

2. Cost Concept and Fundamentals of Cost Accounting
- 2.1 Cost Terminology: manufacturing cost and Non-Manufacturing
- 2.2 Cost for Business Decisions: Differential cost and Revenue, opportunity cost, sunk cost and marginal cost.

Cost

- Any type of expenditure to be paid for any commodity
- The amount of money paid for a thing
- Major resource of any project
- It is considered as the money.

Types of cost / cost terminology

1) Sunk cost

- Past cost that cannot be recovered
- It is also called the historical cost.
- It has no relevance in the decision making process in future.
- for eg: cost of registration, license, decoration, depreciation, repair & maintenance etc.

2) Direct cost

- cost directly linked to the project work
 - Measure: Track materials, labor, tool used only for project
- Eg: RS 50,000 for steel used in bridge construction

3. Indirect cost

Shared cost not tied to one task

Measure: Allocate portion of electricity, admin salary, office rent

Eg: Rs 10,000 per month for office overhead used by all project.

4. Average cost

Total cost divided by number of units

Measure:

Average cost = Total cost / Number of units produced.

Eg: Rs 5,00,000 for 1000 units \rightarrow Rs 500 per unit

5. Variable cost

Change with output

Measure: Track material, fuel, extra labor per unit or batch.

Eg: Rs 100 per extra concrete block used.

Cost per unit \times no. of units produced

6) Opportunity cost

- The cost of best rejected opportunity to earn more profit.
- It is hidden or expected cost but important for business purpose
- Benefit cost by choosing one option over another.

Measure: Compare the profit or value of best alternative not chosen.

Eg: You are an engineer with two project option.

Project A : Profit = Rs 1,00,000

Project B : Profit = Rs 1,50,000

You choose Project B

Opportunity cost = Profit from best alternative not chosen

$$= 150000 \text{ (Project B)} - Rs 100000 \text{ (Project A)}$$
$$= Rs 50,000$$

7. Life cycle cost

Life cycle cost is the sum of all expenditures associated with the item/project during its entire service life.

3 components:

1) First cost (initial investment, capital cost)

Initial investment (land, building, basic machine, installation, purchase or construction cost)

Include

- Design & engineering - purchase price
- Installation & setup - Transportation & Taxes.

Eg: Buying a machine for Rs 5,00,000 including setup & delivery.

2. Operating & Maintenance (O&M) cost

The cost to run and maintain the product over its useful life

- wages / salaries of labor & staff
- cost of raw materials
- overhead cost
- Repair and spare part
- Regular servicing,

e.g.: Rs 3,00,000 per year for power & Rs 1000 for servicing

(3) Disposal or End of life cost

The cost (or income) when the product is no longer useful

- waste removal or recycling

- Environmental fees

- Transportation cost

- Recycling fee

- Paying to remove old machinery.

Eg: Paying Rs 20,000 to remove old equipment or earning
Rs 5,000 from scrap (waste materials)

8 Marginal Cost (MC)

It is the total change in total cost due to the increase in output by single unit.

$$MC = \frac{\Delta TC}{\Delta Q}$$

= change in total cost

change in cost due to one more output

Marginal Revenue (MR)

- It is the change in the total revenue due to one extra unit of quantity sold.

- It is the additional made to the total revenue when one more unit of output is sold.

$$MR = \frac{\Delta TR}{\Delta Q} = \frac{\text{Change in total revenue}}{\text{Change in output produced.}}$$

Differential cost & differential revenue:

- A difference in cost between any two or more alternatives is called the differential cost.
- It is also called the incremental cost.
- If a difference in revenue between any two or more alternatives is known as the differential revenue.

Decision criteria

- if revenue > cost i.e. accepted
- if revenue < cost is rejected.

Imp Manufacturing cost & Non-manufacturing cost.

All the cost that are associated with the process of manufacturing are called manufacturing cost.

- These are the cost that are directly related to making a product.

Direct materials

Raw materials that become part of the final product for a chair this include direct wood, nails & glue.

Direct labour

Wages paid to workers who physically make the product

Eg carpenters or machine operators

Diff Factory overhead (Indirect Manufacturing cost)

All other cost in the factory that can't be directly traced to a product but are necessary such as

- Factory rent - Utilities (electricity, water)
- Depreciation of machines
- Maintenance cost
- Factory supplies.

Non-Manufacturing cost:

All the cost that are not associated with the process of manufacturing are called non-manufacturing cost.

- Selling expenses
cost to promote and sell the product
 - * Advertising
 - * Sales commissions
 - * Shipping and delivery expenses
 - * Store rent or sales office expenses.

