AN INTRODUCTION TO BUDGETARY CONTROL STANDARD COSTING MATERIAL CONTROL AND PRODUCTION CONTROL

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PROBITAS·ACCURATIO·JUSTITIA

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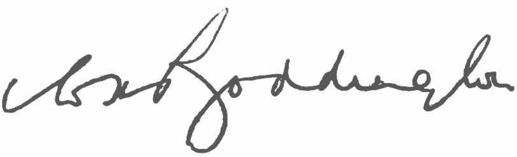
FOREWORD BY THE PRESIDENT

The main purpose of Cost Accounting is to assist Management. The Council have this end in view when selecting subjects of planned study as the bases of research by the Branches—hence the title for one session, of " Standard Costs, Production and Material Control."

The Branches undertook this work with great enthusiasm and many valuable contributions were received. The resulting book has been correctly styled an introduction to the subject ; it is not intended to be an exhaustive treatise.

Those who are preparing for membership of the Institute should find this publication of great assistance in acquiring knowledge of accounting methods which are playing, and will play to a much greater extent, an important part in Industry.

The thanks of the Council and the Institute are due to those Branches and individual Members who took an active part in the preparation of the subject matter of this book. I am confident that it will prove a worthy addition to Cost Accounting literature.



President.

April, 1950.

SECTION A—INTRODUCTION

The subject of this publication, Budgetary Control and Standard Costing, was assigned by the Council of the Institute of Cost and Works Accountants to the Branch Research Groups for the planned study during the Session 1946/47. The subject was defined to include " Budgetary Control, Production Control, Material Control, and Standard Costing, and their interrelation in theory and in practice."

The reports submitted by the Branch Research Groups were co-ordinated and a draft booklet entitled " Budgetary Control, Standard Costing, Material Control, and Production Control " was submitted to the 19th National Cost Conference in May, 1948. The draft booklet was considered at the Members' Session of the Conference, and the discussion at that session, together with subsequent contributions from members embodying criticisms of the draft and suggestions, formed the material for the preparation of this revised edition.

The contents of this publication now represent a summary of the present knowledge of the members of the Institute, in so far as it has been made available to the Institute, on the subject of Budgetary Control and Standard Costing, together with a general statement on Production Control and Material Control emphasizing those aspects with which the Cost Accountant is concerned, more particularly in the operation of Budgetary Control and Standard Costing.

The technique of Cost Accounting is developing rapidly and this publication is presented as a first edition, which may serve as the basis for subsequent editions embodying future developments. Moreover, while it has been prepared and issued with the consent of the Council of the Institute, its contents must not be regarded as an official expression of the views of the Council.

Certain important principles stated in this publication have been illustrated. A Standard Cost Accounting System is shown in the appendices, and reference may be made to the pertinent paragraphs in the brochure which describe the operation of such a system.

SECTION B—BUDGETARY CONTROL

Relationship between Budgetary Control and Standard Costing

1 Certain basic principles are common to both Budgetary Control and Standard Costing. They are—

(*a*) the establishment of a predetermined standard or target of performance ;

(*b*) the measurement of actual performance ;

(*c*) the comparison of actual performance, in detail and in total, with the predetermined standard ;

(*d*) the disclosure of variances between actual and standard performance and the reasons for these variances ;

(*e*) the suggestion of corrective action where examination of the variances indicates that this is necessary.

By common usage the application of these principles 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.

2 While Budgetary Control and Standard Costing are inter-related, they are not absolutely inter-dependent. 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 in conjunction with Standard Costing. On the other hand, Standard Costing pre-supposes the existence of defined conditions within which the activities of the organisation are to be carried on and which are normally recorded in the Budgets of the business. In these circumstances, if there is no formal system of Budgetary Control in operation, Standard Costing can be carried out only by defining these conditions as part of the Standard Costing procedure. This is tantamount to the creation of Budgets, but as these are not fully utilised in the absence of formal Budgetary Control, they are likely to be imperfectly drafted, with a consequent limitation of the value of the derived Standard Costs.

