

Cost Accounting

Evolution: Cost accounting has long been used to help managers understand the costs of running a business. Modern cost accounting originated during the industrial revolution, when the complexities of running a large scale business led to the development of systems for recording and tracking costs to help business owners and managers make decisions.

In the early industrial age, most of the costs incurred by a business were what modern accountants call "variable costs" because they varied directly with the amount of production. Money was spent on labor, raw materials, power to run a factory, etc. in direct proportion to production. Managers could simply total the variable costs for a product and use this as a rough guide for decision-making processes.

Some costs tend to remain the same even during busy periods, unlike variable costs, which rise and fall with volume of work. Over time, the importance of these "fixed costs" has become more important to managers. Examples of fixed costs include the depreciation of plant and equipment, and the cost of departments such as maintenance, tooling, production control, purchasing, quality control, storage and handling, plant supervision and engineering. In the early twentieth century, these costs were of little importance to most businesses. However, in the twenty-first century, these costs are often more important than the variable cost of a product, and allocating them to a broad range of products can lead to bad decision making. Managers must understand fixed costs in order to make decisions about products and pricing.

For example: A company produced railway coaches and had only one product. To make each coach, the company needed to purchase Rs.60 of raw materials and components, and pay 6 laborers Rs.40 each. Therefore, total variable cost for each coach was Rs.300. Knowing that making a coach required spending Rs.300, managers knew they couldn't sell below that price without losing money on each coach. Any price above Rs.300 became a contribution to the fixed costs of the company. If the fixed costs were, say, Rs.1000 per month for rent, insurance and owner's salary, the company could therefore sell 5 coaches per month for a total of Rs.3000 (priced at Rs.600 each), or 10 coaches for a total of Rs.4500 (priced at Rs.450 each), and make a profit of Rs.500 in both cases.

CONCEPT OF COST ACCOUNTING

A keen observation of the above questions reveals that the word **cost** is common in all of them except the second question. The second question has its focus on the word **profit**. What is the meaning of the words: **cost** and **profit**?

Cost is defined as "the resources consumed to accomplish a specified objective".

Cost Accounting is a system used to record, summarize and report cost information. Some cost information is reported to external users such as shareholders and creditors in the form of income statements and balance sheets. Other cost information is presented in the form of special reports to the internal users such as managers in the company, which is used in "deciding how to operate the organization". These "decisions" are simply the choices managers make about how their organizations should do things.

What is cost?

Cost may be defined as the amount of expenditure (actual or notional) incurred on or attributable to a given item. Cost represents the resources that have been or must be sacrificed to attain a particular objective. These resources can be either direct or indirect.

Cost information can be used for the following purposes:

- The analysis of profitability of individual products, services or jobs
- The analysis of profitability of different departments or operations
- The analysis of cost behavior of various items of expenditure in the organization can be done.
- It is used to locate differences between actual results and expected results. Such differences can be also traced to the individual cost centre with the efficient cost system.
- It can be used in setting the prices so as to cover costs and generate an acceptable level of profit.

Financial & Cost Accounting

No.	Basis	Financial Accounting	Cost Accounting
1.	Objective	Financial performance and position	Ascertain cost and cost control
2.	Costs and profits	Shows overall costs and profit / loss	Shows details for each product, process, job, contract, etc
3.	Control / Report	Emphasis on reporting	Emphasis on control and reporting
4.	Decision making	Limited use	Designed for decision making
5.	Responsibility	Does not fix responsibility	Can effectively fix responsibility
6.	Time frame	Focus on historical data	Focus on present and future
7.	Type of reports	General reports like P&L Account, Balance Sheet, Cash Flow Statement	Can generate special reports and analysis
8.	Legal need	Statutory requirement	Voluntary, except for some cases
9.	Transactions	Records external transactions	Records internal and external transactions
10.	Reader	Everybody	Internal management
11.	Formats	Standard, as per law	Tailor made
12.	Access	Everybody, except for some	Very limited access
13.	Unit of value	Monetary	Monetary and physical