Administrative expenses:

General business expenses not tied to production or sales

- Salaries of managers and office staff

- Office supplies

- Legal & accounting fees

- Utilities and rent for office building

consist

- Administrative cost

- General management cost

- Advertising cost

- Transportation cost

- Marketing cost

etc.

Research & development cost

Cost accounting

- Recording of all the cost only as per the account norms and standards.
- It is the process of classifying, recording and appropriate allocation of all the expenditure.

Why cost accounting?

- To fix the price of the product
- To prepare the detail profit and expenditure account
- To pay the income tax.
- To assure the shareholders
- To plan for future

Methods of cost accounting

(1) Job costing

- specific Job costing of different jobs

Eg: Printing Press

(2) Process costing

- Routine work
- Continuous process of production process

Eg: Wai-wai company.

Prime cost

It is the direct cost of manufacturing of cost. It include cost that are directly related to production, like raw materials & direct labor.

$$\text{Prime cost} = \text{Direct material} + \text{Direct labor}$$

Eg:

You are making noodles.

Flour (direct material) : Rs 500

Labor cost (wages to worker directly making noodles) : Rs 300

$$\text{Prime cost} = \text{Rs } 500 + \text{Rs } 300 = \text{Rs } 800$$

Overhead cost

It refers to indirect cost that support production but are not directly linked to a specific product.

Type

Factory overhead (machine maintenance, electricity)

Office " (eg admin salaries)

Selling overhead (eg advertising)

Eg:

In the same noodle factory

Electricity Rs 100

Supervisor's salary: Rs 200

Rent: Rs 300

$$\text{Overhead cost} = \text{Rs } 100 + \text{Rs } 200 + \text{Rs } 300$$

$$= \text{Rs } 600$$

Shortnote

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Depreciation by sunk cost

It means calculating depreciation based on the original (sunk) cost of an asset not its current market value or resale value.

- Sunk cost = The initial cost already spent and cannot be recovered
- Depreciation is charged on this sunk cost over the asset's useful life.

Eg:

A machine is bought for Rs 1,00,000 (sunk cost) with a 10 year life.

$$\text{Depreciation} = \text{Rs } 1,00,000 \div 10$$

$$= \text{Rs } 10,000 \text{ per year}$$

Even if the market value changes, depreciation remains based on Rs 1,00,000

Sunk cost depreciation ignores future resale or scrap value.

Numerical Example

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Following are the cost for the production of 100 badminton racquets.

Labor rate: Rs 40/hr

Leather: 50 meter @ Rs 200/meter

Gut: 300 meter @ Rs 50/meter

Graphite: 100kg @ Rs 200/kg

Total labour hours needed: 200 hours

Total annual factory overhead: Rs 50,000/1000

Total annual direct labour hours: 250,000 hours

Break down the cost into components of prime cost & overhead cost and find out the manufacturing cost of each racquet.

Rs 1^2

Direct cost = Rs 40×200 hours = Rs 8000

Direct leather cost = Rs 200×50 meter = Rs 10,000

Gut cost = Rs 50×300 meter = Rs 15,000

Graphite cost = Rs 200×100 kg = Rs 20,000

Total prime cost = Rs 53,000

For the overhead cost

Factory overhead cost:

Factory overhead per hour cost = $\frac{\text{Total factory annual overhead cost}}{\text{Total annual direct labor hours}}$

$$= \frac{500000}{250000}$$

250000

= Rs 20/hr

Total overhead cost = Factory overhead per hr cost \times Total labour hrs needed
= Rs 20×200 hrs = Rs 4,000

Total cost = Total prime cost + Total overhead cost

$$= \text{Rs } 53000 + \text{Rs } 4000$$

$$= \text{Rs } 57000$$

Manufacturing cost of each racquet = Total cost

Total production unit

$$= \frac{\text{Rs } 57000}{100}$$

$$= \text{Rs } 570/\text{racquet}$$

Eg 2

Suppose that for a future period the overhead cost is expected to be total \$ 1,00,000 and total direct labour cost is expected to be \$ 50,000. If for a unit of product the direct labour cost is expected to be \$ 60 calculate overhead rate per dollar of direct labour cost & overhead cost per unit of product

Soln

Given, Total overhead cost = \$ 100,000

Total direct labour cost = \$ 50,000

Direct labour cost/unit = \$ 60

Hence overhead rate = Total Overhead cost

Total direct labour cost

$$= \frac{\$ 100000}{\$ 50000}$$

$$= \$ 2$$

direct labour cost

If overhead cost/unit = Overhead rate \times Direct labour cost/unit

$$= \$ 2 \times \$ 60 = \$ 120$$