ACCOUNTING FOR MANAGERIAL DECISION

Unit -1 INTRODUCTION

Introduction:

According to "Peter Drucker whatever a manager does he does through decision making.

In simple words decision making is the process of choosing the best course of action from amongst several alternatives available.

Decision making is only the way by which the managers at different levels in the organizations perform their basic managerial functions of planning, organizing, staffing, coordinating, controlling and decision making.

Types of decisions:

Programmed decisions: programmed decisions in management are concerned with the relatively routine problems. These decisions are taken in the regular course of any business operations and occur at a day to day frequency. These decisions are repetitive and structured in nature. They are small and have a low scope of impact. The information related to these types of decisions is readily available and can be processed in pre-determined manner.

Example: problems related to leave are solved by leave rules.

Non-Programmed decisions: The non-programmed decisions in management are concerned with unique or unusual problems they are encountered in a very non-frequent manner. These decisions are unstructured and non-recurring in nature. Such decisions are relatively complex and have a long-term impact. Information regarding these problems is not easily available.

Example: deciding whether to acquire another organization, deciding which global market offer the most potential or deciding whether to sell off an unprofitable vision.

Steps in decision making process:

1. **Clarify the decision problem**: The first step in making the right decisions is recognizing the problem or opportunity and deciding to address it. The managers should consider the critical and strategic factors in defining the problem in fact these factors are obstacles in the way of finding proper solution. These are also known as limiting factor.

Example: if a machine stops working due to non-availability of screw then screw is the limiting factor.

2. Specify the criterion: Once a problem has been clarified, the manager should specify the criterion upon which a decision will be made. Is the objective is to maximize profit, increase market share, minimize cost or improve public service? Sometimes the objectives are in conflict, as in a decision problem where the production cost is to be minimized.

3. Identify the alternatives: A decision involves selecting between two or more alternative. If a machine breaks down, what are the alternative courses of action? The machine can be repaired or replaced, or replacement can be leased. Determining the possible alternatives is a critical step in the decision process.

4. Develop a Decision model: A decision model is the simplified representation of the choice problem. Unnecessary details are stripped away, and the most important elements of the problem are highlighted. Thus, the decision model brings together the elements listed above: Criterion, constraints and the alternatives.

5. Collect the data: Although the managerial accountant often involved in the step 4, he or she is chiefly responsible for step 5. Selecting data pertinent to decisions is one of the managerial accountant's most important roles in an organization.

6. Selecting an alternative: Once the decision model is formulated and the pertinent data are collected; the appropriate manager has to select the best alternative. It's not an easy task.

7. Implementation of the decision: Under this step the manager has to put the selected decision into action. For the proper and effective execution of the decision, three things are very important:

- Proper and effective communication of decisions to the subordinates. Decisions should be communicated in clear & understandable manner.
- Acceptance of decision by subordinates is important. Group participation and involvement of the employees will facilitate the smooth execution of decisions.
- Correct timing in the execution of decisions minimizes the resistance to change. All most every decision introduces a change and people are hesitant to accept change. Implementation of the decision at the proper time plays an important role in the execution of the decisions.

8. Follow up: A follow up system ensures the achievement of the objectives. It is considered with the process of checking the proper implementation of decision. Follow up is indispensable (absolute necessary) so as to modify and improve upon the decisions at the earliest opportunity.

9. Monitoring and feedback: Feedback provides the means of determining the effectiveness of the implemented decisions. If possible a mechanism should be built which would give periodic reports on the success of implementation. In addition the

mechanism should also serve as an instrument of “prevention maintenance”. So that the problem can be prevented before they occur. “According to

Peter Drucker” The monitoring system should be such that the manager can go and look for himself for the first hand information, which is always better than the written reports or other second hand information.

Database for decision making:

Database is the collection of information that is organized so that it can Database for decision making:

Database is the collection of information that is organized so that it can be easily accessed, managed and updated. Data and database technology has a major impact on the growing use of computer. It is fair to say that database plays a critical role in almost all area where computers are used including business, electronic commerce, education, library and science etc....Database is required to solve unstructured and semi-structured problems.

Example: a) to collect data about stock/ inventory.

b) Comparative sales figure between one period and the next.

c) Product revenue figures based on the product sales assumptions.

