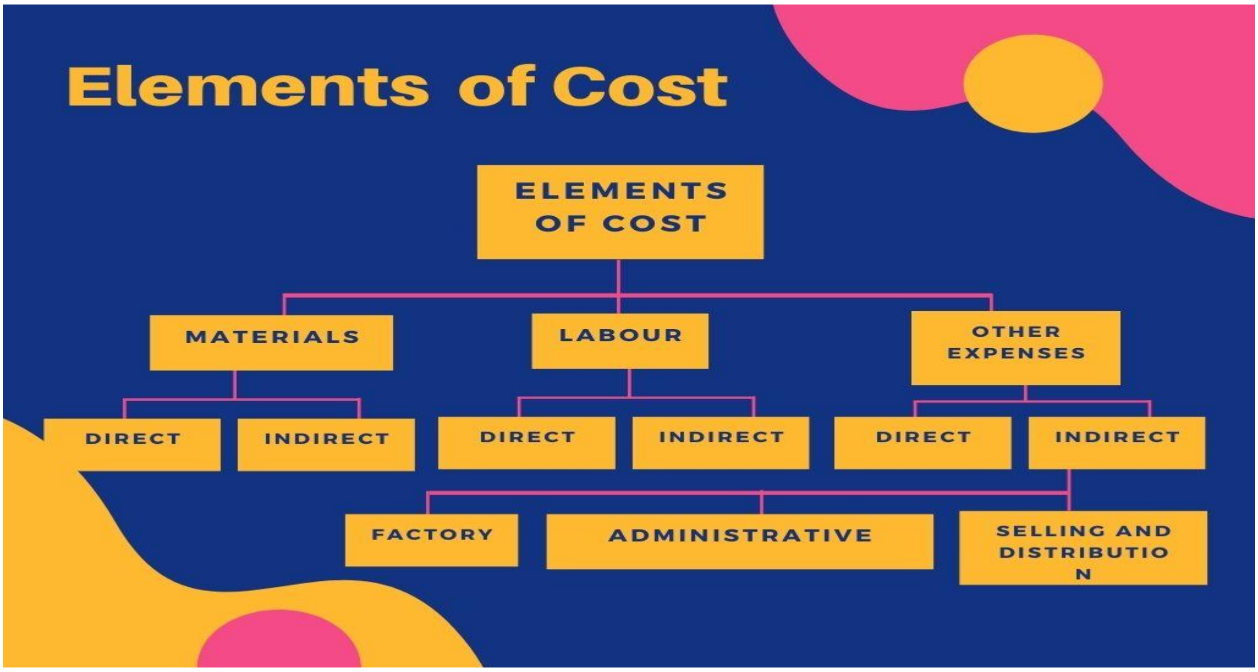

The correct of interpretation of the term 'cost' may also be understood by having knowledge about basic elements of cost. These elements have been shown in the above figure.

The following is the brief description of these elements of cost:

1. **Direct Material:** Direct material is material that can be directly identified with each unit of the product. Direct material can be conveniently measured and directly charged to the product. For example, raw cotton in textile manufactures, sugarcane in sugar industry and leather for shoe-making industry. The cost of direct material includes the following:

(a) All type of raw materials issued from the store,

(b) Raw materials specifi cally purchased for the specifi c job or project,

(c) Raw materials transferred from one cost centre to another cost centre.

(d) Primary packing material, like cartons, cardboard boxes, etc.

2. **Indirect Material:** They are those materials which do not normally form a part of the finished product. It has been defined as "materials which cannot be allocated but which can be apportioned to or absorbed by cost centres or cost units". These are:

- Stores used in maintenance of machinery, buildings, etc., like lubricants, cotton waste, bricks and cements.
- Stores used by the service departments, i.e., non-productive departments like Power house, Boiler house and Canteen, etc.
- Materials which due to their cost being small, are not considered worth while to be treated as direct materials.

3. **Direct Labour:** Direct labour is labour that can be identified directly with a unit of finished product. All the labour charges expended in altering the construction, composition, confirmation or condition of the product is included in it. It includes the payment of direct wages made to the following groups of direct labour:

- Direct labour engaged on the actual production of the product
- Direct labour engaged in adding this manufacture by way of supervision, maintenance and tool setting,
- Inspectors, analysts, etc. specially required for such production.

