

INTRODUCTION TO COSTS

So far, we have talked about maintaining the books of accounts.

This helps us in knowing the overall financial position of the business and its profitability. But this certainly does not suffice the day-to-day need of an analytical and questioning manager.

Some more detailed information is required in order to take prudent business decisions. '*Costing*' technique comes handy here:

For realizing the sales revenue, the business has to incur various types of expenses. These expenses, broadly speaking, are called '*costs*'. Costs, in other words are the sacrifices that the business has to make in order to earn the revenue.

It is but natural, that the entrepreneurs and managers would like to study the trends, behaviour, magnitude, controllability, etc. of these costs. In order to do that, various techniques have been evolved. They are called '*costing techniques*'.

It is quite likely that you might have heard many jargons about cost. Some managers talk about '*actual cost*', some others about '*standard cost*'. More knowledgeable executives discuss about '*opportunity cost*', '*fixed cost*', '*variable cost*' and a lot more.

I propose to discuss here some basic elements about cost, without going into the accounting for such costs. Please keep in mind that the foundation of any cost accounting is laid by the financial accounting that we talked about earlier. The purpose of financial accounting is to arrive at profit or loss that the business made during the given period and to have a look at the assets and liabilities position as on a particular date. When we look at costing, we are interested in the analysis of these data. E.g we are interested in finding out per unit cost of different products that we manufacture, we are interested in setting standards for these costs and so on. Data from the financial accounting forms one of the basic ingredients for carrying out cost accounting.

Points to Ponder

1. The process and techniques of ascertaining costs have certain aims. What are they (e.g., Cost Control, i.e. keeping costs under check, making them effective and efficient)

Can you name some more aims?

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A particular firm may not desire to realize all the aims stated by you above and may therefore, designs its cost accounting only for a particular purpose. But in general, cost accounting has a wide role to play.

TOTAL UNIT COST

One of the major objectives of any costing system is to arrive at the total per unit cost of the different types of products which are being manufactured or services availed.

The first thing to be identified are the costs which are directly incurred (per unit) in manufacturing the same. They are called '*Direct Costs*' (or prime costs). They include: a) Raw material, b) Wages and c) Expenses, which can directly be attributed to a particular product.

Points to Ponder

2. Kindly illustrate the Direct Costs for:
 - i. A table for a Furniture Manufacturer
 - ii. A shirt for a Garment Manufacturer
 - iii. A pant piece for a Retailer
 - iv. A pant piece for a Textile Mill.

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As it is obvious, the direct costs will not cover all the costs. There are many costs which cannot be classified as direct costs, e.g., consumable stores, insurance, administrative expenses, selling expenses,

etc. These costs are called '*Indirect Costs*'. A more or less synonym of the same is '*Overhead Costs*'.

Let us have a closer look at these costs.

DIRECT COSTS

- * Direct Materials is material which can be physically identified with the finished product, e.g., wood for furniture or leather for shoes. Some direct materials are treated as indirect materials because of the practical difficulties involved in identifying such materials with the finished products, e.g., nails for shoes and furniture.

Points to Ponder

3. What are LIFO, FIFO, Weighted Average, etc. words which are generally used?

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- * Direct Labour includes labour costs which can be specifically and expeditiously identified with a finished product, e.g., piece-rate workers in a garment manufacturing company. Labour costs for persons such as material handlers and watch and ward staff are often treated as indirect labour, because of the difficulty or impracticability of tracing such costs to specific products.
- * Similarly, there can be Direct Selling Expenses (Sales Commission) or Direct Manufacturing Expenses (Power for Caustic Soda) also.

OVERHEAD COSTS

- * Manufacturing Overhead includes all factory costs other than those classified as direct material and direct labour. It includes costs such as indirect material, indirect labour, factory rent, depreciation, power, water and fuel, factory rates, taxes and insurance and so on. Factory overheads therefore include those manufacturing costs which are not directly identifiable with a specific product.

