does not indicate on which particular jobs this loss has arisen or the causes of the allowances. This is a matter for investigation, perhaps partly in the office on the primary wages records, and partly in the Grinding Section on the information that lies outside the records. It is essential to recognise the limitations of records and the necessity in many cases to reach beyond the records to obtain all the information necessary as a basis for action. There is an incentive to the departmental executive to investigate on his own account when he realises that under this system of Budgetary Control he has a responsibility for the costs of his department, but, in addition, the results shown in the Departmental Operating Statement may prompt an investigation from above.

Action.

The action, which is indicated by measurement and investigation as necessary if the plan for the business is to be achieved, may take many forms. If the results of the operations of the business for a four-weekly period, as represented by the statements previously

described for submission to Management, are considered at a meeting attended by all the responsible executives and held within a reasonably short time after the end of the period, effective action is more likely to be taken. The knowledge that his results are being considered at a meeting in front of his colleagues spurs each executive to make the best showing possible by taking action beforehand to correct anything that threatens to go wrong. Such meetings also make possible concerted action where, as frequently happens, a deviation from plan in one department may be due to events in another department. It does happen that at such meetings executives may seek to excuse themselves by passing the responsibility for deviations to their colleagues, but in an open meeting attended by all the responsible executives the true cause can almost invariably be established and the corrective action taken. It is essential that all executives, and particularly the lower ranks, should be impressed with the necessity for taking action, and not regarding certain conditions as unavoidable. For example, a departmental foreman may accept a low efficiency in one of his sections as being due to poor operators, whereas he should investigate why the operators are poor, and by training them in better methods, putting them right psychologically or taking whatever other action is necessary, make them into good operators.

Revision.

As already described, the system of Budgetary Control and Standard Costs which is advocated in this book is sufficiently flexible to accommodate revisions of the plans of the business. The principle of accounting for Revisions is that the original, or basic, budgets and standard costs are still maintained; the financial and quantitative effects of any revision of plans are reflected in a parallel Revised Budget; and the actual effect upon performance measured separately as a Revisions Variance. For example, in the Operating Statement of Dept. A. Machine Shop illustrated on Plate 6, Reference 23, the plan for this department has been revised in respect of a provision of £40 for Holiday Pay, and £50 for Scrap and Rectification, which by an oversight had been omitted from the original plan. In this illustration the Original Budget and the Revision are shown in parallel columns, and the effect of this revision of Departmental Expense upon the results for this particular period is shown in the Variance Columns as a Revisions loss of £86. This principle has certain advantages. By maintaining the original budget in being, a measure is available which has the essential quality of being constant. The effect of the revision of plans is clearly shown. It eliminates the necessity for extensive clerical work whenever the plans of the business are changed.