4. **Indirect Labour:** The wages of that labour which cannot be allocated but which can be apportioned to or absorbed by, cost centres or cost units is known as indirect labour. In other words, wages paid to labour which are employed other than or production constitute indirect labour costs. Examples of indirect labour are: charge hands and supervisors, maintenance workers, labour employed in service departments, material handling and internal transport, apprentices, trainees and instructors, factory clerical staff and labour employed in time and security offi ce, etc

5. **Direct or Chargeable Expenses:** They include all expenditures other than direct material and direct labour that are specifically incurred for a particular product or job. Such expenses are charged directly to the particular cost account concerned as part of the prime cost. Examples of direct expenses are: excise duty, royalty, surveyor's fees, cost of rectifying defective work, travelling expenses to the job, experimental expenses of projects, expenses of designing or drawings, repairs and maintenance of plant obtained on hire and hire of special equipment obtained for a contract. 6.
6. **Indirect Expenses:** Indirect expenses are expenses which cannot be allocated but which can be apportioned to or absorbed by cost centres or cost units as rent, insurance, municipal taxes, salary of manager, canteen and welfare expenses, power and fuel, cost of training for new employees, lighting and heating, telephone expenses, etc.

7. **Overheads:** Overheads may be defined as the cost of indirect materials, indirect labour and such other expenses including services as cannot conveniently be charged direct to specifi c cost units. Thus, overheads are all expenses other than direct expenses. Overheads may be divided into following categories:

(a) **Factory or works overheads** cover all indirect expenditure incurred by the undertaking from the receipt of the order until its completion is ready for dispatch either to the customer or to the finished goods store. The overheads also include: depreciation on plant and machinery, buildings and equipments, insurance charges on fixed assets, repairs and maintenance of fixed assets, electricity charges, and coal and other fuel charges, rent, rates and taxes of works, etc.

(b) **Office and administrative overhead** consists of all expenses incurred in the direction, control and administration of a factory. Examples are the expenses in running the general office e.g., office rent, light, heat, salaries, salary to secretaries and accountants, general managers, directors, executives, investigations and experiments and miscellaneous fixed charges.

(c) **Selling overheads** comprise the cost of products or distributors of soliciting and recurring orders for the articles of commodities dealt in and of efforts to find and retain customers. It includes sales office expenses, salesmen's salaries and commission, showroom expenses, advertisement charges, fancy packing, samples and free gifts, after sales service expenses and demonstration and technical advice to potential customers.

D) **Distribution overheads** comprise all expenditure incurred from the time the product is completed in the work until it reaches its destination. It includes warehouse rent, warehouse staff salaries, insurance, expenses on delivery vans and trucks, expenses on special packing for bulk transport, losses in warehouse stocks and fi nished goods damaged in transit and cost of repairing, etc.

Classification of cost

DIRECT COST: The expenses on material and labour economically and easily traceable to a product, service or job are considered as direct costs. In the process of manufacture or production of articles, materials are purchased, labourers are employed and the wages are paid to them, certain other expenses are also incurred directly. Since all these take an active and direct part in the manufacture of a particular commodity, hence are called direct costs.Example: Cost of meat in a burger

INDIRECT COST: The expenses incurred on those items which are not directly chargeable to production are known as indirect costs. Example: In production, salaries of timekeepers, storekeepers, foremen are paid, certain expenses for running the administration are incurred. All of these cannot be conveniently allocated to production and hence are called indirect costs

FIXED COST: The cost which does not vary but remains constant within a given period of time and range of activity in spite of the fluctuations in production, is known as fixed cost. Example: rent, insurance of factory buildings etc. remain the same for different levels of production.

VARIABLE COST: These costs tend to vary with the volume of output. Any increase in the volume of production results in an increase in the variable cost and vice versa. Example: cost of material, cost of labour etc.

Semi-variable Cost: The cost which does not vary proportionately but simultaneously cannot remain stationery at all times is known as semi variable cost. It can also be called as semi-fixed cost. Example: Depreciation, repairs etc.

CONTROLLABLE COSTS: These are the costs which can be influenced by the action of a specified member of an undertaking. A business organization is usually divided into a number of responsibility centres and each centre is headed by an executive. The executive can thus control the costs incurred in that particular responsibility centre.