- * Selling Overheads refer to the indirect costs incurred in the effort to obtain or make sales. Selling costs include advertising, salesman costs and so on.
- * Distribution Overheads are indirect costs incurred in transporting the finished products from the factory to the customer.
- * General and Administrative Overheads cover all costs not included in the above categories. Such costs are general management office costs, accounting, personnel, donations and miscellaneous costs. In some companies, general and administrative costs are not categorized separately but are included in the factory and/or selling and distribution cost classifications.
- * Financial (Other) Costs include interest and other expenses on borrowed funds. Sometimes these costs are included in the general and administrative costs category.

Thus the total expenses (costs) are first divided into various categories as detailed above.

STEPS FOR FINDING OUT TOTAL UNIT COST

1. As mentioned earlier, the Direct Costs Per Unit can be identified without much difficulty.

But again, in real and actual situations, as you can well imagine, to find out actual raw material consumed per unit of output is not a simple task. It gets more complicated in multi-product situations, while deciding the appropriate method for arriving at exact value to the material which is consumed. Some simple assumptions have to be made to arrive at a near real estimate of even direct cost.

2. Allocation of Overheads:
 - i. One can understand that even for arriving at the figure of 'per unit raw material consumption' for different products, various detailed data will have to be maintained.

But even more complex task is to arrive at the overhead costs per unit.
 - ii. In a single company also, there can be many divisions. Say for instance, Textile Division and Chemical Division. In each of these divisions, there are likely to be various departments and the company can have many products.

- iii. Various methods have therefore been evolved in order to properly handle the complexity of overhead allocation.
- v. Broadly speaking these can be described as follows:

A. Manufacturing Overhead:

For the purpose of allocating the manufacturing overheads, there are two popular methods.

- i. Job Costing:

In an industry where production is carried out in batches (jobs), firstly all the manufacturing overheads are distributed to different production centres depending upon some logical formula e.g. rent is distributed as per floor space, stores and spares consumed are distributed as per cost of machines, labour overheads are distributed as per in ratio of number of employees in different production centre etc. This helps in finding out total overhead burden on a production centre. This is divided by number of hours worked during a period by a production centre to arrive at the hourly '*overhead rate*'.

Hourly '*overhead rates*' are arrived at for different production centre.

Depending upon the time that a job takes on the different production centre, the manufacturing overheads are added to that job.

- ii. Process Costing:

In manufacturing situations where the production is carried out continuously (e.g., chemical, cement, fertilizers, petrochemical industries, etc), the manufacturing costs are accumulated by departments instead of by production centre as done in Job-Order costing.

The department's manufacturing cost is divided by the number of units produced in that department in order to arrive at a departmental manufacturing cost per unit.

The above is a very broad idea about the two basic methods of allocating the manufacturing overhead cost to a unit of production. Quite a few aspects, however, require a consideration:

- a. The first step, in either method, is to identify the specific manufacturing overheads that are sought to be allocated. The next step would be to apportion the same to various production centre (in case of Job-Order situations) or to departments (in case of process situations). While doing, so certain simplistic assumptions will have to be taken. Example, the rent of the premises will be apportioned on the basis of floor space occupied by each production centre/department. Similarly electricity as per the H.P., insurance, as per value of assets, miscellaneous wages as per number of workers and so on. Thus, the manufacturing overhead is arrived at for each production centre/department. This overhead is then allocated to a unit of production, as we discussed earlier.
- b. One should not forget that all the machineries in an industry are not used for manufacturing. The boiler-house, the repair shop, etc. very much form part of the manufacturing process, but no production of goods actually takes place. In such cases (of service centre), the overhead is first apportioned to them (on the basis of area occupied, H.P., number of workers, etc) and then the total apportioned overhead of such service centre is further allocated to the production centre/department on the basis of the quantum (approximate) of services availed by the production centre/department.
- iii. In case of process-industries, the problem becomes more severe because of the existence of by-products/joint products. Even to precisely arrive at the raw material cost becomes difficult.
- a. *Joint products*' are the products which cannot be produced without the other. In other words, they are produced simultaneously from common raw material and/or production process.
- Joint costs*' are collected upto the point of their separation. At the separation stage, these costs are normally to be allocated to all the joint products based upon the 'nearest' approximation.
- The popular methods for so doing are:
- in the ratio of the weight of joint products, or
 - in the ratio of the selling prices of joint products, or
 - in the ratio of some other relevant parameters.

