

Classification of Costs

Introduction

It is key to identify the cost structure of an organization including its diversities in order to place suitable controls. Some of the major classification of costs coupled with their nature/behaviour will be discussed in detail.

Key terms:

- ❑ **Cost** : is a monetary measure of the resources sacrificed to achieve a specific objective such as manufacturing or acquiring a product/service.
- ❑ **Cost objects/Cost units** : any activity or thing for which a separate measurement of cost is required. Cost of “something”.
- ❑ **Responsibility centre** : an organizational unit/section headed by a manager who is responsible for the activities of that unit/section.
- ❑ **Cost centre** : department/unit for which cost is ascertained before attributing to a specific cost unit/object.

Classification of Costs

Classification of cost is essential in order to achieve different kinds of objectives such as valuation of inventory, determining total costs, determining price of product/service, costs control.

1. Classification for inventory valuation/profit measurement

Direct & Indirect cost

- ❑ **Direct** : cost that can be specifically & exclusively identified with a specific cost object/unit in an effective manner. (DM/DL/DE)
- ❑ **Indirect/Overhead** : costs that cannot be specifically & exclusively identified with a specific cost object/unit in an effective manner. (IDM/IDL/IDE)

Manufacturing & Non-manufacturing cost

- ❑ **Manufacturing** : total costs incurred at the event of manufacturing a product/service. (DM/DL/DE & MNF OHs)
- ❑ **Non-manufacturing** : total costs incurred other than manufacturing of a product/service. (ADMN/MKT/HR)

Classification of Costs (contd.)

Product & Period cost

- ❑ **Product** : cost that are identified with goods purchased or produced for resale. This includes in inventory valuation. (all MNF costs)
- ❑ **Period** : costs which are attached to a specific period. These are not included in inventory valuation. (charged to P&L) (all NMNF costs)

Job & Process cost

- ❑ **Job** : total costs incurred/attached to a specific job. Cost of each job will be calculated separately.
- ❑ **Process** : total costs incurred/attached to a manufacturing process. Total cost of several job will be calculated.

Important :

DM+DL+DE - Prime costs

Prime costs+ MNF OHs - Total manufacturing costs

Classification of Costs (contd.)

2. Classification for decision making

Fixed/ Variable/ Step/ Semi Variable cost

- ❑ **Fixed** : costs that remains constant over wide range of activity for a specific time period. Costs will not change in line with volume.
- ❑ **Variable** : costs that vary in direct proportion to the level of activity/volume.
- ❑ **Step** : costs that vary in equal fixed levels when production increase.
- ❑ **Semi variable** : costs that consist of both variable & fixed component.

Exercise : line graphs – per unit/total cost for each category.

Relevant & Irrelevant cost

- ❑ **Relevant** : costs which can be changed by a decision. Cost that differ among alternative courses of action.
- ❑ **Irrelevant** : cost that do not differ among alternative courses of action. Common to all courses of action not to specific one.

Classification of Costs (contd.)

Sunk cost

- ❑ **Sunk cost** : cost that have already been incurred. These costs do not differ among alternative courses of action. Since already been made, will not change by any decision that will be made in the future. These are in fact irrelevant cost.

Opportunity cost

- ❑ **Opportunity cost** : when evaluating alternative courses of action, the expected benefits of next best option/opportunity that is lost/forgone in order to select the best course of action.

Marginal cost

- ❑ **Marginal cost** : the additional costs of one extra unit of output. This is almost a variable cost.

Classification of Costs (contd.)

3. Classification for control

Controllable & Uncontrollable cost

- ❑ **Controllable** : cost that are reasonably subject to regulation by the manager and he/she can influenced on cost.
- ❑ **Uncontrollable** : cost that are not reasonably subject to regulation made by the manager and he/she cannot influenced on cost.

Discussion:

Arguably, almost all costs will be controllable since key management can control any cost being considered (still there are kinds of payments which should be treated as statutory/mandatory and as such not controllable). Hence, we basically refer the line manager who is responsible for cost centres.