UNCONTROLLABLE COSTS: Costs which cannot be influenced by the action of a specified member of an undertaking. Example: Expenditure incurred by the tool room is controllable by the foreman in charge of that section but the share of the tool room expenditure which is apportioned to a machine shop is not to be controlled by the machine shop foreman.

PRODUCT COSTS: Costs which become parts of the cost of the product rather than an expense of the period in which they are incurred are called as "Product Costs". In financial statements such costs are treated as assets until the goods they are assigned to be sold. They become an expense at that time. These costs may be fixed as well as variable. Example: Cost of raw materials and direct wages, depreciation on plant & equipment etc.

PERIOD COSTS: Costs which are not associated with production are called "Period Costs". They are treated as an expense of the period× in which they are incurred. They may also be fixed as well as variable. Such costs include General Administration costs, Salesman salaries and commission, depreciation on office facilities etc. They are charged against the revenue of the relevant period.

RELEVANT & IRRELEVANT COST: Relevant costs are those costs which would be changed by the managerial decision, while irrelevant costs are those which would not be affected by the decision. Example: If a manufacturer is considering closing down of an unprofitable retail sales shop, wages payable to the workers of the shop are relevant in this connection since they will disappear on closing down of the shop. But prepaid rent for the shop or unrecovered costs of any equipment which will have to be scrapped will be irrelevant costs which must be ignored.

SHUTDOWN COSTS: A manufacturer or an organization rendering service may have to suspend its operations for a period on account of some temporary difficulties such as shortage of raw materials, non availability of labour etc. During this period though no work is done yet certain fixed costs such as rent and insurance of buildings, depreciation etc. for the entire plant will have to be incurred. Such costs of the idle plant are known as shut down costs.

SUNK COSTS: These are costs which have been created by a decision that was made in the past that cannot be changed by any decision that will be made in the future. Investment in plant & machinery are prime examples of such costs. Since sunk costs cannot be altered by later decisions, they are irrelevant for decision making.

IMPUTED OR HYPOTHETICAL COSTS: These are costs which do not involve any cash outlay. They are not included in cost accounts but are important for taking into consideration while making management decisions. Examples: Interest on internally generated funds, salaries of the proprietor or partner of a partnership firm, rented value of company's own property etc. When two projects require unequal outlays of cash, the management must take into consideration interest on capital for judging the relative profitability of the projects though the company may use internally generated funds for the purpose.

DIFFERENTIALCOSTS: The difference in total costs between two alternatives is termed as „differential costs‟. In case the choice of an alternative results in increase in total costs, such increase in costs is known as „incremental costs.‟ In case the choice results in decrease in total costs, such decrease in total costs is termed as „decremental costs‟. While assessing the profitability of a proposed change the incremental costs are matched with incremental revenue and vice versa. The proposed change is taken only when it is profitable.

OUT-OF-POCKET COST: This means the present or future cash expenditure regarding a certain decision which varies depending upon the nature of decision made. Example: A company has its own trucks for transporting raw materials and finished products from one place to another. It seeks to replace these trucks by employment of public carrier of goods. In making this decision of course, the depreciation of the trucks is not to be considered, but the management must take into account the present expenditure on fuel, salary to drivers and maintenance. Such costs are termed as out- of-pocket expenses.

CONVERSION COST It is the cost incurred for converting the raw material into finished product. It comprises of direct labour cost, direct expenses and factory overheads.

Opportunity cost An Opportunity cost refers to the advantage, in measurable terms, which has been foregone on account of not using the facilities in the manner originally planned.For example: If an own building is utilized for housing a new project, the likely revenue, which the building could fetch, if rented out, is the opportunity cost.It should be taken into account while evaluating the profitability of the project.

Cost center and cost unit

The first phase in the cost analysis process is to identify the cost centres, and the second is to assess the costs of those departments using the cost units determined by top management. Cost centres produce profit through operational efficiency, but they do not directly contribute. The cost unit aids in the quantification of these departments' costs. Cost centres are primarily developed to assist management in operations like budgeting, strategic planning, decision-making, and control. Cost unit, on the other hand, serves no such purpose because it is simply a way of expressing cost.