Cost-based decision making:

The following cost concepts which helps in decision-making activity:

1. Opportunity Cost: Opportunity cost is the cost of opportunity lost. An opportunity cost is the benefit given up or sacrificed when one alternative is chosen over another. It is the income foregone by selecting another alternative. An opportunity cost is the net cash inflow that could be obtained if there sources committed to one action were used in the most desirable other alternative. Opportunity costs are not incorporated into formal financial accounting records. Why? Because historical record keeping is limited to transactions involving alternatives that were actually selected, rather than alternatives that was rejected. Rejected alternatives do not produce transactions and so they are not recorded.MarketValues, Profit Sacrificed: Opportunity costs are often market values. Alternatively, they are measured by the profit that would have been earned had resources been used for the other purpose.

2. Relevant Cost: Relevant costs are those future cost which differ between alternatives. Relevant costs may also be defined as the costs which are affected and changed by a decision. If a cost increases, decreases, appears or disappears as different alternatives are compared, it is a relevant cost. On the contrary, irrelevant costs are those costs which remain the same and not affected by the decision whatever alternative is chosen. Irrelevant costs do not mean that such costs are

forgotten or that such costs need not be evaluated. It simply means that irrelevant cost is not one of the factors that will quantitatively affect the decision. Relevant costs have the following two features:

(i) Future Costs: Relevant costs are only future costs, i.e., those costs which are expected to be incurred in future. Relevant costs, therefore, are not historic (sunk) costs which have already been incurred and cannot be changed by a decision.

(ii) Incremental or Avoidable Costs: Relevant costs are only incremental (additional) or avoidable costs. Incremental costs refer to an increase in cost between two alternatives. Avoidable costs are those which are not incurred from one alternative to another.

3. Differential Cost: Differential cost is the difference in total costs between any two alternatives. Differential costs are equal to the additional variable expenses incurred in respect of the additional output, plus the increase in fixed costs, if any. This means that differential cost is only the difference n the amount of the two costs. This cost may be calculated by taking the total cost of production without the additional contemplated output and comparing it with the total costs incurred if the extra output is undertaken.

4. Incremental and Decrement Cost: Differential costs are also known as incremental costs, although technically an incremental cost should refer only to an increase in cost from one alternative to another; decrease in cost should be referred to as decrement cost. Differential cost is a broader term, encompassing both cost increases (incremental costs) and cost decreases (decremental costs) between alternatives. The concept of differential costing is vital in planning and decision-making. It is an important tool in evaluating the profitability of alternative choice decisions and helping management in choosing the best alternative. The differential cost analysis can assist management in knowing the additional profit that would be earned if idle or unused capacity is used for extra production or if some additional investments are made by the firm.

5. Sunk Cost: Sunk costs are past payments for resources that cannot be changed by any current or future decision. A sunk cost is the cost that has already been incurred. It is a past or committed cost, cost gone forever. Sunk costs (past costs) are costs that have been created by a decision in the past and cannot be changed once they have been incurred and cannot be avoided (changed) by any decision that is made in the future.

6. Imputed Cost: Imputed costs are costs not actually incurred in some transaction but which are relevant to the decision as they pertain to a particular situation. These costs do not enter into traditional accounting systems. But they being related with economic reality help in making better decisions. Interest on internally generated funds, rental value of company-owned property and salaries of owners of a single proprietorship or partnership are some examples of imputed costs. Costs paid or incurred are not imputed costs

7. Out-of-Pocket Cost: While imputed costs do not involve cash outlays, out-of-pocket costs signify the cash cost associated with an activity. Non-cash costs such

as depreciation are not included in out-of-pocket costs. This cost concept is significant for management in deciding whether or not a particular project will at least return the cash expenditures associated with the project selected by management.

8. **Fixed, Variable and Mixed Costs:** Fixed, Variable and Mixed Costs have been explained in the preceding sections.

9. **Direct Cost and Indirect Cost**: Direct cost and indirect cost have been explained in the preceding sections.

10. **Shut Down Cost**: Shut down costs are those costs which have to be incurred under all situations in the case of stopping manufacture of a product or closing down a department or division. Shut down costs are always fixed costs.
****

COST BEHAVIOUR & PROFIT ANALYSIS

Meaning:

Marginal costing is ascertainment of marginal cost and effect on profit due to changes in volume or type of output by differentiating fixed cost and variable cost.