Definitions of Budgets and Budgetary Control

3 A Budget can be defined as " A financial or quantitative interpretation prior to a defined period of time, of a policy to be pursued for that period to attain a given objective."

4 Budgetary Control can be defined as " The establishment of departmental Budgets relating the responsibilities of executives to the requirements of a policy, and the continuous comparison of actual with budgeted results, either to secure by individual action the objective of that policy or to provide a basis for its revision."

The Objectives of Budgetary Control

5 The main objectives of Budgetary Control are normally as follows :—

(*a*) To plan and control the income and expenditure of manufacturing and trading operations so that the most practicable profit is obtained ;

(*b*) To plan and control the Capital Expenditure of a business ;

(*c*) To plan and control expenditure on Development and Research in so far as such expenditure is not applicable to normal manufacturing and trading operations or is not covered by a Capital Expenditure Budget ;

(*d*) To plan and control the financing of a business so that adequate working capital, including liquid resources, is available for carrying out the policy of the business ;

(*e*) To act 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.

Sections of a Master Budget

6 The policy of a business for a defined period represented by the Master Budget, is detailed in subsidiary Budgets, of which the following are in common use :—

(*a*) Sales Budget.

(*b*) Production Budget.

(*c*) Plant Utilisation Budget

(*d*) Production Cost Budget.

(*e*) Selling and Distribution Cost Budget.

(*f*) Capital Expenditure Budget.

(*g*) Development and Research Budget.

(*h*) Personnel Budget.

(*i*) Purchasing Budget.

(*j*) Cash Budget.

(*k*) Budget Summaries.

Sales Budget

7 The Sales Budget is a forecast of total sales, expressed in money and/or quantities, which may be prepared under the following classifications or combination of classifications :—

(*a*) Products or groups of products.

(*b*) Areas, towns, salesmen and agents.

(*c*) Types of customers, as for example :—

(i) National Government ;

(ii) Local Government ;

(iii) Export ;

(iv) Home wholesalers ;

(v) Home retailers.

(*d*) Periods (months, weeks, etc.).

The classifications used in any particular business depend upon the selling methods and the structure of the selling organisation.

8 The Sales Budget is set after consideration of such matters as—

(*a*) General business conditions as indicated by :

(i) national and international economic statistics ;
(ii) international relations ;
(iii) political influences.
(iv) reports from salesmen ;

(*b*) Special conditions affecting the particular business, as, for example, the opening of a provincial television transmitter which affects the demand for television sets.

(*c*) Action taken by the business, such as :

(i) Addition to salesmen or agents ;
(ii) Institution of advertising campaigns ;
(iii) Alterations to the delivery period, design, or packaging of products, or to the production capacity of the factory ;
(iv) Introduction of new products ;
(v) Employment of Market Research.

(*d*) Available supplies of bought out finished goods for re-sale.

(*e*) Elasticity of demand for the products of the business as actuated by price changes.

(*f*) Works or plant capacity.

Production Budget

9 The Production Budget is a forecast of the production for the period, based upon—

(*a*) the Sales Budget ;
(*b*) the production capacity of the factory ;
(*c*) the planned increase or reduction of finished stocks ;
(*d*) the policy governing the manufacture or outside purchase of parts.

The Production Budget is expressed in terms of standard hours converted to money which with the addition of material and profit gives the sales value. In certain cases it is more commonly expressed in units of quantity.

10 The total production set forth in the Budget may be analysed according to—

(*a*) products or groups of products ;
(*b*) department of manufacture ;
(*c*) period of production (months, weeks, etc.), or to a combination of these headings.

