

STANDARD COSTING: CONCEPT AND MANAGERIAL USES

FIERCE competition has aroused a unique 'cost-consciousness' among firms. The avowed goal of maximizing sales revenue with satisfactory profit margins seems to be possible through a system of cost control which helps cut down wasteful expenditure and contain costs within proper fetters. This, however, does not mean that 'cost control' and 'cost reduction' are synonymous. The latter arises out of an inter-substitutability of different factors of production in a way that a costly factor is replaced by a cheaper one. "It represents an alteration in the conditions under which costs accumulate. It affects a dynamic change in the potentials of the manufacturing complex. It enables the company to issue the same output but with a reduced cost input. And it originates in human ingenuity." [1] Cost control does not involve any change in the existing pattern. It works within the framework of the different means of production and pinpoints the loopholes they contain. Cost reduction may, however, be achieved by an efficient system of cost control since the areas where the reduction is possible are clearly revealed by it.

COST CONTROL AND STANDARDS

Control over costs is feasible only if there is some yardstick against which actual performance may be measured. This implies the use of standards for various components of cost. The significance of standard costing increases all the more when the pitfall of 'actual costs' based on historical figures are taken into account. For instance, observe the information given as under :

<i>Months</i>	<i>Cost per unit produced</i>
January	Rs. 16

	<i>Cost per unit produced</i>
	Rs.
February	15
March	13
April	17

Which cost from the above should be taken for price determination? Is it safe to assume that the cost for the month of March is lowest? There is no method to find out whether there was any possibility to bring down the costs for the month of April. Besides, the following defects are also worth mentioning :—

- (i) There is no basis to ascertain that the resources were used efficiently, that is, it is difficult to determine from the aggregative real costs whether the cost inflation is due to inefficiency in material, labour or overheads or merely a rise in price or excess use of resources.
- (ii) The quantum of production may not be the same for different periods.
- (iii) The historical costing may be very expensive and involves large book-keeping work in the sense that it is difficult to charge expenses to every unit when the production is on large scale, say, 40,000 units.
- (iv) Management will never get quick and authentic reports until the work is completed.
- (v) Since actual costs do not offer any technique of comparison in the absence of some "standard", control cannot be exercised.
- (vi) Historical costs are not useful for quoting prices before the production is finished, as in the case of 'style' industries such as the automobile and clothing.
- (vii) The actual overhead costs assigned to individual jobs are not really actual at all but an average based on number of assumptions that are valid for limited purposes.

II

STANDARD COSTING : DEFINITION

The foregoing defects of historical costs stress the need for a

system which uses the predetermined units for the measurement of actual performance. Standard costing furnishes an answer since "standards are predetermined costs which are used in measuring productive efficiency and which are used periodically as a basis of comparison with actual costs." [2] Further, "they are neither actual, average nor normal costs but are estimates of what costs should be under conditions as perfect as possible. They are not necessarily fixed or permanent in their nature but are subject to change from time to time as conditions require." [3] Standard costs reveal what costs should be and gives a complete insight to the management to analyse the causes of any deviation in the materials, labour and overhead costs so that effective control is exercised. If proper control over functions through the efficient use of costing information cannot be exercised it will usually follow that, strictly speaking, there are no standard costs, on the other hand, if a system provides for comparison of actual and standard costs and for remedial action, as indicated by "variances", then there is a good chance that carefully predetermined costs will not be exceeded; in fact they may even be bettered. [4] The standard costing has been neatly defined by the Institute of Costs and Works Accountants, London, as :

"the preparation of standard costs and their use to clarify the financial results of a business particularly by the measurement of variations of actual costs from the standard costs an analysis of the causes of variations for the purpose of maintaining maximum efficiency by executive action." [5]

The standard costs are, therefore, based upon the principle : "What costs should have been incurred?" They are computed to show the predetermined quantities, prices, level of production etc.

"Fundamentally, a standard cost is a bench mark. The amount of variation between the actual cost and this bench mark is an index of waste—or, to put it another way, of potential savings. Standard costs foster an optimistic attitude. They state that better performance is attainable. They constantly emphasize what should be. They encourage a striving for perfection." [6]

III

FIXATION OF STANDARDS—TYPES OF STANDARDS

Basically standard costing requires the fixation or determination of standards for :

I. Quantities, II Price and III. Qualities, for each element of cost entering into a product, namely, Material, Labour and Over-heads. The next steps involve the computation of actual costs and the analysis of difference between the actual and the standard costs.