Marginal Costing Vs. Absorption Costing

Imagine! Importance of determining suitable price of the particular product/service. Failing to determine suitable price of the product/service causes many short term/long term problems. In order to determine the suitable price, it is essential to determine the total cost of the respective product/service accurately.

Marginal costing and **absorption costing** are two different principles which are widely used in order to determine total cost of the respective product/service.

It is also crucial to determine the level of production at which entity neither gain profit nor experience loss. This leads to determine the margin of safety too. Analysis of CVP coupled with BEP helps in this aspect.

Marginal Costing

Element of total cost change when total production increase or decrease by one unit. MC shows clear positive co-relationship with number of units of production.

Some argue that MC is almost TVC. This quite true since MC shows positive co-relationship with production units.

$$MC = VC$$

$$VC = VPC + VADMN + VSDB$$

$$VPC = DM + DL + DOE + VOHs$$

MC – Marginal Cost

VC – Variable Cost

VPC – Variable Production Cost

VADMN – Variable Administration Cost/Overheads

ASDB – Variable Selling & Distribution Cost/Overheads

DOE – Direct Other Expenses

VOHs – Variable Overheads

Marginal Costing (contd.)

Contribution

Contribution is one of the basic concept in marginal costing and it is crucial for any entity to calculate its CPU and TC when undertake production of goods/services.

Contribution is an amount derived eliminating variable cost of the product/service from its sales price.

$$\text{CPU} = (\text{SP} - \text{VC}) \text{ per unit}$$

$$\text{TC} = (\text{TSV} - \text{TVC})$$

$$\text{TC} = \text{CPU} \times \text{total sales volume}$$

$$\text{TC} = \text{TFC} \pm \text{profit or loss}$$

$$\text{TC} = \text{Total sales revenue} \times \text{profit volume ratio}$$

$$\text{Total profit} = \text{TC} - \text{TFC}$$

Absorption Costing

Absorption costing is the mechanism of absorbing fixed overheads of the manufacturing process to a particular product/service using pre-determined system/rate.

It is an absorption costing use in financial accounting to prepare manufacturing/profit & loss statement.

Key application rule in AC;

- ❑ No classification of total cost into fixed and variable. Total cost will be apportioned among all cost units. Hence, total cost will be categorized into manufacturing and non-manufacturing only.
- ❑ Closing stock will be valued based on total cost in which fixed cost will be apportioned among cost unit based on pre-determined rate.

CVP & BEP

CVP – Cost Volume Profit analysis : analysis of total cost and profitability separately at different levels of production.

Profit volume/contribution to sales:

CPU/SPU or Total Contribution/ Total Sales

BEP – Break Even Point analysis : analysis which determines the level of production where entity neither generate profit nor experience any losses.

At BEP; total revenue = total costs and total contribution = total fixed costs

How to calculate BEP?

1. Mathematical approach
2. Graphical approach

Mathematical approach:

calculating BEP using mathematical formulae when entity produce only one product.

$$\text{BEP (in units)} = \text{TFC}/\text{CPU}$$

$$\text{BEP (LKR)} = \text{BEP in units} \times \text{SPU}$$

or

$$\text{BEP (LKR)} = \text{TFC}/\text{CS ratio}$$

$$\text{BEP with desired profit (units)} = \text{TFC} + \text{desired profit (DP)}/\text{CPU}$$

$$\text{BEP with desired profit (LKR)} = \text{BEP with DP in units} \times \text{SPU}$$

or

$$\text{BEP with desired profit (LKR)} = \text{TFC} + \text{desired profit}/\text{CS ratio}$$

Discussion:

Graphical approach

The concept of Margin of Safety

Strategic Short Term Decision Making

Key management personnel of most manufacturing entities' are taking useful short term specific decision by using data/information relating to costs structure.

Most of these decisions will be based on relevant cost. **Relevant cost** is the cost which specifically arise based on the decision of the management or any cost that will have to incur due to decision undertake by the management.