Plant Utilisation Budget

11 The plant Utilisation Budget represents in terms of working hours, weight, or other convenient unit, the plant facilities required to carry out the programme laid down in the Production Budget. The main purposes of this budget are as follows :—

(*a*) To determine for the budget period the machine load on departments, groups of machines, and in certain cases, individual machines;

(*b*) To indicate the overloaded departments with a view to taking corrective action such as :—

(i) the application of short term expedients, e.g. overtime working;
(ii) the transfer of operations to other departments where facilities, while not so suitable, are available ;
(iii) the placing of work with sub-contractors ;
(iv) the extension of plant.

(c) To indicate any amendment necessary to the Sales and Production Budgets :

(i) where it is not possible to increase production facilities by any of the foregoing expedients ;

(ii) where spare capacity is available and it is desired to direct the efforts of the Sales Department to obtaining orders which require the use of this capacity.

Production Cost Budget

12 The Production Cost Budget is a forecast of the cost of the production planned in the Production Budget.

13 To derive the maximum benefit from Budgetary Control, it is advised that the Production Cost Budget be analysed departmentally according to responsibility. Every item of cost then becomes the responsibility of a person whose duty is to ensure that expenditure is controlled and does not exceed the allowance prescribed.

(*a*) It is a principle that items of expense should be included on a person's budget only when that expense is actually incurred by departments or functions under his control and where the expenses can be measured (e.g. electricity where there are separate departmental switches and meters).

(*b*) Where expense is incurred in a department but is not controllable or measurable therein (e.g. electricity where there are no departmental switches or meters) it may be made the responsibility of a defined official.

(*c*) Where an executive is responsible for a group of departments or functions, his section of the budget may be further analysed (and in some cases sub-analysed) to his subordinates.

14 The Budget should be so constructed that when it is compared with actual results the variance can be analysed to show how much is due to variations in the quantity of material consumed and in personnel employed, and how much is due to variations in material prices and wage rates.

15 The Production Cost Budget is normally prepared under headings of elements of cost as well as by departments :

(*a*) *Direct Material Cost*

(i) Where a Standard Costing System is in operation the Direct Material Element of the Budget can be calculated by applying the Standard Direct Material Costs to the quantities laid down in the Production Budget.

(ii) Where a Standard Costing System is not in use, the Direct Material Cost of the budgeted production can be obtained from estimated costs or from records of previous costs adjusted for estimated cost fluctuations.

(*b*) *Direct Labour Cost*

(i) Where a Standard Costing system is in operation, the Direct Labour Element of the budget can be computed by applying the Standard Direct Labour Costs to the quantities laid down in the Production Budget.

(ii) Where a Standard Costing system is not in use, the Direct Labour Cost of the budgeted production can be formulated from estimated costs or from records of previous costs adjusted for cost fluctuations which are likely to occur.

(*c*) *Overhead Expenses*

The Departmental Overhead Expense Budgets are normally based upon the budgeted production but in certain cases they are also based upon other budgeted activity. For example, the Works Engineering Department Budget may take cognizance of extensive work to be done in accordance with the Capital Expenditure Budget, the inclusion in respect of such work being transferred from the Production Cost Budget to the Capital Expenditure Budget when preparing the budget summaries.

The Overhead Expense Budget of each department should be analysed by expense classifications to facilitate detailed comparison with actual results.

Where the principle of flexible budgeting is followed the expense classifications should be defined within the following classes :—

Fixed Expenses, i.e., those which tend to remain the same irrespective of changes in the volume of production.

Variable Expenses, i.e., those which tend to vary in direct ratio to the volume of production.

Semi-variable Expenses, i.e. those which tend to vary with, but not in direct ratio to, volume of production.

It is recommended that in the Overhead Expense Budgets each classification of expense should be compiled so far as is practicable, in units (e.g. gallons of water, man hours of indirect labour, etc.) and then converted into financial terms by the application of the budgeted prices for materials and services, and budgeted rates of pay for labour. It is also recommended that the budget for each expense should be set, wherever possible, from a technical study of its incidence instead of records of past experience. Consideration should also be given to such matters as :

the effect of national or local wage agreements which are likely to come into effect in the budget period ;

planned changes in methods (e.g. plans for introducing conveyors may justify a reduction in the budget for Indirect Labour).