Standards may be studied under two broad categories, *viz.*,

1. Standards—According to their 'Nature'.
2. Standards—According to their 'Mode of Expression'.

Classified according to 'nature' standards may take many forms, some of which are :—

a. *Synthetic or Ideal Standards.* These standards are based on detailed and carefully undertaken analysis through technical studies. They are engineering-oriented and are set without reference to changes in conditions. It is assumed that best performance would be achieved under the best possible combination of factors—the most favourable prices for materials, no deviations in the labour timings and rates, highest output with the best equipment and layout and maximum efficiency in the utilisation of resources. In brief, the objective is to obtain maximum production at the lowest costs.

The ideal standards are much desirable but the major difficulty is that they are rarely attained. Although a safe prediction for maximum efficiency is possible in many cases, for example, automatic mechanical devices, the presence of the human factor impairs the results and deters the achievement of unique precision. Moreover, even in the case of materials, unexpected market swings and spoilage may detract from the predictions. The elusive character of ideal standards affects the morale adversely. Batty cogently remarks:

"Thus the psychological impact of never reaching the targets set may result in a deterioration of morale which, in turn, reduces efficiency still further, thus commencing a chain of reaction of ill-effects." [7]

This is not to under-rate the role of ideals as spurs to ascending efficiency. Efforts may be made to overcome the uncontrollable factors

through a 'modified ideal standard'. A modified ideal standard uses the ideal as a 'base' and then by careful scientific study determines the percentage of the ideal which can be attained if one does an outstanding job of supervising, planning and controlling the operations one is responsible for. To illustrate :

If we are doing a perfect job, we would pack 100 percent of the product 'A' we make. Careful study has established the fact that we can at best only pack 95 per cent of this ware. In this case 100 per cent is ideal and 95 per cent is the modified ideal standard.[8]

There are definite advantages in the use of the modified ideal standard :

1. Incentive on the part of the production departments is not lost since the goals set are attainable. The standard still permits them to meet or beat the standard if they do a good job.
2. This type of standard makes possible an additional comparison of great value in that both actual and standard performance can always be compared with the base or ideal which may be termed as the potential. This one advantage alone is of inestimable value in controlling and planning operations.

b. Expected Standards. These standards are set when the actual prevailing conditions have been examined and steps taken for their improvements. The necessary allowance is made for sudden emergencies and the objective is to determine : 'What can be attained' as distinguished from 'what is desired'? They are the standards from short term point of view and the idea is 'revision', when necessary. Thus the important condition is that they must be changed with the change in conditions if the standards are to prove useful. Any deviation from this type of standard is considered as a mark of inefficiency unless it happens due to uncontrollable factors, in which case a revision of standard is indicated.

These standards suffer from the basic drawback that the inter-period comparability is not possible owing to continuous revision. But the benefits can also be obtained. "The variances will show divergences from attainable targets and this fact in itself constitutes a recommendation. Departmental managers and supervisors will understand the targets set and variances, therefore, will represent a falling off in

efficiency, not as is often the case when ideal standards are used, failure to reach the impossible.”[9]

c. Basic Standards. These form a special class of standards of statistical nature taking some year as the ‘base’ and used in much the same way as the statistician uses ‘Commodity Price Index Numbers’. The changes are made whenever a deviation is found from the base. For instance :

If the price of a commodity in the base is Rs. 10 and its present price is Rs. 15, an allowance of 50 per cent will be made in the present standard.

These standards do away with the need for frequent revision. In view of the statistical nature of the basic standards, they cannot be recorded in the ledger, except as a ‘memoranda’; their use is generally confined to the study of cost variations outside the books of accounts by statistical methods rather than accounting methods.

d. Historical Standards. These are based on past records which are thoroughly analysed before standards are compiled. These are *static standards* and are important in those concerns which function under static conditions, i.e., where technology does not have much scope for a change. They are inward-looking standards and should be adopted with due care. At a time when business horizons are continually extending and industry is characterised by a dynamic and swift uptrend, these standards seem to symptomatise the sick and lagging past. As Henrici, S.B.,[10] puts it :

“Affected by many individual wastes and savings of the past, it offers no fixed basis of comparison. Any variance from such a “standard” must be analysed in the light of the changing conditions affecting both the past average and the present cost. Such an analysis is difficult and inconclusive. Moreover, every dynamic business enterprise should concentrate its energies on attaining some goal in future, not in running away from a bugaboo cost of last year or before, and this future goal should be the standard. For this reason simple historical costs do not constitute a good standard.”