Relevant cost will be either one of the following two or both.

- ❑ **Incremental cost** : element of cost which will increase due to management decision. This mostly comprised VC while FC also can represent.
- ❑ **Opportunity cost** : value of the benefit forgone from next best option due to selection of best available option.

Relevant Vs. Irrelevant Cost

Following will be treated as non-relevant cost in the event of short term specific decision making.

- ❑ **Sunk cost** : already incurred. Will not change based on the decision.
- ❑ **Committed cost** : already committed to pay in the future based on past decision. More close to sunk costs.
- ❑ **Notional cost** : not a real cost. Instead it will indicate the cost of using resources in the business based on GAAP/LKASs.
- ❑ **Absorbed fixed overheads** : fixed overheads which have already agreed to absorb based on pre determined rates. If the particular product/service not undertake, this costs will anyway charge to something else.

Types of Short Term Decisions

By considering above relevant costs and qualitative factors, key management will take following short term decisions.

- ❑ Analysis of limiting factors and determined best sales mix
- ❑ Make or buy decision
- ❑ Accept or reject (orders) decision
- ❑ Shutdown the product/process/factory or not decision
- ❑ Working an extra shift or not decision

Qualitative Factors in Decision Making

- Availability of cash
- Key macro economic factors
- Legal constraints
- Current market position
- Pressure from the employees
- Competition in the market
- Power of the suppliers
- Reaction of the key customers
- Behaviour of the shareholders & other stakeholders
- Threat to the overall goodwill

Exercises

1. Production details of ABC & Co. Ltd. as follows;

| No. of units | Total cost (LKR) |
|--------------|------------------|
| 2000 | 20,000 |
| 2400 | 22,000 |
| 2800 | 24,000 |
| 3000 | 25,000 |
| 3600 | 28,000 |
| 4000 | 30,000 |

- a. Calculate the VC per unit & TFC
- b. Calculate the total cost at the level of 3750 units
- c. If FC & VC/PU increased by 20% & 10% respectively, calculate the total cost at the level of 4800 units.

2. Details pertaining to production of “X” is as follows;

Per unit

DM - 100 LKR

DL - 60 LKR

DE - 40 LKR

Total production overheads is 20% on prime cost while administration overheads and marketing overheads are 15% and 10% on production cost respectively.

Calculate the total cost of X for 4000 units.

3. Present following data in graphical manner

| No. of units | TVC | TFC |
|--------------|--------|--------|
| 0 | 0 | 10,000 |
| 1000 | 4000 | 10,000 |
| 2000 | 8000 | 10,000 |
| 3000 | 12,000 | 10,000 |
| 4000 | 16,000 | 10,000 |
| 5000 | 20,000 | 10,000 |

4. Price of a product “X” is LKR 50/- and variable cost of LKR 30 will be incurred to produce this by the company. Total 1,000 units will be sold in April/2013.

Calculate profit volume ratio.

5. Production/cost details of one unit of “Y” is as follows; (LKR)
DM - 40, DL- 32, VOHs - 18, FOHs - 10, total is 100
SPU - 150
Next year, cost of DM and DL will be increased by 10% and 25% respectively. VOHs will also increase in line with DL. No changes in FC.

Calculate;

- a. current year profit volume ratio.
- b. determine the SPU in next year to earn same profit volume ratio as in current.

6. VC per unit in LKR of “X” & “Y” will be as follows;

| | X | Y |
|---------------------|----|----|
| DM | 20 | 30 |
| DL (LKR 5 Per hour) | 10 | 15 |
| VOHs | 20 | 25 |

SPU of X & Y are LKR 80 and LKR 100 respectively. Total labour hours are limited to 18,000. Expected sales of X & Y are 3,000 units and 5,000 units respectively.

- a. Determine the profit maximization sales mix
- b. Calculate the profit/loss if fixed cost is LKR 110,000 based on above sales mix
- c. If company can get additional labour, calculate the maximum rate per hour