- b. *'By-products'* are the products which are produced, merely incidentally, during the process of producing some other products. Naturally they have a trivial value. If they have a significant value, they will be termed 'joint products'. For the purpose of costing, therefore, "zero value" is put to the byproducts having trivial value. At whatever price they are sold, the sales value, is reduced from the cost of the main product (if it is significant).

Points to Ponder

4. Would it be possible to follow either pure job-costing or process-costing in all industries?

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B. Administrative, Selling, Distribution, Finance and Interest Charges, etc. Overheads.

In order to arrive at the Total Unit Cost, even administrative, selling and distribution overheads will have to be allocated to a unit of output.

Some of the selling and distribution costs (e.g., sales commission) can easily be identified with a unit of production. But, not in all cases.

To arrive at a very precise method to allocate these overhead costs is naturally impossible.

To simplify this problem, these costs are allocated to various products, on a near approximate basis.

Sometimes, they are allocated on the basis of the ultimate selling price, or on the basis of the raw material cost or on any such/similar, '*near realistic*' basis.

In the above manner, the total unit cost is attempted to be computed.

In nutshell, in order to arrive at the total unit cost

- firstly the per unit direct costs are determined, and
- then, per unit overheads are added to this direct cost.

In order to arrive at per unit overhead cost, various methods, as described above are followed.

Selection of a particular method varies from company to company. It depends upon the type of industry, type of unit, the extent of precision required and also upon the skills of the cost accountants. Various assumptions are required. It is better to clarify and specify them before taking decisions.

Points to Ponder

5. To what use, can we put the figure of total unit cost?
6. What elements of total unit costs should be considered while valuing finished goods inventory?
7. How work-in-process inventory should be valued?
If Yes, to what extent?
If No, why?
9. In a multi-product, multi-division company, what treatment can be given to the
 - a. 'Head Office' expenses?
 - b. 'Interest' expenses?

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STANDARD COST

In the earlier part of this chapter, we understood the method of arriving at the total cost of a unit of output. This is only a 'Post-Mortem' exercise.

The management has always found the need to compare these actuals with some parameters. These parameters are called "*Standards*".

In other words, at the beginning of the year, in many organisations, the 'projected'/'standard' total cost of various items is attempted to be calculated.

Some important steps to be taken are as follows:

- a. The '*Standard Quantity*' and value of raw materials required and other direct costs per unit of output will have to be arrived at, after accounting for reasonable wastage.
- b. Similarly, the expected level of '*Operations*', i.e., targeted sales and likely production programme will have to be finalised.
- c. It will then be necessary to see the standards for,
 - i. machine-utilizations
 - ii. machine efficiencies
 - iii. labour efficiencies, etc.
- d. Then, based upon the targeted level of operations the quantum (in rupees) of various overheads will have to be estimated at a standard level & prices for various elements of costs.
- e. The per unit overhead will then be worked out based upon parameters fixed in para 'c' above.

In other words, an exercise is carried out to precisely estimate the total cost of a unit for a coming year or for a "normal" year

This is called '*Standard Cost*'.

The actual cost, from actual data is compared periodically with the standard cost.

An analysis of the difference, highlighting the cause of variations, is carried out (called '*Variance Analysis*').

Points to Ponder

10. How should 'standards' be fixed? Can past data be useful in fixing standards?
11. Can you list out the type of variance that can be calculated and the methods of their calculation?
12. When can variance analysis be effective?

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COST CONTROL

The word cost control is getting more and more popular. The reasons are obvious.

But unfortunately, the word '*Control*' many a times, is understood in a very 'limited' sense.

The right meaning is to incur the 'cost' effectively, to improve the input-output ratio and to get maximum mileage out of a rupee spent!

Just a 'reduction' in cost... does not always solve the problem! It is not 'cost control'.

Unnecessary costs have to be reduced. You have to ensure that excessive raw materials are not consumed. Other direct costs also should be checked. One should not pay excessive price for goods and services!