e. Normal Standards. They take into account normal conditions prevailing over a certain period, covering a complete phase of business cycle. While more likely to be attainable in practice, they are difficult to be set because of the errors in forecasting the extent

and duration of cyclical effects. They are also troublesome in that the economic effects of business cycles may cause large variations from standards during certain periods. These variations are, for most part, beyond the control of individual firms and are, therefore, of little significance in controlling cost variations. Normal standards, however, are based upon an attainable goal and sure to isolate the effects of business cycles on costs.

f. External Guide or Adopted Standards. These standards are borrowed and transplanted from other undertakings engaged in the same line of industry. They are easy to adopt since they do not entail any detailed investigations. But they should take into consideration the difference in environments. These should not be permitted to prove a 'dangerous exercise' in case there are variations in different firms.

g. Showy Standards. These standards are meant for 'window dressing' and are unrealistic. They have the potentialities of enabling the firms to lift itself by its boot-steps. But if they are too unrealistic like ideal standards, they lead to 'psychological debacle.'

According to 'mode of expression', standards may be set for materials, labour and overheads. They are also called 'physical and price standards'. The Industrial Accountants's Handbook contains a very lucid account of these standards. It states :

"Webster's dictionary defines a standard as 'a carefully thought method performing a task' . . . Standard must always be thought of primarily in terms of specific things, for example, units of time, pounds of material, hours of plant capacity, units of departmental output. The fundamental standards must be capable of comparison with actual happening on a physical unit basis at primary levels if standards are to be of maximum value and provide the foundation upon which the standard cost structure must rest. . . . The fundamental or primary standards determined in terms of units of measurement or physical things need never be changed unless the operating methods or the products change. On the other hand, the standard costs which reflect money values applied to primary standards, may change periodically if labour rates change, material purchase costs change or other monetary varieties enter into the problem with sufficient effects to warrant alteration of standard costs." [11]

This statement clearly brings on the surface the essential charac-

teristics and requirements of a good standard. As the fixation of standards is a pre-requisite in any system of standard costing, it is generally felt :

“Unless some effort is made in advance to establish acceptable standards of performance a business is likely to drift and costs get out of line. Put another way, the use of predetermined standards provide management with a continual spur to keep performance and cost in line whereas purely historical data, used as standards merely tells in that we are not making the same mistake this year as last year”[12]

Standards must be set fairly and realistically if they are to become an invaluable management tool. Physical and price standards require, in common, Price or Rate and Qualities.

STANDARD COSTS FOR MATERIALS

The materials used for the manufacturing units may be direct or indirect depending upon the fact whether it can be traced to a specific unit or not. If it is traceable to a specific unit it is direct material and if not, then indirect material. The objective in setting the standard cost for material is to determine the unit cost of the material, i.e., Quantities multiplied by the Price.

A Determination of the quantities. The nature of the product will reflect material quantities. ‘Material quantities’ is precisely an engineering function. Repeat-process-averages and test-run-averages may be employed for the purpose. Setting of standards for material quantities may be influenced by the following considerations :—

1. *Cost of containers, scrap, waste and by-products* : This must be incorporated in the material cost.
2. *The Layout, conditions of equipment, the work place and transportation facilities* : They must be considered along with the system for planning, routing and dispatching work the efficiency of which must be analysed. “From a control point of view, we must remember that while various material losses may be unavoidable, it is still possible for efficient management to minimise their volume. Therefore, where scrap waste or other losses occur, an effort should be made to compute their effect on standard materials.”[13]

3. *Standardisation of Materials—both regarding size and qualities* : This might help reducing material losses. An efficient approach to standardisation might cover :—
- (i) *analysis of materials* by the engineering departments to show what processes could be discontinued and what materials could be substituted in a bid to minimise costs;
 - (ii) *control over stores* to yield the most acceptable designs and to simplify materials' varieties so that inventories are not unwieldy and lumpy;
 - (iii) *selecting proper tools* which are durable and ensure flawless production over a long period;
 - (iv) *educating the employees*, so that losses that result from the use of haphazard, improper and nonstandard methods are forestalled. This is standardisation of training, and
 - (v) *disposing the scrap* to maximise proceeds. It may be of great benefit if its different components are sorted out and sold separately. This is referred to standardisation of scrap disposal.