In cost techniques, two types of important activities are involved. This is the classification and collection of expenditure based on cost elements. Another is the allocation and apportionment of the expenditure for both the cost centre and cost unit. An accountant needs to assert the cost of different objects in the system of cost accounting. The cost centre meaning is one portion of the whole organisation, to which the cost is charged. On the contrary, cost unit or unit cost refers to a unit in which cost is measured or expressed. The selection of the suitable cost centre or cost unit is evaluated based on several factors like the organisation of the factory, availability of information, size and structure of the firm, the provision of costing, condition of incidence, and others.

Cost centre

Cost centre can be defined as the one or more units of the firm that don’t contribute directly to the process of revenue generation in an organisation but incur expenses. This is a type of responsibility centre that is accountable for incurring expenses that are under their control. It indicates any section of the organisation’s product or service for which specific cost collection is looked for. A cost centre, according to the Institute of Cost and Management Accountants (ICMA), is a location, person, or item of equipment (or a combination of these) for which costs can be determined and utilised for cost control.

A cost centre, in other words, is any location, person, machine, section, part, activity, or function inside an organisation or enterprise where expenses are gathered or aggregated and assigned.Given the foregoing, a cost centre is a natural division of an organisation that aids in the measurement and understanding of operating costs as well as the application of costs to goods.

The simplicity of cost accumulation, comparability, and cost control are all factors that go into forming a cost centre in a corporation. A person, machine, or department will be classified as a cost centre if costs accumulate for that entity.

Cost centres can be separated into two categories in a project:

- Production cost centres
- Service cost centres

Cost Centre Example-

The research and development wing (R&D) is responsible for developing new techniques and products for the organisation. This department incurs a lot of expenses while comping up with new ideas, technologies, and products. There is no revenue generated for the department because the credits are transferred to the sales department for selling the products.

Advantages & Disadvantages of Cost Centre

Advantages of Cost Centre:

1. Provides a clear understanding of the costs incurred by a specific department or division within a company. This allows for better budgeting and cost control.
2. Helps to identify inefficiencies and areas for cost reduction. By isolating the costs of a specific department or division, it becomes easier to identify areas where costs can be reduced.
3. Facilitates the allocation of costs to specific products or services. This allows for more accurate pricing and profitability analysis.
4. Provides a basis for performance evaluation and accountability. By measuring the costs incurred by a specific department or division, it becomes easier to evaluate the performance of that department or division.
5. Allows for better decision-making. By having a clear understanding of the costs incurred by a specific department or division, it becomes easier to make informed decisions about that department or division.
6. Facilitates the identification of trends and patterns in costs. By isolating the costs of a specific department or division, it becomes easier to identify trends and patterns in costs over time.
7. Can be used as a tool for cost-benefit analysis. By isolating the costs of a specific department or division, it becomes easier to conduct a cost-benefit analysis to determine the financial impact of a specific decision or action.

Disadvantages of Cost Centre:

1. Can be time-consuming and resource-intensive to set up and maintain. Setting up and maintaining cost centres requires a significant investment of time and resources.
2. Can be difficult to accurately allocate costs. Allocating costs to specific departments or divisions can be challenging and may not always be accurate.
3. Can lead to a lack of focus on overall company performance. By focusing on the costs of specific departments or divisions, it can be easy to lose sight of the overall performance of the company.
4. Can lead to a lack of collaboration and cooperation. By isolating the costs of specific departments or divisions, it can lead to a lack of collaboration and cooperation among departments and divisions.
5. Can lead to a lack of flexibility. By isolating the costs of specific departments or divisions, it can make it more difficult to respond to changes in the business environment.

6. Can lead to a lack of transparency. By isolating the costs of specific departments or divisions, it can make it more difficult to understand the overall financial performance of the company.
7. Can lead to a lack of motivation and engagement. By focusing on the costs of specific departments or divisions, it can lead to a lack of motivation and engagement among employees, who may feel that their efforts are not being recognized or rewarded.

Cost Unit

The cost unit is defined as the unit of product, service, time, activity, or combination in relation to which cost is estimated. At the time of preparing the cost statements and accounts, a particular unit is required to be selected. It helps to identify the cost accurately and allocate the various expenses. It assists the cost measurement process of the company and promotes comparison.

Cost Unit Example-

The cost unit of the hotel industry is a room and the cost unit of the steel industry would be a ton. This is preceded by the cost centre.