Machine efficiency, labour efficiency, machine and labour utilization etc. should be maximized. Setting up of 'standards' are helpful in these cases.

The major difficulty is how to control overheads. Some of them are controllable (e.g., advertisement, travelling, etc). Some of them are controllable only over a period of time (e.g., administrative expenses can be controlled through improving methods, gradually reducing the staff etc). Some of them are not controllable (e.g., Municipal Taxes).

- a. First step is to identify what are controllable overheads.
- b. Then decide, at what level of the organization structure they can be controlled. In other words, in the organization, who should control them.
- c. The next is to decide the method of controlling them after keeping in mind, what we stated in para 1 earlier.
- d. It is generally felt that an effective budgetary control and management information system goes a long way in controlling costs. We shall talk about it in our chapter on Budgetary Control.

VARIANCE ANALYSIS

This is a very useful tool for controlling the costs and monitoring the performance of a unit.

Having arrived at the Standard Cost for a unit of production or service,, the annual targets are fixed and budgets for the organization are finalized.

The actual performance is than compared with the budgeted performance to arrive at the differences (variances).

There are basically four types of variances.

1. Sales Variances
2. Material Variances
3. Labor Variances
4. Overhead Variances

The principal function of variance analysis is to compare the actual results with the planned (budgeted) result and help in explaining what happened!

The differences in sales, materials consumed, labor costs, overheads etc. are bifurcated to highlight how much of the variance is attributable to change in prices, how much to change in product-mix, how much to efficiency and yield, how much too capacity utilization (higher or lower quantity of productions/sales).

Technically they are called price variance, yield variance, mix variance, efficiency variances and so on. The basic logic is to break down the total variance, figure into sub components. For instance,

$$(AQ @ AM @ AP) - (AQ @ AM @ SP) = \text{Price Variance}$$

$$(AQ @ AM @ SP) - (AQ @ SM @ SP) = \text{Mix Variance}$$

$$(AQ @ SM @ SP) - (SQ @ SM @ SP) = \text{Usage Variance}$$

AQ = Actual Quantity, AM = Actual Mix, AP = Actual Price

With similar formula one can work out the variances for Sales, Material consumption and even labor costs.

“Overhead Cost” variance is nothing but the difference between the standard overhead costs charged to product and the actual overhead costs incurred.

This variance is broken down into ‘spending variance’ and volume small cap. In other words, increase/decrease in overhead costs attributable to increase/decrease in activity level is called volume variances and the balance of the overhead variance is the spending variances.

Many progressive organizations have developed a more advanced method of budgeting and variance analysis by following the ‘Flexi Budget’ system.

The concept of Flexi Budget, in simple words, is to develop alternate budget plans for different level of capacity utilization (Volume levels). This helps in comparing the actual performances with the standards (budgets) which are relevant to actual levels of activity. Flexi Budgets therefore are more commonly used for overhead cost controls.

I am sure; you must have realized that variance analysis is nothing else but a systematic/detailed study of the actual performances vis a vis the expectations / budgets / standards.

Each organization, depending upon its actual line of business, organizational and market complexities will have evolved its own system of carrying out the variance analysis.

Ultimately, the rewards, responsibility and answerability for each variance has to be fixed and improvements should be planned and executed. The active involvement of the Top Managements and a clear understanding of the method and assumptions behind the variance analysis amongst all the members of the organization is a prerequisite of a good and effective variance analysis, failing which it will just remain a complex number game.

Points to Ponder

13. How would you control, say
 - i. Administrative salary cost and overtime cost.
 - ii. Advertisement expenses.
 - iii. Repairs to machinery.
 - iv. Salesmen’s travelling costs.
14. Would your answer depend upon:
 - * Type of Industry
 - * Type of Organisation
 - * Type of Past and Projected Performance?
 If Yes, how?
15. What is Activity Based Costing (ABC)?
16. How are these costing techniques relevant for a clinical research organization? Say for estimating, collecting and controlling the cost of various clinical trials?
17. How do we monitor the overall profitability of such service industry unit?