MATERIALS PRICE

The setting of the standard for the price of the material is quite a distinct exercise, "one which is based upon executive judgement and fortified by a system of budgetary control and forecasting." [14] However price standards may be affected by efficiency in purchasing especially when the buying and store-keeping costs are included in the price of materials. Direct gains in this efficiency would lower down prices correspondingly. It would result in substantial economies if the purchasing department is manned by persons well conversant with market conditions. Since there may be a large number of uncontrollable factors like material types, purchase-quantities, trade customs, cyclical fluctuations etc., that may exert an influence on prices, buying efficiency would comprise efforts to determine proper order-quantities and the obtainment of best bargaining, coupled with prompt deliveries, after-sales services etc. It should not, however, be overlooked that the standard prices as reflected by the cost records may not be used as measures to assess the performance of the buying department.

Furthermore, since the standard costing aims at obtaining maximum economies in the use of the materials, equipment etc., the type of standard to be used should also be taken into account, for, if 'ideal standards' are used, the prices under most favourable conditions will be predicted which may give rise to large variances. On the other hand, 'expected standards' with due allowance for unforeseen happenings are considered better than 'ideal standards' which undervalue the stock at standard cost in the Balance Sheet. This indicates that untried ideas should not influence the fixation of standards for price.

STANDARD COSTS FOR LABOUR

The determination of standards for labour costs requires two factors, viz., labour time and labour rate.

LABOUR TIME

The Labour time is indicated by the number of hours a particular worker will devote on total operations for some job. A number of methods depending upon the nature of the industry, are available to determine labour time. Analysis of 'past performance' data suggest one approach. Here past wages or products records are analysed to find the labour hours spent on a job. Since this does not admit of changes, results here may not be precise. Time and Motion studies employing stop watch or time-study machines or Micro Motion Analysis may yield more accurate results. They also provide for unavoidable delays and personal and fatigue factors. Predetermined time standards in the form of 'ready-to-use' tables have also been established. They yield time values for different physical motions and Motion Time Measurement' appears to be a widely popular system. Work sampling based on random observations of operations have also been used with dependable results.

LABOUR RATE AND GRADE OR QUALITY

This is related to the question of deciding as to what should be paid to labour per hour. Standards based on the discretion of the management have been found to be inappropriate. A proper solution

would be to take into account the allowance for future wage trend. Where the rates are fixed in negotiation with the union, they may be used as standards for the contracted period.

Usually two systems are found in practice for paying the labour on hourly rates. One is concerned with the job—called occupational rate system—irrespective of the individual who does it, and the other is connected with the person—called individual rate payment—and the job is not considered for making the payment:

The occupational rate systems are mainly used in large industries. They are standardised, obviate a determination of multiple rates, minimise the 'individual-based' caprice, and may in themselves be used as predetermined standards.

In the case of individual rate system, the most imminent problem is to establish uniformity. For this purpose, rate fixation must be accompanied by a study of operations in terms of skill, effort, etc, to be specified as standard performance for the job. In case there is difficulty in deciding upon the economical rate for a job, the average rates of all men will be the best course.

A different procedure would be needed for standard wage rate if piece rates and bonus or premium plans are in use. Sometime overtime payments are also made and they need special attention. In the piece-rate wage system, the amount paid will be per piece regardless of quantity produced and, therefore, the labour cost would be uniform. In the case of bonus or premium systems, a decision shall have to be taken if the amounts of bonus or premiums should be included in the standard wage rate or it should be debited to the over-head account. In the former case, reference will be made to the past records and the entire amount will be added to the standard wage rate. Lastly, some provision is necessary for the over time payments. The decision for the inclusion of overtime—the difference between normal basic hourly rate and hourly rate paid when overtime is worked—will rest on the fact whether the achievement of the existing level of operations requires overtime or not. If 'yes', the overtime will form a part of the standard wage rate; in other cases the amount is directly transferred to the manufacturing overheads.

At this stage, the problem of grading should also be tackled when both male as well as female workers with different grades and ages are employed. If separate rates are set for each grade and age

group, the standard costing system may become complex and costly.

STANDARD COSTS FOR OVERHAEDS

The setting of the standards for manufacturing overheads is a very tough task as compared to standard either for direct material or labour. "The standard cost of materials and the standard cost of labour for each article produced are much more definite in that these costs do not vary greatly with changes in the capacity of the plant, nor with the volume of production".[15]

The overhead costs are characterised by two distinct features :

First, they are not either directly associated with or can not be associated conveniently to any cost centre because they are common costs to the unit of product. Despite an ambiguity around these terms, manufacturing overhead costs, also referred to as indirect manufacturing costs or expenses may be defined as those that either are not or cannot be traced to specific costing units.[16]

Second, the overheads do not necessarily change with the level of production except certain specific overheads.

These two factors make the control of overheads difficult.

The fixation of the standards for overheads requires the following steps :—

- I. The determination of the total amount of overheads.
- II. The determination of level or capacity of production.
- III. The determination of standard overhead rate.