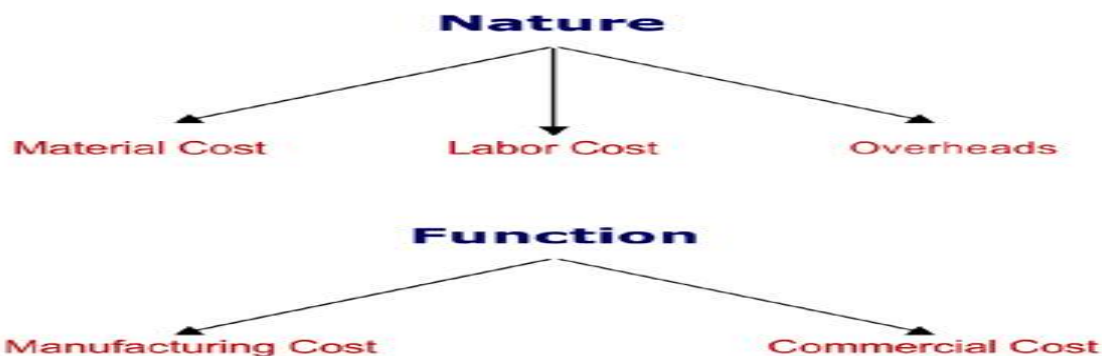
TYPES OF COSTS

The bases of classifying costs are the nature of cost, function, direct/indirect, variability, controllability, normality, capital/revenue, time, planning and control, managerial decisions etc. The classification of costs is done based on these factors. The concept of cost center refers to the smallest segment of activity or area of responsibility for which costs are accumulated. A cost unit is nothing but a unit of output in the production of which the costs are incurred. The techniques of costing can be classified as historical costing, absorption costing, marginal costing, direct costing, standard costing and uniform costing.

Different Basis for classification of Cost

Cost classification is the process of grouping costs according to their common characteristics. A suitable classification of costs is very helpful in identifying a given cost with cost centers or cost units. Costs may be classified according to their nature, i.e., material, labor and expenses and a number of other characteristics. Depending upon the purpose to be achieved and requirements of a particular concern the same cost figures may be classified into different categories. The classification of costs can be done in the following ways:

1. By Nature of Element
2. By Functions
3. As Direct and Indirect
4. By Variability
5. By Controllability
6. By Normality
7. By Capital and Revenue
8. By Time
9. According to Planning and Control
10. For Managerial Decisions
11. Others.



Each classification will be discussed in detail in the following paragraphs

By Nature or Element or Analytical Classification

The costs are divided into three categories i.e. Materials, Labor and Expenses. Further sub-classification of each element can be done; for example, material into raw material components, and spare parts, consumable stores, packing material, etc.

By Functions

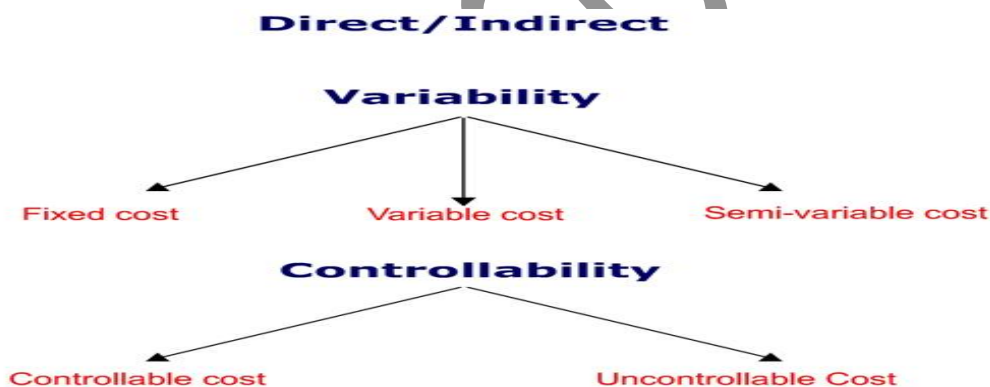
It leads to grouping of costs according to the broad divisions of functions of a business undertaking or basic managerial activities, i.e. production, administration, selling and distribution. According to this classification costs are divided as follows:

Manufacturing and Production Costs

This category includes the total of costs incurred in manufacture, construction and fabrication of units of production.