Marginal cost is the additional cost of producing an additional unit of product. It is the total of all variable cost. It is composed of all direct and variable overhead

Definition:

Marginal costing is **defined by CIMA London as** 'The accounting system in which variable costs are charged to cost units and fixed costs of the period are written off in full, against the aggregate contribution. Its special value is in decision making'.
Product cost and period cost: Product costs are those costs which become a part of production cost. Such costs are also included in inventory valuation. Period costs, on the other hand, are those cost which are not associated with production. Such costs are treated as an expense of the period in which these are incurred.

These do not form part of cost of products or inventory. These are directly transferred to profit and loss Account of the period.

Characteristics of marginal costing

Segregation of costs into fixed and variable elements: In marginal costing all costs are classified in fixed and variable. Semi-variable is also segregated into fixed and variable elements.

Marginal cost as Product cost: Only marginal (variable) costs are charged to product produced during the period.

Fixed cost as period cost: Fixed costs are treated as period costs and are charged to costing profit and loss account of the period in which they are incurred.

Valuation of inventory: The work-in-progress and finished stocks are valued at marginal cost only.

Contribution: Contribution is the difference between sales value and marginal cost of sales. The relative profitability of products or departments is based on study of 'contribution' made by each of the products or departments.

pricing: In marginal costing, prices are based on marginal cost plus contribution.

Marginal costing and profit: In marginal costing, profit is calculated by a two-stage approach. First of all, contribution is determined for each product or department. The contributions of various products or departments are pooled together and such a total of contributions from all products is called 'fund'. Then from this fund is deducted the total fixed cist to arrive at a profit or loss.

Differential cost: It refers to the difference in cost between various alternatives course of action. It means the changes in the cost due to changes in the method of production and scale of production (output level).

Changing cost due to increase in output is called incremental cost.

Changing cost due to decrease in output is called decremental cost.

Both incremental and decremental cost is called as differential cost. Management evaluates these differential cost with differential revenues to maximize the profit of business.

Similarities between differential cost and marginal cost:

- Both costs are used for the cost analysis.
- Both the techniques are used by the management in its process of decision making.
- Under both the techniques cost are classified into fixed and variable cost.

Dissimilarities between differential cost and marginal cost:

1. In marginal cost, PV Ratio, contribution, margin contribution per unit, limiting factor and so on are the parameters for evaluation of performance and decision making.
2. On the other hand in differential cost analysis, differential cost are compared with the differential revenue to select the best alternative in the process of decision making.
3. Marginal cost excludes all fixed cost from its analysis, whereas differential cost analysis includes all identifiable fixed cost.
4. Marginal cost may be incorporated into the system of accounting whereas differential costs are separately calculated as an aid to the management in decision making.

Basic equation of marginal costing:

Contribution = Sales Volume – Marginal Cost of Sales or Total Variable Cost

Total Variable Cost or Total Marginal Cost

= Sales Volume – Direct Cost + Direct Labour Cost + Direct Expenses+ Variable Overheads

Marginal Cost per Unit = Total Marginal Cost of Sales or Total Variable/No of units

Profit = Sales – Total Cost *

* Variable + Fixed cost

Contribution = Sales – Variable cost

Contribution = Fixed Cost + Profit

Sales – Variable Cost = Fixed Cost = Profit

PV Ratio =

Contribution

Sales 100

Break Even Point (BEP) in ₹ =

Fixed Cost

PV Ratio

BEP in Units =

Fixed Cost

Contribution Pre Unit

Estimated Sales =

Fixed Cost + Desired Profit

PV Ratio

Margin of Safety (M. S) = Total Sales – Break even Sales

Absorption costing: This is the total cost technique under which total cost (i.e., fixed cost as well as variable cost) is charged as production cost. In other words, absorption costing, all manufacturing costs are absorbed in the cost of the products produced. Absorption costing is a traditional approach and is also known as conventional costing or full costing.

Difference between absorption costing and marginal costing:

1. **Treatment of fixed and variable cost:** In marginal costing, only variable costs are charged to products. Fixed costs are treated as period costs and are charged to profit and loss account of the period.

In absorption costing, all costs (both fixed and variable) are charged to the product. The fixed factory overhead cost is absorption in units produced at a rate predetermined on the basis of normal capacity utilization (and not on the basis of actual production).

2. **Valuation of stock:** In marginal costing, stock of work-in-progress and finished goods are valued at marginal cost only. In absorption costing, stocks are valued at total cost which includes both fixed and variable cost. Thus stock values in marginal costs are lower than that in absorption costing.