DETERMINING THE TOTAL OVERHEAD COSTS

In order that aggregate of all the overhead costs is determined, it is essential that a survey of the nature of each overhead cost must be embarked upon. It will help not only to ascertain the total of such costs but will make control over them easier. These considerations are related to the goal of attaining maximum efficiency in the utilisation of overhead expenditures. Overhead costs may be categorised as fixed, variable and semi-variable.

Fixed overhead costs do not have direct relationship with the volume or level of production. They remain constant within a certain range of output and are incurred for a 'period', ignoring a small or

large volume of production and are fixed per unit of time. They include such items as Rent, Fire Insurance, Taxes, Salary of the manager, Depreciation etc.

Variable Overhead Costs vary in direct proportion to the volume of production. The items usually included are Power, Repairs, Spoilage, Indirect materials and Supplies.

Semi-Variable Overhead Costs are of hybrid type and incorporate the characteristics both of fixed and variable costs. The amount spent increases less than the increase in production and such an increase is erratic or irregular. Semi-variable overhead costs are Indirect labour, Supervision and Inspection.

Although costs have been placed in these categories, the distinction is not always absolutely clear. Wilmer Wright[17] aptly observes :

“Many persons assume that the terms variable and constant (fixed) designate different kinds of expenses. This is not true. Any particular kind of expense may be variable, semi-variable or constant, depending upon conditions. A constant expense is related to volume in a given period.”

DETERMINING THE CAPACITY OR LEVEL OF PRODUCTION

The next step is to arrive at some estimates about the units of products to be made so that they may form a basis in setting the standards for overhead costs. Time may be used as a common unit because it would provide a homogeneous basis even for diverse output. The measurement is called ‘Standard Hour’ which is the amount of output or work which should be performed in one hour. We can, therefore, take the total volume of production either in terms of direct labour-hour or machine-hour which will, of course, depend upon the nature of the operations.

Out of a variety of meanings given to the ‘Capacity to Manufacture’, the followings deserve mention and choice will have to be made for ‘One’ after considering the relative importance of each :

The maximum theoretical capacity of the plant. In this case it is expected that the plant will operate with 100 per cent of its capacity without any obstructions and if the machines work for 5,000 hours in a given period and if it takes 5 hours to turn out one unit of product, 1,000 units will be produced for the period and they will be used as

the basis of standard cost for overheads. This concept suffers from more or less the same drawbacks as does the 'Ideal Standards' approach due to unavoidable human errors and technical failures.

Normal Capacity or Maximum Capacity less operating interruptions. Although maximum capacity is not of much practical use, it does provide a basis for the calculation of normal capacity which is arrived at after making necessary allowances in it such as idle time, losses due to failure of electricity, setting up the machines, shortage of materials, labour troubles etc. The extent of allowances will be largely based upon the internal and external factors, i.e., the efficiency of the workers, nature of the products, types of the materials required etc. Usually a lump sum allowance in the order of 15 per cent to 20 per cent of the maximum capacity will be made.

Normal capacity to manufacture and sell. It is often suggested that it would be appropriate to take account of the expected sales also along with the normal capacity to manufacture. In other words, a combination of the 'capacity to manufacture and sell' is advocated. The reasoning given in support of the contention is that if the sales for the budgeted period do not match with the estimated production, the plant will remain idle and total overheads will not be absorbed. This is especially true of the fixed overhead costs since variable costs are the same in either of the methods. In this case, therefore, market conditions will have to be studied to ascertain the demand position.

The major practical difficulty with this approach is the accurate forecasts of the longterm sales. And also, since the overhead rates will be inflated there is likelihood of losing orders based on cost. It should, however, not be implied that all is well in taking 'normal capacity to manufacture' as the basis of calculating the overhead rates. "In times of depression there may be a large unabsorbed capacity, and yet the product costs being accumulated, and acted upon by management, will ignore this fact." [18]

Besides the foregoing procedures adopted for the calculation of the capacity of the plant, sometimes it is preferred to take either estimates of total expected sales for the short period or an average of total production for 5 or 7 years as the basis. The 'short period sales' is considered better in that there is a greater possibility of achieving accuracy while average may be misleading due to the unstable conditions.

It may be concluded that although the choice of any method might vary in individual cases, it would be a wise step if two factors namely, 'production' and 'sales' are combined to derive the optimum benefit.