There are both simple units and complex units in cost units. A simple unit represents a single standard measurement like per kilogram, per piece, per metre, etc. a complex unit uses a combination of two simple units like per kilowatt-hour, per tonne-kilometre, etc.

Advantages and Disadvantages of Cost Unit

Advantages of using cost units:

1. Cost units allow for easy comparison of costs between different products or services.
2. They can also be used to determine the cost of producing a specific quantity of a product or service.
3. Cost units can be used to identify areas where costs can be reduced.
4. They can also be used to determine the price at which a product or service should be sold to make a profit.
5. Cost units can be used to help make budgeting and forecasting decisions.
6. They can also be used to track and measure performance against budgeted costs.
7. Cost units can be used in cost-benefit analysis to determine the profitability of a project or investment.
8. They can also be used to compare the efficiency of different production methods or processes.

Disadvantages of using cost units:

1. The cost of producing a product or service can be affected by many variables, and cost units may not take all of these into account.
2. They may not accurately reflect the true cost of a product or service, especially if the cost of certain inputs is not included.
3. Cost units may not be applicable to certain types of products or services that cannot be easily quantified.
4. They can be time-consuming and costly to calculate and maintain.
5. Cost units can be affected by inflation and other external factors, which can make them less accurate over time.
6. They may not be applicable in some industries or business models.
7. Cost units may not be useful in evaluating the performance of a company as a whole.

8. They may not be able to capture all the intangible aspects of a product or service that can affect its value.

Key differences between Cost Centre and Cost Unit

Purpose: A cost center is used to track and measure the expenses incurred by a specific department or function within a business, whereas a cost unit is used to track and measure the expenses incurred to produce a specific product or service.

Responsibility: Cost centers are typically managed by department managers, whereas cost units are managed by product or service managers.

Level of detail: Cost centers provide a general overview of expenses, whereas cost units provide a more detailed breakdown of expenses.

Allocation of expenses: Expenses incurred by a cost center are typically allocated to the overall business, whereas expenses incurred by a cost unit are allocated specifically to that product or service.

Budgeting: Cost centers typically have budgets that are set at the department level, whereas cost units typically have budgets that are set at the product or service level.

Reporting: Reports for cost centers generally focus on expenses and how they compare to budget, whereas reports for cost units generally focus on the cost of goods sold and how it compares to revenue.

Flexibility: Cost centers are generally less flexible than cost units, as they are typically fixed and cannot be easily changed or reallocated. Cost units, on the other hand, can be adjusted or reallocated as needed to reflect changes in the production or sales of a product or service.

Introduction to overhead allocation, overhead apportionment and overhead absorption

Allocation of overhead
The process of charging such items of overhead to a particular department or cost centre is known as allocation of overhead. Allocation of overheads means charging all the amount of cost to a particular department or cost centre.It helps to make proper judgment for measurement of departmental efficiency. Allocation of overhead can be made only when the amount of overhead incurred by a particular department or cost centre is known. Therefore, allocation of overheads means charging all the amount of cost to a particular department or cost centre. For example repairs and maintenance for a machine should be charged or allocated to that department where the machine is installed.

Importance of Overhead Allocation

Allocation of overhead is important for the following reasons:

1. It helps to determine the product cost.
2. It helps to fix the price of a product.
3. It helps to measure the effectiveness of a particular department or cost centre.
4. It helps to supply the cost information to the management.

5. It helps to evaluate the profitability of a product line in multi-product business.
6. It helps to make a proper judgment for measurement of departmental efficiency.
7. It helps to provide cost information for planning, controlling and managerial decision making.
8. It helps to make accurate pricing for the competitive market.
9. It can be used to control wastage and defective.

Apportionment of Overhead

Cost Apportionment is the allotment of proportions of items to cost centers. When items of cost can not directly charge to or accurately identifiable with any cost centres, they are prorated or distributed amongst the cost centres on some predetermined basis. This method is known as cost apportionment. Wherever possible, the overheads are to be allocated. However, if it is not possible to charge the overheads to a particular cost centre or cost unit, they are to be apportioned to various departments on some suitable basis. This process is called as 'Apportionment' of overheads. Items of indirect costs residual to the process of cost allocation are covered by cost apportionment. The predetermination of suitable basis of apportionment is very important and usually following principles are adopted

1. Service or use
2. Survey method
3. Ability to bear.

Steps to Apportion Overhead Costs

1. To Classify the Cost Centers _ Cost Centers should be classified into production department and service department.
2. To Divide Total Overhead on Different Basis of Apportionment
   • One of best step to apportion overhead costs is to know the basis of apportionment of overhead expenses and then to use them.
   • All overhead will be allocated to the different department.