3. **Measurement of profitability:** In marginal costing, relative profitability of products or departments is based on study of relative contribution made by respective products or departments. The managerial decisions are thus guided by contribution. In absorption costing, relative profitability is judged by profit a figure which is also a guiding factor for managerial decisions.

Practical Applications of marginal costing techniques useful in managerial decision making:

1. Key factor or limiting factor analysis.

2. In profit planning.

3. Optimizing product mix.

4. In contribution analysis.

5. For make or buy decisions.

6. In price fixation.

7. Discontinuance of product.

8. Diversification of product line.

9. Accept or reject special offer and sub-contracting.

10. Break- even analysis.

11. Cost-volume- profit analysis.

1. Key factor analysis:

Key factor is nothing but a limiting factor or deterring factor on sales volume, production, labour, materials and so on.

The limiting factor normally differs from one to another a key factor is that factor which puts a limit on production and profit of a business. Usually the limiting factor is sales. A concern may not be able to sell as much as it can produce.

But, sometimes a concern can sell all it produces but production is limited due to the shortage of materials, labour, plant capacity, or capital.

2. **Profit planning:** The behavioural study of costs in marginal costing technique helps the management in profit planning exercise. Constant development in science and technology makes the long-run situation more uncertain and highly unpredictable. Long-run consists of a series of short-runs and one must aim at maximizing contribution in each short-run which will lead to profit maximisation in the long-run. Profit figure is planned and activity level is determined to achieve that planned profit. It helps in doing sensitivity analysis by observing different cost and revenue situations and its resultant impact on profit and guides in the determination of activity level to achieve target profit.

3. **Optimizing Product Mix**: In case of multi products and multi lines of activity, the problem arises as to which product or sale mix will yield maximum profit. Such problems can be solved by marginal costing technique. It helps in discontinuance of non-profitable products and lines of activity which will not even cover its variable costs. In marginal costing technique, limiting factors will be considered for managerial decision making, which will limit the volume of output.

4. **Make or Buy decisions:** Make or buy decisions are best taken with full knowledge of the marginal or variable cost of making rather than buying a product. But it is also helpful to know through marginal costing what contribution to fixed costs will result from a 'make 'decision. Sometimes, in manufacturing companies, a problem may arise as to whether the component, sub assembly or products to be manufactured within the organization or to purchase from the market. This decision will be taken with the help of marginal costing technique under the following situations:

5. **Price Fixation:** Prevalence of multi product, multi process and multi market concerns make the absorption of fixed costs into product costs difficult. The

marginal cost approach to pricing decisions recognizes that decision-making is about choosing between competing alternatives, each with its own combination of income and costs. The relevant concepts to employ are therefore future incremental costs and revenues and opportunity costs, not lull costs, which include historical or sunk costs. The

. This technique is most useful in fixation of

- Where supply is in excess to the existing demand.
- Pricing of new products.
- Make or buy decisions.
- Where the installed capacity is more than operating level of production,- Public utility services.
- When cut-throat competition is prevailing in the market.
- Pricing for export products.

6. Discontinuance of Product: The marginal costing technique is used in taking decisions regarding Discontinuance of a product. If any product's performance is not impressive, then such product should be discontinued only if there is no contribution margin from that product. In other words, any contribution from that product will reduce the burden of total fixed costs of the firm and this will helping better profits than if such product is discontinued.

7. Diversification of Product Line: When a firm intended to introduce a new product into the market, the major consideration in taking such decision is to see whether that particular product is able to recover at least its variable cost and any contribution in excess of variable cost from such new product will improve the overall profitability of the firm. Here, the important point to remember is that all the present fixed costs of the firm are being borne by the existing products.