DETERMINING THE STANDARD OVERHEAD RATES

Having determined the two required variables, namely, the various components of overheads and the capacity or level of production, a stage is set to calculate the standard overhead rate for each production centre. Some points pertaining to similar rate for 'service centres' will be discussed a little later. The fixation of standard rates will be preceded by the preparation of a budget which will record the anticipated overheads for some period, usually a year, though, in practice, the period may be reduced to six months according to the discretion of the individual concerns. For getting accurate results, the budget is often so sub-divided into month-wise classification and again in four-weekly parts of a month. This makes control easier.

Fixed vs. Flexible budgets. It is within permissible limits to make a distinction between the fixed and the flexible budgets, the former is one which presumes one volume of output and the related costs while the latter considers a number of possible volumes and the corresponding costs. In essence, "flexible budgets reflect the amount of cost that is reasonably necessary to achieve each of several specified volumes of activity. More specifically, flexible budget allowances express standards of what costs should be at each level of volume, on the assumption that production is stabilised at this volume." [19] Furthermore, where departments exist it is desirable to have departmental flexible budgets to serve as control bench marks. The superiority of selecting flexible budgets lies in the difficulty of predicting a specific volume of production unless the business is perfectly established in the case of fixed budget.

IV

CALCULATING A RATE

With the help of total overhead components and 'approximately determined capacity levels, 'standard rate' for overhead may now be

calculated. Two approaches may be discussed here :

(1) *When total standard overhead costs are taken as 'One Amount'*

(a) Where the concern is *not departmentalised* and total standard overheads for the budget period, irrespective of the composition (e.g., Fixed, Variable and Semi-Variable) are taken as one sum or figure, they are divided by either direct labour-hours or machine-hours and a rate is arrived at as below :

$$\frac{\text{Standard Overheads for budget-period (fixed, variable and semi-variable)}}{\text{Direct Labour-hours or Machine-hours}} = \text{Standard rate per direct labour-hour or machine-hour.}$$

(b) When the concern is *departmentalised*, the standard rate is calculated for different departments as distinguished from the total in the previous case. The formula for the standard overhead rate for each production department is as follows :—

$$\frac{\text{Standard Overheads for Department 'X' for budget period (fixed, variable and semi-variable)}}{\text{Standard direct labour-hours or machine-hours for Department 'X'}} = \text{Standard rate, Department 'X', per direct labour-hour or machine-hour}$$

2. *When overhead elements of costs are considered separately.*
The only difference in this case is that here rates are calculated separately for fixed overheads and variable overheads.

(a) Where the concern is *departmentalised*.

i. *For Fixed Overheads :*

$$\frac{\text{Standard fixed overheads for Department 'X' for the budget period}}{\text{Standard direct labour-hours or machine-hours for the budget period}} = \text{Standard rate for fixed costs for Department 'X'}$$

ii. For variable Overheads :

Standard variable overheads for
Department 'X' for the budget-
period

_____ = Standard rate for
Standard direct labour-hours or variable costs for
machine-hours for Department 'X' Department 'X'
for the budget period

(b) If the concern is *not departmentalised*, the rates will be
calculated for the whole enterprise such as :

i. For fixed Overheads :

Standard fixed Overheads for the
budget period

_____ = Standard rate for
Standard direct labour-hours or fixed costs
machine-hours for the budget pe-
riod

ii. And for Variable Overheads :

Standard variable overheads for
the budget period

_____ = Standard rate for
Standard direct labour-hours or variable costs.
machine-hours for the budget-
period

The total of the two rates, i.e. standard rate for the fixed overheads and variable overheads, will give the standard rate for the budget period to absorb the overheads. The rates will be circulated among the persons concerned such as the departmental heads, supervisors, formen etc., and they will have to account for deviations, if any.

In general, it may be stated that we can also calculate the standard rates for overheads with any method, by taking the amount of direct wages instead of either direct labour-hours or machine-hours for the budget period. The formula in all the cases with respective modifications would be :—

$$\frac{\text{Overhead costs etc.}}{\text{Standard direct wages etc.}} \times \frac{100}{1}$$

This method will give a percentage showing relationship between overhead cost and direct wage cost.

V

A NOTE ON SERVICE COSTS

In large concerns, individual service centres for maintaining the plant and other things exist and significant amount is spent on them. It becomes necessary to take account of these costs too, if the correct standard overhead rate for 'producing cost centres' is to be computed. Generally the following bases are in vogue for charging service costs to the producing cost centres :

- A. Calculate the standard overhead rates for each service cost centre and then charge the same to the producing cost centres. The formula used would be ;
- 'Service cost centre'

= Standard rate for

Total standard service units (or hours) service cost centre.
for centre

- B. Charge the total anticipated total costs for service cost centres to each producing cost centres. Under this method various service costs are apportioned in some such way as :

Name of the service	Basis of apportionment to producing cost centre (in each case for standard output)
Inspection	Anticipated usage by each producing cost centre (may be on a time basis or on the number of products inspected for each).
Stores	Materials to be used (may be on value, quantities, or the number of Standard Material Requisitions).
Building Services	Space occupied (Square or cubic foot-age).