The Selling and Distribution Cost Budget

16 The Selling and Distribution Cost Budget is a forecast of the cost of selling and distributing the goods, or services, of the business for the budget period.

17 This Budget is based in general upon the volume of sales planned in the Sales Budget, but consideration should be given to expenditure which may arise from long-term policy and may not be productive within the budget period. For example, an expensive advertising campaign may be planned for the budget period but its benefits may accrue mainly in subsequent periods.

18 The principles applicable to the form of the Production Cost Budget are also applicable to this budget.

19 Certain costs of Selling and Distribution, such as for example, part of the cost of a Transport Department, may in the first place be budgeted as a constituent part of the Production Cost Budget, as a matter of accounting convenience and in order to have one control upon the expense of that

department. This cost should be transferred from the Production Cost Budget to the Selling and Distribution Cost Budget when preparing the Budget Summaries.

20 For the detailed treatment of Selling and Distribution Costs reference may be made to the booklet on *The Problems of Selling and Distribution Cost Accounting*, published by the Institute of Cost and Works Accountants in 1940 (2nd Edition (Revised) May, 1949).

Capital Expenditure Budget

21 The Capital Expenditure Budget is the planned outlay on fixed assets such as lands, buildings, and plant and machinery.

22 It may be decided to incur capital expenditure as a result of—

(*a*) an overload on the production facilities of certain departments as indicated by the Plant Utilisation Budget ;

(*b*) the long-term policy of the business having regard to technical developments and the potential demand for certain products.

23 The Plant Utilisation Budget may indicate that in certain places present capacity is fully loaded, whereas in other places there are considerable idle facilities. Where this is so, the capacity of the factory as a whole may be capable of much expansion with relatively little capital expenditure.

24 When reviewing proposals for incurring capital expenditure to increase production capacity, careful consideration should be given to the following factors and their net effect on the Budget Summaries :—

(*a*) Will it be necessary to reduce selling prices to dispose of the greater output ?

(*b*) How much will the increase in output affect costs of production ?

(*c*) Will it be necessary to increase Advertising and Selling Expenses—

(i) as an annual total, or

(ii) as a cost per unit of product ?

25 Capital expenditure may be necessary for the supply of new plant which will cheapen production. The expenditure required can be related to the savings expected to arise from the installation of the plant (e.g. a machine costing £1,200 may give a saving of £50 a month and thus pay for itself in two years. In assessing net savings for this purpose consideration must be given to the effect of taxation).

26 If the total cost of the projects requiring capital expenditure is beyond the finance available, some system of priorities may be necessary. The time a project will take to pay for itself may be an important factor in deciding which projects are included in the Budget and which are rejected or suspended.
A project which will pay for itself in 18 months normally receives preference over one which requires 5 years.

27 The Capital Expenditure Budget may be for a longer period than the other budgets (e.g. the Sales Budget may be for one year ahead and the Capital Expenditure Budget for 5 years ahead). Where this is so the Capital Expenditure Budget is sub-divided into the same periods as the other budgets so as to facilitate the preparation of Budget Summaries.

Development and Research Budget

28 This Budget is the planned outlay on Development and Research, in so far as this work is not regarded as directly incidental to the existing manufacturing and trading operations of the business.

29 The Budget defines in terms of money the permissible limits within which activities are to be pursued and the directions which they are to take.

Personnel Budget

30 The Personnel Budget represents in terms of money, number and grades of personnel, number of working hours or other appropriate units, the Direct and Indirect Labour required to carry out the programme laid down in the Sales, Production, Capital Expenditure, and Development and Research Budgets.