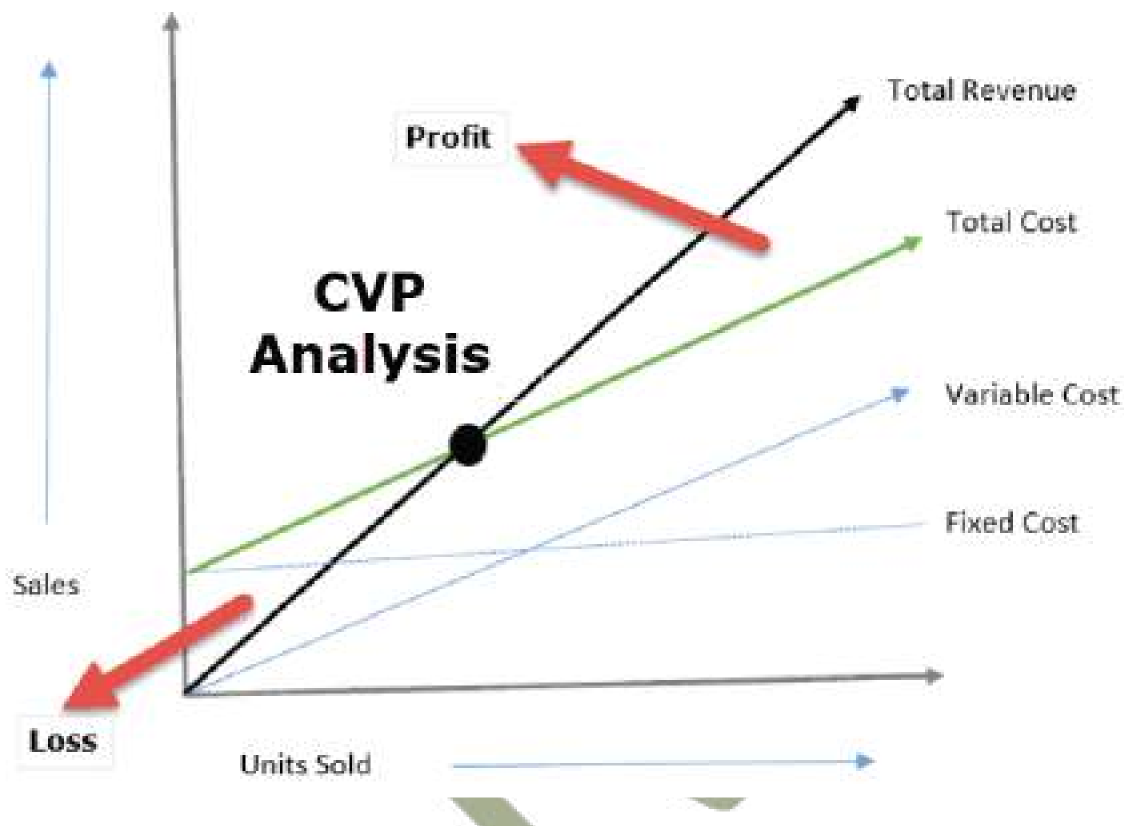
8. Accept or Reject New Order and sub-contracting: In times of taking decisions to accept or reject new order or in sub-contracting, the contribution analysis is made as to whether it is profitable to accept or reject new order or in sub-contracting. The following problems demonstrate the use of the contribution technique.

9. Break-even Analysis: Break-even analysis refers to ascertainment of level of operations where total revenue equals to total costs. It is an analysis used to determine the probable profit or loss at any level of operations. Break-even analysis in a method of studying the relationship among sales revenue, variable cost and fixed cost to determine the level of operation at which all the costs are equal to its sales revenue and it is the no profit no loss situation. This is an important technique used in profit planning and managerial decision making.

10. Profit-Volume Ratio: Profit-Volume ratio (P.V. ratio) reveals the rate of contribution per product as a percentage of turnovers. It indicates the relationship of contribution to turnover

Definition of Cost Volume Profit Analysis (CVP Analysis)

Cost Volume Profit Analysis (CVP) looks at the impact on the operating profit due to the varying levels of volume and the costs and determines a break-even point for cost structures with different sales volumes that will help managers in making economic decisions for short term.



Benefits Explanation

- Cost Volume Profit Analysis includes the analysis of sales price, fixed costs, variable costs, the number of goods sold and how it affects the profit of the business.
- The aim of a company is to earn profit and profit depends upon a large number of factors, most notable among them are the cost of manufacturing and the volume of sales. These factors are largely interdependent.
- The volume of sales is dependent upon production volume which in turn is related to costs which are affected by Volume of production, product mix, internal efficiency of the business, production method used etc.
- CVP analysis helps management in finding out the relationship between cost and revenue to generate profit.
- CVP Analysis helps them to determine the break-even point for different sales volume and cost structures.
- With CVP Analysis information, the management can better understand the

overall performance and determine what units it should sell to break even or to reach a certain level of profit.