Source : Batty, J. : *Standard Costing, op. cit.*, p. 51

- C. Sometimes a combination of (A) and (B) above is used and therefore advantages of both are retained.

After calculating the standard costs overhead for the service cost centre, the charges are made to the producing cost centre so that a final standard overhead rate may be fixed.

VI

STANDARD VS. BUDGETED COSTS

Broadly speaking there is no distinction between standard and budgeted costs since they make common use of the technique of pre determined costs and hence the terms are used interchangeably. In fact where budgetary targets are dissected to the lowest production line, they take the form of standards. But it may be pointed out that they are not the same thing and differ primarily in respect of the following :

- (i) *Objective or Purpose.* Budgets are expected costs and a forecast is made at the beginning of the year regarding the requirements of finance, labour, material and other costs and then they are used as a basis of comparison to ensure that they do not exceed those estimated. Standard costs differ from them in that there the purpose is to determine what costs should be if a desirable standard of performance is attained.
- (ii) *Emphasis.* The emphasis in the budget is that the actual costs receive maximum significance. They are considered correct costs and it is underlined that the budget is successful only if the estimated costs do not exceed the actual costs. In case there is some discrepancy revisions are made for next period but otherwise estimates are considered correct. Standard costs emphasise how the standard is to be achieved and also what should be done to reduce the costs to the standard level. Actual costs are, of course, used for comparison but standards are not necessarily revised if they do not tally with the actual costs unless the standards are discovered to be incorrt; frequent changes in standards are not preferred since they are bound to become unreliable.
- (iii) *Scope or Completeness.* There is also a difference in scope or completeness in budgeting and standard costing. Budgets cover almost every activity right from the sales to the manu-

facturing for a given period whereas standards are confined to costs of operations only. It is usually found that incomes are also budgeted but standards are frequently set for costs or operations only.

- (iv) *Analysis and Breakdown.* In making comparisons if it is found that actual costs are within the allowed range of the budgeted costs, it is a good signal. But, if there are some variations, causes are thoroughly investigated and steps taken to bring the amounts to the budgeted levels. The difference in the standards and actuals, on other hand, enables us to know how best economies can be achieved.

VII

MANAGERIAL USES

Standard costing systems offer many advantages to the management in one form or the other mainly to overcome the drawbacks inherent in the historical costing systems. This is reflected in the widespread recognition of the systems all over the world. Some of the important uses are discussed below :—

1. *As a basis for 'Setting Price and Production Policies.*

Standard costing helps management in formulating price and production policies in the most efficient way even before the production takes place. In most of the large scale industries especially those engaged in the production of standard and uniform products, competitive conditions demand the predetermination of costs for materials, labour and overheads. The standard costs are based upon objective studies free from any prejudice or bias and aid management in furnishing quotations, deciding new lines of production and working out most profitable production mix. This is logical and helpful because if prices and production policies are based upon actual costs, the results are misleading and difficulties are encountered. Actual costs do not reflect the efficient use of elements of costs. They may include excessive charges for materials or abnormal times for labour or even disproportionate allocations of overhead costs. The busi-

ness may lose important orders in the absence of competitive bids and the 'Sales Department' will find itself in deep waters if the sales are not pushed.

2. *As a yardstick for 'Measurement and Control'*

The role of standards as instruments of measurement and control is admittedly the most important use of the systems. In the absence of standards the only information available for control purposes is the actual costs data which can be used for measuring the efficiency of the operations between some periods. Even if it is assumed for arguments sake that actual costs are helpful in comparison and exercising control, the important issues for discussion are : which is the base period for actual costs? Should the actual costs for a number of years be averaged to find a figure for measurement? And in case the difference between the previous and present actual is insignificant, should it be assumed that there is no inefficiency? These and other similar questions are not satisfactorily answered by the use of actual costs and only the standard costs which are not frequently changed for some period can be used as a basis for measurement. "Quantity and time standards need never be revised unless there are changes in the products, methods of production, machines, types of labour or quality of materials used." [20] Thus such standards provide a constant and unchanging unit of measurement. Price standards disclose the deviations and enable management to take corrective actions and fix the responsibility. "Through setting up proper account classifications and the determination of variations, they make it possible to signal poor labour or machine performance, excess material or labour usage high labour or material prices, unnecessary manufacturing expense items, and so forth, and to identify the responsible supervisors." [21]