31 The main purposes of this Budget are—

(*a*) to assist in the efficient management of labour—

(i) by defining the requisite labour force for the period ;
(ii) by stabilising the proportion of direct and indirect workers ;
(iii) by providing the conditions necessary to maintain labour turnover at its minimum :

(*b*) to facilitate the management of the finance of the business by defining the wages bill for the whole or parts of the budget period.

Purchasing Budget

32 The Purchasing Budget states the purchases which must be made to achieve the complete Budget Plan. These represent the requirements of direct and indirect material, purchased services, and of finished goods for resale, as set out in the Sales, Production Cost, Capital Expenditure and Development and Research Budgets, adjusted in respect of—

(*a*) any planned increase or reduction of inventories of raw materials, supplies, or bought out finished goods ;

(*b*) purchase orders already placed ;

(*c*) material to be manufactured within the business as distinct from that purchased outside.

It is recommended that as far as possible these requirements should be expressed in terms of quantities as well as money.

33 The main purposes of this budget are—

(*a*) to enable the Purchasing Department to plan its purchases and place long term contracts where advantageous, taking into consideration the present market position, and the likely future trend of prices, locally and elsewhere ;

(*b*) to record the material prices on which the plan represented by the budgets is based ;

(*c*) to facilitate the management of the finances of the business by defining the cash requirements in respect of purchases for the budget period and for shorter terms.

Cash Budget

34 This budget is the plan of the receipts and payments of cash for the budget period and for shorter terms, drawn up so that the balance can be forecast at regular intervals.

35 The main purposes of this budget are—

(*a*) to ensure that cash is available as required to enable the business to be carried on ;

(*b*) to indicate any necessity to obtain additional finance and the circumstances on which a decision as to its form may be taken ;

(*c*) to indicate any surplus funds that may become available for investment outside the business.

36 This budget is prepared from the following plans :—

(*a*) Cash requirements as laid down in the Personnel and Purchasing Budgets, taking into consideration the policy of the business with regard to the payment of suppliers' accounts and the cash discount policy.

(*b*) Cash requirements for other purposes such as the payment of income tax, dividends, etc.

(*c*) Cash receipts from customers, based on the Sales Budget, and consideration of the policy of the business regarding the extension of credit to customers and the anticipated credit conditions of the country in general.

(*d*) Cash receipts from other sources such as dividends on trade investments, rents, etc.

Budget Summaries

37 Dependent upon the activities of the business being the subjects of comprehensive sectional budgets, such as those heretofore specified, these budgets can be summarised to produce—

(*a*) forecasted Profit and Loss Account ;

(*b*) forecasted Profit and Loss Appropriation Account ;

(*c*) forecasted Balance sheet.

The value of these statements lies in the presentation in a familiar form of the anticipated overall results of the plan of operations for the budget period.

The Budget Period

38 There is no general rule governing the selection of the period of time for the budget, which is decided by the particular circumstances of the business. For example, budgets of industries which are influenced by fashion or relatively short period changes in consumer demand, require a different approach from that found in the industries involving long term expenditure with relatively little change in product design. Examples of two such industries are boot and shoe manufacture—which tend to adopt short period budgets—and telephone construction—long period budgets.

39 One year is a natural period, and the management of a business, prompted partly by the publication of annual accounts, tends to think ahead, and plan, in terms of one year.

40 Long term budgets may be supplemented by short period budgets.

(*a*) Long term budgets of three to five years may be supplemented by short period budgets of one year or less.

(*b*) An organisation working on a main budget for one year may use short term budgets covering one month.

(*c*) A Capital Expenditure Budget may be set for three years or more, while the general budgets may be set for a shorter term, for example, one year.

41 To obtain full benefit from Budgetary Control it is necessary that the main budgets should be supplemented by short period budgets. For example, the control of the cash position may require that cash requirements and receipts should be budgeted monthly.

42 The period of time covered by a budget, and the resulting comparative statement of actual and budgeted expenditure, should be largely determined by the requirements and the outlook of the person whose activities it plans. For example, a foreman may need a weekly budget and report on certain costs because he exercises day-to-day control over such expenditure, while a Departmental Manager with his broader outlook may not be so much interested in short term fluctuations.