Commercial Costs

This category includes the total of costs incurred in the operation of a business undertaking other than the costs of manufacturing and production. Commercial costs may further be sub-divided into (a) administrative costs and (b) selling and distribution costs.



As Direct and Indirect

According to this classification, total cost is divided into direct costs and indirect costs. Direct costs are those costs which are incurred for and may be conveniently identified with a particular cost center or cost unit. The common examples of direct costs are materials used and labor employed in manufacturing an article or in a particular process of production. Indirect costs are those costs which are incurred for the benefit of a number of cost centers or cost units and cannot be conveniently identified with a particular cost center or cost unit. Examples of indirect costs include rent of building, management salaries, machinery depreciation, etc. The nature of the business and the cost unit chosen will determine the costs as direct and indirect. For example, the hire charges of a mobile crane used onsite by a contractor would be regarded as a direct cost since it is identifiable with the project/site on which it is employed, but if the crane is used as a part of the services of a factory, the hire charges would be regarded as indirect cost because it will probably benefit more than one cost center or department. The distinction between direct and

indirect cost is essential because the direct costs of a product or activity can be accurately identified with the cost object while the indirect costs have to be apportioned on the basis of certain assumptions about their incidence.

By Variability

The basis for this classification is the behavior of costs in relation to changes in the level of activity or volume of production. On this basis, costs are classified into three groups viz. fixed, variable and semi-variable.

Fixed (or period) Costs

Fixed costs are those which remain fixed in total with increase or decrease in the volume of output or activity for a given period of time or for a given range of output. Fixed costs per unit vary inversely with the volume of production, that is fixed cost per unit decreases as production increases and increases as production decreases. Examples of fixed costs are rent, insurance of factory building, factory manager's salary, etc. These costs are constant in total amount but fluctuate per unit as production changes. These costs are known as period costs because these are mostly dependent on time rather than on output. These costs are also termed as capacity costs.

Variable (or product) Costs

Variable costs are those which vary in total directly in proportion to the volume of output. These costs per unit remain relatively constant with changes in volume of production or activity. Thus, variable costs fluctuate in total amount but tend to remain constant per unit as production activity changes. Examples are direct material costs, direct labor costs, power, repairs, etc. Such costs are known as product costs because they depend on the quantity of output rather than on time.

Semi-variable Costs

Semi-variable costs are those which are partly fixed and partly variable. For example, telephone expenses include a fixed portion of monthly charge plus variable charge according to the number of calls made; thus total telephone expenses are semi-variable. Other examples of such costs are depreciation, repairs and maintenance of building and plant, etc.

By Controllability

On this basis costs are classified into two categories:

Controllable Costs

If the costs are influenced by the action of a specified member of an undertaking, that is to say, costs which are at least partly within the control of management they are called controllable costs. An organization is divided into a number of responsibility centers and controllable costs incurred in a particular cost center can be influenced by the action of the manager responsible for the center. Generally speaking, all direct costs including direct material, direct labor and some of the overhead expenses are controllable by lower level of management.

Uncontrollable Costs

If the costs cannot be influenced by the action of a specified member of an undertaking, that is to say, which are not within the control of management they are called

uncontrollable costs. Most of the fixed costs are uncontrollable. For example, rent of the building is not controllable and so is managerial salaries. Overhead cost, which is incurred by one service section or department and is apportioned to another which receives the service is also not controllable by the latter.

Controllability of costs depends on the level of management (top, middle or lower) and the period of time (long-term or short-term).



By Normality

On this basis, the costs are classified into two categories

Normal Cost

It is the cost which is normally incurred at a given level of output in the conditions in which that level of output is normally attained. It is a part of cost of production.

Abnormal Cost

It is the cost which is not normally incurred at a given level of output in the conditions in which that level of output is normally attained. It is not a part of cost of production and charged to Costing Profit and Loss Account.