Example

Total rent is Rs. 5000.
Area of production department is
A 100 Sq. foot.
B 200 Sq. foot.
C 700 Sq. foot.

Now total ratio of A : B : C is 1 : 2 : 7

Total Rent Expense of
A Department will be = 5000 X 1 /10 = Rs. 500
B Department will be = 5000 X 2 / 10 = Rs. 1000
C Department will be = 5000 X 7 / 10 = Rs. 3500

So, Total overhead cost will be apportioned to different department on some basis. Basis of Rent apportionment is the area of department

Distinction between Allocation & Apportionment

1. Although the purpose of both allocation and apportionment is identical, i.e to identify or allot the costs to the cost centres or cost unit, both are not the same. Allocation deals with the whole items of cost and apportionment deals with proportion of items of cost.
2. Allocation is direct process of departmentalization of overheads, where as apportionment needs a suitable basis for sub-division of the cost.
3. Whether a particular item of expense can be allocated or apportioned does not depends on the nature of expense, but depends on the relation with the cost centre or cost unit to which it is to be charged.

Principles of Apportionment of Overhead Cost

1. **Service rendered-** A production department which receives maximum services from service departments should be charged with the largest share of the overheads. Accordingly, the overheads of service departments are charged to the production departments.
2. **Ability to pay -** A large share of service department's overhead costs should be assigned to those producing departments whose product contributes the most to the income of the business firm. However the practical difficulty in this method is that, it is difficult to decide the most paying department and hence difficult to operate.
3. **Survey method -** This method is used where a suitable base is difficult to find or it would be too costly to select a method which is considered suitable.For example, the postage cost could be apportioned on a survey of postage used during a year.
4. **Efficiency Method_** The apportionment of expenses is made on the basis of production targets.If the target is exceeded, the unit cost reduces indicating a more than average efficiency.If the target is not achieved, the unit cost goes up, disclosing there by, the inefficiency of the department.

Cost Absorption

The ultimate aim of Overhead Accounting is to absorb them in the product units produced by the firm. Thus, the indirect costs or overhead will have to be distributed over the final products so that the charge is complete.This process is known as cost absorption or 'Absorption' of overheads. It means costs is absorbed by the production (or product units) during the period or charging each unit of a product with an equitable share of overhead expenses.

Accurate absorption will help in arriving at accurate cost of production.Overheads are indirect costs and hence there are numerous difficulties in charging the overheads to the product units.The basis should be selected after careful maximum accuracy of Cost Distribution to various production units.The basis should be reviewed periodically and corrective action whatever needed should be taken for improving upon the accuracy of the absorption.

Under-absorption and Over absorption of Overhead

1. **Under-absorption** --If the amount absorbed is less than the amount incurred , the difference denotes underabsorption.It is also termed as 'under recovery'.It may be due to – Actual expenses exceeding the estimate; and / or – Output or the hours worked may be less than the estimate

2. **Over-absorption--** If the amount absorbed is more than the expenditure incurred this would indicate over-absorption, which goes to inflate the costs. Over-absorption is also formed as 'over recovery'. It may be due to – Expense being less than estimate; and / or – Output or hours worked may be exceeding the estimate

Usually any of the following methods are adopted for cost absorption

Direct Material Cost Method= Actual Overhead Cost / Direct Material Cost X 100

Direct Labour Cost Method=Actual Overhead Cost / Direct Labour Cost X 100

Prime Cost Method=Budgeted Overhead Expenses / Anticipated Prime Cost

Direct Labour Hour Method= Overhead Cost / Direct labour Hours

Rate Per Unit of Production Method= Budgeted Overhead Cost / Budgeted Units of Production

Sales Price Method=Budgeted Overhead Expenses / Sales of Units of Production

Machine Hour Rate Method=Total Overhead Cost / Total Machine Hours

Allocation and apportionment of overheads and then absorption of overheads helps for finding total cost of production for better decision making for cost control and cost reduction.