3. *As a basis for 'Principle of Exception'*

Standard costing makes possible the application of the "principle of exception" which literally means that management directs its attention only to those cases which are below-and-above the standard performance. In large concerns where the number of operating employees and operations is

extremely large, it is a problem to devote time on all of them so that important matters alone need be attended to. The use of the standard costing aids in analysing variances and the management can concentrate on the abnormal cases avoiding those of a routine character. The whole structure can be built in such a way that every person in the management team can detect off-standard conditions and investigate the causes thereof and the allocation of time is up to the mark.

4. *As a means of 'Lower Clerical Cost and Managerial Time'.*

Another advantage favouring the introduction of standard cost systems is their ability to effect reduction in clerical costs. Initial expenses, however, may be large but in the long run the cost is less than that in systems based upon historical costing which they replace. The principal means by which the use of standards can often save clerical and accounting cost and managerial time have been ably described as follows :[22]

- “(i) By carrying inventories at standard cost, stock ledgers can be kept in terms of quantities only. This eliminates much clerical effort in pricing and balancing items on stock ledger cards. Total standard cost of goods on hand can readily be obtained at any time by multiplying quantity in stock by the standard unit cost. If average actual cost is wanted, it can be computed by multiplying standard cost by the ratio between actual and standard cost of the goods.
- (ii) When standard costs are used, requisitions or bills of materials to be put into production can be written and priced more rapidly than when the goods must be priced at actual cost.
- (iii) The standard cost of goods finished can be obtained immediately upon completion since it is necessary only to multiply the quantity by the unit standard cost. Simple and economical process costing methods can be used in place of elaborate job costing methods.
- (iv) The time required to prepare reports which are used can be reduced since most reports are useful in proportion

to their timeliness, the managerial value of accounting is considerably enhanced.[23]

- (v) The time devoted by management to study and interpretation of cost reports is much reduced when standard costs are used. These economies result from elimination of all details except those requiring attention and from the provision of standard figures which facilitate comparison and interpretation of actual costs.
- (vi) The time required to assemble cost data for budget preparation or pricing is reduced because it is not necessary to devote so much time to the analysis and management of past actual costs."

5. *As Incentive to Personnel*

The provision of incentive plans is also made easy by the use of standards—a fact recognised by all proponents of incentive plans beginning from F. W. Tylor the father of scientific management. If standards are reasonable (e.g. Normal Standards) and are possible of attainment the workers will work to maintain their efficiency and improve the quality of the products. The target is before them and if they exceed, they are eligible for extra rewards and in case they fall short of standard performance, they will have to account for it. There is no point of any partiality or personal interest since the standards are fixed after a complete scientific analysis has been carried out.

The successful operation of a system of standard costing requires a very high degree of executive inter-departmental cooperation and discipline. Standard costing is simply a tool of management, a simple tool. There is no universal system of standard costing applicable to each and every industry and 'management need' is the decisive factor in any particular case. It will not replace technical skill, management ability and commercial knowledge but it will assist and guide the routine work of every person in any concern where it is in use. There is a great scope for maintaining a high standard of clerical efficiency by adoption of the theory of standard costing. It is necessary to ensure that the routine of standard costing is carefully integrated with the essential manufacturing records.

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- [18] Batty, J., *op. cit.*, p. 46.
- [19] Shillinglaw, Gordon, *op. cit.*, p. 217.
- [20] Blocker, J.G. and Weltmer, W. K., *op. cit.*, p. 302.
- [21] Gillispie, Cecil, *op. cit.*, p. 14.
- [22] "A Reexamination of Standard Costs", Research Series No. 11, National Association of Cost Accounting Bulletin Feb. 1, 1948, p. 720.
- [23] This point can be separately discussed as the usefulness of the standard costing in 'Faster Reporting'. As Shillinglaw, Gordon (*op. cit.*, p. 175), put it, "... the value of any information declines as it relates to the period farther and farther in the past. Operations do not come to a halt while reports are being prepared. The longer it takes to develop those reports, the longer will be the time for any unfavourable trends to develop before corrective action can be taken. The age of the information depends on two elements: the interval or length of the reporting period, and the delay or the elapsed time between the end of the interval and issuance of the report. Age can be reduced by shortening the interval, generally at the price sharply increased data processing costs or by reducing the delay."