By Capital and Revenue or Financial Accounting Classification

If the cost is incurred in purchasing assets either to earn income or increasing the earning capacity of the business it is called capital cost, for example, the cost of a rolling machine in case of steel plant. Though the cost is incurred at one point of time the benefits accruing from it are spread over a number of accounting years. Revenue expenditure is any expenditure done in order to maintain the earning capacity of the concern such as cost of maintaining an asset or running a business. Example, cost of materials used in production, labor charges paid to convert the material into production, salaries, depreciation, repairs and maintenance charges, selling and distribution charges, etc. While calculating cost revenue items are considered whereas capital items are completely ignored.

By Time

Costs can be classified as (i) Historical costs and (ii) Predetermined costs.

Historical Costs

The costs which are ascertained after being incurred are called historical costs. Such costs are available only when the production of a particular thing has already been done. Such costs are only of historical value and not at all helpful for cost control purposes.

Predetermined Costs

Such costs are estimated costs, i.e. computed in advance of production taking into consideration the previous periods' costs and the factors affecting such costs. If they are determined on scientific basis they become standard cost. Such costs when compared with actual costs will give the variances and reasons of variance and will help the management to fix the responsibility and to take remedial action to avoid its recurrence in future.

Historical costs and predetermined costs are not mutually exclusive. Even in a system when historical costs are used, predetermined costs have a very important role to play because a figure of historical cost by itself has no meaning unless it is related to some other standard figure to give meaningful information to the management.



According to Planning and Control

Cost accounting furnishes information to the management which is helpful in discharging the two important functions of management i.e. planning and control. For the purpose of planning and control, costs are classified as budgeted costs and standard costs.

Budgeted Cost

Budgeted costs represent an estimate of expenditure for different phases or segments of business operations, such as manufacturing, administration, sales, research and development, for a period of time in future which subsequently becomes the written expression of managerial targets to be achieved. Various budgets are prepared for different phases/segments of business, such as sales budget, raw material cost budget, labor cost budget, cost of production budget, manufacturing overhead budget, office and administration overhead budget. Continuous comparison of actual performance (i.e., actual cost) with that of the budgeted cost is made so as to report the variations from the budgeted cost to the management for corrective action.

Standard Costs

The Institute of Cost and Management Accountants, London defines standard cost as "the predetermined cost based on a technical estimate for materials, labor and overhead for a selected period of time and for a prescribed set of working conditions". Thus, standard cost is a determination, in advance of production, of what should be its cost under a set of conditions.

Budgeted costs and standard costs are similar to each other to the extent that both of them represent estimates of cost for a period of time in future. In spite of this, they differ in the following respects:

- Standard costs are scientifically predetermined costs of every aspect of business activity whereas budgeted costs are mere estimates made on the basis of past actual financial accounting data adjusted to future trends. Thus, budgeted costs are projection of financial accounts whereas standard costs are projection of cost accounts.
- The primary emphasis of budgeted costs is on the planning function of management whereas the main thrust of standard costs is on control.
- Budgeted costs are extensive whereas standard costs are intensive in their application. Budgeted costs represent a macro approach of business operations because they are estimated in respect of the operations of a department. Contrary to this, standard costs are concerned with each and every aspect of business operation carried in a department, budgeted costs are calculated for different functions of the business, i.e. production, sales, purchases, etc. whereas standard costs are compiled for various elements of costs, i.e. materials, labor and overhead.

For Managerial Decisions

On this basis, costs may be classified into the following categories:

Marginal Cost

Marginal cost is the additional cost to be incurred if an additional unit is produced. In other words, marginal cost is the total of variable costs, i.e. prime cost plus variable overheads. It is based on the distinction between fixed and variable costs.

Out of Pocket Costs

This is that portion of the cost which involves payment, i.e. gives rise to cash expenditure as opposed to such costs as depreciation, which do not involve any cash expenditure. Such costs are relevant for price fixation during recession or when make or buy decision is to be made.

Differential Costs

If there is a change in costs due to change in the level of activity or pattern or method of production they are known as differential costs. If the change increases the cost, it will be called incremental cost and if the change results in the decrease in cost it is known as decremental cost.