43 Where a long term budget is possible, it has advantages such as—

(*a*) material requirements are known for a long period ahead enabling favourable purchase terms to be obtained ;

(*b*) long production runs are possible with consequent economies such as—
  (i) the reduction in the time taken in changing machine set-ups ;
  (ii) the specialisation of plants, tools and labour force, resulting in higher output per man hour or machine hour.

44 As distinct from setting budgets for a definite period of time, the technique of Flexible Budgeting may be employed whereby budgets are established as current for an indefinite period of time and based on a general plan of operations. For example, a foundry may set its budgets for an indefinite period based on a normal production of, say, 10,000 tons of castings a year. Flexible Budgeting may be employed to adjust Budgets to current conditions, e.g.

(*a*) Changes in the volume of work performed.

(*b*) Seasonal variations.

(*c*) Length of working period.

(*d*) Bad conditions which it is planned to rectify but which must nevertheless be taken into account for the short term.

Budgets may need to be revised to allow for :

(*a*) changes in external circumstances, such as a national wages award ;

(*b*) correction of errors which may appear later.

The Budgeted Level of Attainment

45 Before proceeding to the preparation of budgets the level of attainment which forms the basis of the budget must be defined.

46 In respect of purchase prices, national wage rates and other external factors over which the business has no direct control, the main consideration is to forecast these objectively for the period under review, although the principles of conservative finance may prompt a slightly pessimistic approach.

47 In respect of the standard performance of the operations within the business, there is a choice of lines of approach.

(a) Standards may be set at levels which past results indicate to be capable of attainment. There is possibly some psychological advantage in setting such an easy standard, but it may lead to unwarranted complacency.

(b) Standards may be set at high levels of achievement which should yet be possible of attainment. Such high standards must frequently result in loss variances, which are constant reminders of the improvement still to be made. These may serve as an incentive to greater efforts, but there is the danger that to many persons persistent loss variances may be a potent discouragement.

(c) Standards may be set at levels possible of attainment by efficient working under the existing conditions, This compromise has much to recommend it, especially as it should result in budgets which are not so far removed from expected actual results as to render the budget unreal.

48 By the adoption of the technique of Flexible Budgets, it is possible to set high standard budgets which are capable of adjustment in respect of those conditions which prevent the high standards being attained. Such a procedure has the following effects :—

(a) The ultimate or ideal standards are maintained on record.

(b) The difference between the original budget at the high standard, and the adjusted budget which makes allowance for the existing conditions, can be regularly recorded as a variance, and can serve as a reminder of action to be taken.

The Preparation of Budgets

49 The preparation, and administration, of budgets is usually the ultimate responsibility of a Budget Committee, the Chairman of which is frequently the Chief Executive of the business. It is a common arrangement for the staff work of this committee to be carried out by a Budget Officer, who is normally a member of the accounting staff.

50 After the Budget Committee has given a preliminary indication of the broad outline of the plan, the work of preparing each section of the Preliminary Budget normally involves collaboration between the Budget Officer and the person who will be responsible for controlling that section of the actual results. This preliminary work must be done early enough to enable the final budget to be agreed at the required date, which may be a month or two before the budget comes into operation.

51 There is no established order in which the sectional budgets should be prepared, and the starting point of the budgetary procedure should be the consideration of the principal feature of the general policy affecting the budgets. This feature is sometimes known as the Principal Budget Factor, which in a business where the production capacity is in excess of the potential sales may be the expected volume of sales. In another business the principal budget factor may be the supply of a certain material. It is around the principal budget factor that the budgets should be built.

52 The preparation of the sectional budgets must necessarily be provisional, for as one section is prepared it may be found incompatible with another section. For example :—

(a) The budgeted profit may not be acceptable and the Sales Budget may be altered by an increase in selling prices.