Sunk Costs

Sunk cost is another name for historical cost. It is a cost that has already been incurred and is irrelevant to the decision making process. A good example is depreciation on a fixed asset. Depreciation on a given asset is a sunk cost because the cost (of purchasing the asset) has already been incurred (when it was purchased) and it cannot be affected by any future action, though we allocate the depreciation cost to future periods the original cost of the asset is unavoidable. What is relevant in this context is the salvage value of the asset not the depreciation. Thus, sunk costs are not relevant for decision-making and are not affected by increase or decrease in volume.

Imputed (or notional) Costs

These costs appear in cost accounts only. For example notional rent charged on business premises owned by the proprietor, interest on capital for which no interest has been paid. When alternative capital investment projects are being evaluated it is necessary to consider the imputed interest on capital before a decision is arrived as to which is the most profitable project.

Opportunity Cost

It is the maximum possible alternative earnings that will be foregone if the productive capacity or services are put to some alternative use. For example, if an owned building is proposed to be used for a project, the likely rent of the building is the opportunity cost which should be taken into consideration while evaluating the profitability of the project.

Replacement Cost

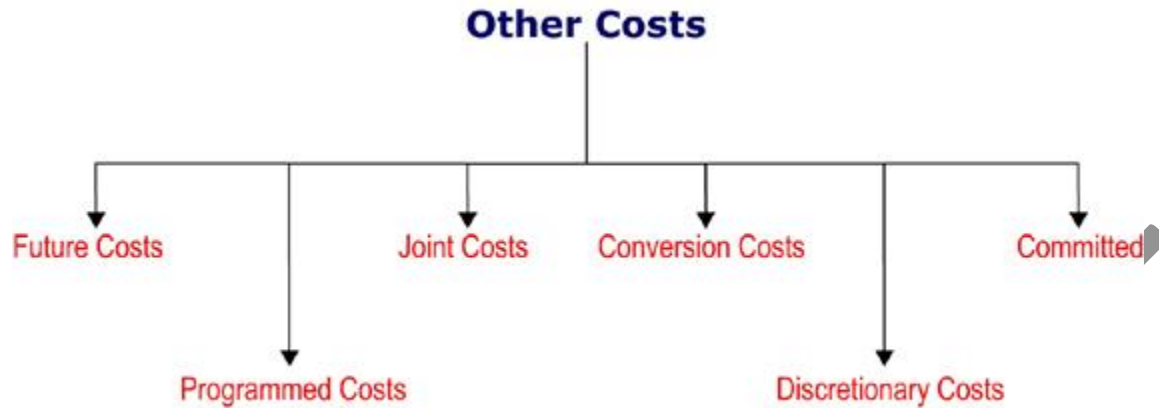
It is the cost at which there could be purchase of an asset or material identical to that which is being replaced or revalued. It is the cost of replacement at current market price.

Avoidable and unavoidable Cost

Avoidable costs are those which can be eliminated if a particular product or department with which they are directly related to, is discontinued. For example, salary of the clerks employed in a particular department can be eliminated, if the department is discontinued. Unavoidable cost is that cost which will not be eliminated with the discontinuation of a product or department. For

example, salary of factory manager or factory rent cannot be eliminated even if a product is eliminated.

Other Types of Costs



Future Costs

Are those costs that are expected to be incurred at a later date.

Programmed Cost

Certain decisions reflect the policies of the top management which results in periodic appropriations and these costs are referred to as programmed cost. For example, the expenditure incurred by the company under the Jawahar Rojgar Yojana program initiated by the prime minister is a programmed cost which reflects the policy of the top management.

Joint Cost

Joint cost is the cost of manufacturing joint products up to or prior to the split-off point. Cost incurred after the split-off point is called separable cost. Joint cost is common to the processing of joint products and by-products till the point of separation and cannot be traced to a particular product before the point of split-off.

Conversion Cost

Conversion cost is the cost incurred in converting the raw material into finished product. It can be calculated by deducting the cost of direct materials from the production cost.

Discretionary Costs

Discretionary costs are those costs which do not have obvious relationship to levels of capacity or output activity and are determined as part of the periodic planning process. In each planning period the management decides on how much to spend on certain discretionary items such as advertising, research and development, employee training. These costs are amenable for alteration by the management.

Committed Cost

Committed cost is a fixed cost which results from the decisions of the management in the prior period and is not subject to the management control in the present on a short run basis. They arise from the possession of production facilities, equipment, an organization setup etc.

Some examples of committed costs are: plant and equipment depreciation, taxes, insurance premium and rent charges.

COST UNITS

Managers are often interested in knowing the cost of something. The 'something' for which the cost has to be ascertained is known as cost objective or cost object or cost unit. Examples of cost units include products, activities, departments, number of patients treated, sales regions etc.

For example, if a factory produces motor cars then the cost unit would be a motor car because the costs are all incurred in producing motor cars.

Let us take up a more complex situation. Consider a bus operator providing bus services to the public between most of the major cities of the country. Suppose the bus operator wants to fix a cost unit, what is it?

Note that here there is no production, what is provided is a service.

Each trip between two cities may be taken as a cost unit. Alternatively cost per kilometer of travel may be taken as a cost unit. However, neither of the above cost units relates to the passenger who buys the service.

If the operator wants to fix a price to be charged to each passenger, the above cost units would have to be adjusted further.

Assume that a bus covers a distance of 700 km per day carrying 30 passengers on an average, the output is $700 \times 30 = 21,000$ passenger kilometers per day. On an average the passenger kilometers covered by each bus per week is 1,00,000. The total cost of operation per bus per week is Rs.80,000, the cost per passenger kilometer is = Rs.0.80

$$\text{Cost per passenger kilometer} = \frac{80,000}{1,00,000} = \text{Re.0.80}$$

The implication is that the bus operator must charge, on an average, over Rs.0.80 per kilometer to each passenger in order to make a profit.

COST CENTERS

The smallest segment of activity or area of responsibility for which costs are accumulated. In the manufacture and sale of a product or in the rendering of a service, several activities may have to be performed. These activities are usually carried out by different departments or sections of the company. For example, in a pharmaceutical company, the raw materials may be purchased by a purchase department, stocked up in a store, processed in one or more processing departments packed in a packing department and sold by a sales and distribution department. Hence cost statistics are conveniently accumulated for each

department. In Cost Accounting each department would be called a Cost Center. Typically cost centers are departments, but in some instances, a department may contain several cost centers. For example, a machining department may be under one foreman but it may contain various groups of machines, such as lathes, milling machines, etc.

As each department is managed by a departmental manager, the cost of a department would be a measure of how the department's manager is performing. In fact, by reporting departmental costs to the concerned managers, they will better understand the cost consequences of their actions so that departmental performance becomes more cost effective.

Relevant Videos:-

<https://www.youtube.com/watch?v=OdkstgtuNWk>

Lay's Chips Factory - How Are Lay's Potato Chips Made - Automatic Potato Chips Making Machines

https://www.youtube.com/watch?v=HqihW834b_Y

कैसे बनती है लेस कंपनी में वेफर , कितनी बड़ी है यह कंपनी देखिये.

<https://www.youtube.com/watch?v=SQsOvDPDpYE>

Parle-G Biscuits Manufacturing process - Food Factory Tour- Modern Food factory, Mega Factory

<https://www.youtube.com/watch?v=eP2Py-ek5to>

Car Manufacturing Plant Tour

<https://www.youtube.com/watch?v=QpUHWXei5k>

How It's Made Clothes - How Clothes Are Made | Full Production

<https://www.youtube.com/watch?v=fFZG7ynMk0s>

Basics of Cost Accounting & Cost Classifications

<https://www.youtube.com/watch?v=-5k3JSwBvCA>

Basics of Cost Accounting & Cost Classifications (Part-2)

<https://www.youtube.com/watch?v=gy6KEo2II1A>

Cost Accounting - Basics of Cost Accounting & Cost Classification