Cost Volume Profit Analysis Formula

The computing of Cost volume profit analysis formula is as follows:

ADVANTAGES

1. CVP analysis provides a clear and simple understanding of the level of sales which are required for a business to break even (No profit No loss), level of sales required to achieve targeted Profit.
2. CVP analysis helps management to understand the different costs at different levels of production/sales volume. CVP analysis helps decision-makers in forecasting cost and profit on account of change in volume.
3. CVP Analysis helps businesses analyze during recessionary times the comparative effects of shutting down a business or continuing business at a loss; as it clearly bifurcates the Direct and Indirect cost.
4. Effects of changes in fixed and variable cost help management decide the optimum level of production

Limitations of Cost-Volume Analysis (CVP)

1. CVP analysis assumes fixed cost is constant which is not the case always; beyond a certain level fixed cost also changes.
2. Variable cost is assumed to vary proportionately which doesn't happen in reality.
3. Cost volume profit analysis assumes costs are either fixed or variable; however, in reality, some costs are semi-fixed in nature. For example, Telephone expenses comprise a fixed monthly charge and a variable charge based on the number of calls made.
4. Break-even analysis is of vital importance in determining the practical application of cost func¬tions. It is a function of three factors, i.e. sales volume, cost and profit. It aims at classifying the dynamic relationship existing between total cost and sale volume of a company.

5. Hence it is also known as "cost-volume-profit analysis". It helps to know the operating condition that exists when a company 'breaks-even', that is when

sales reach a point equal to all expenses incurred in attaining that level of sales. The break-even point may be defined as that level of sales in which total revenues equal total costs and net income is equal to zero. This is also known as no-profit no-loss point. This concept has been proved highly useful to the company executives in profit forecasting and planning and also in examining the effect of alternative business management decisions.

Break-Even Chart:

Break-Even charts are being used in recent years by the managerial economists, company execu¬tives and government agencies in order to find out the break-even point. In the break-even charts, the concepts like total fixed cost, total variable cost, and the total cost and total revenue are shown separately. The break even chart shows the extent of profit or loss to the firm at different levels of activity. The following Fig. 1 illus¬trates the typical break-even chart.

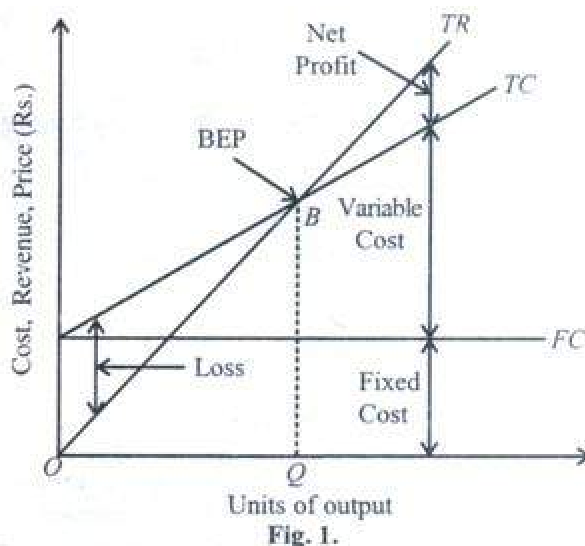


Fig. 1.

Assumptions of Break-Even Analysis:

The break-even analysis is based on the following set of assumptions:

(i) The total costs may be classified into fixed and variable costs. It ignores semi-variable cost.

(ii) The cost and revenue functions remain linear.

(iii) The price of the product is assumed to be constant.

(iv) The volume of sales and volume of production are equal.

(v) The fixed costs remain constant over the volume under consideration.

(vi) It assumes constant rate of increase in variable cost.

(vii) It assumes constant technology and no improvement in labour efficiency.

(viii) The price of the product is assumed to be constant.

(ix) The factor price remains unaltered.

(x) Changes in input prices are ruled out.

(xi) In the case of multi-product firm, the product mix is stable.

ANGLE OF INCIDENCE

The Angle of Incidence in accounting occurs when the entire sales line crosses the cost line from below in the break-even chart. Or, it is an angle that gets created due to the sale and cost line. Usually, this angle starts forming at the break-even point, indicating how efficiently the company is making a profit. Further, the angle suggests that the rate at which the company is making profits.

What is Margin of Safety?

The margin of safety is the difference between the amount of expected profitability and the break-even point. The margin of safety formula is equal to current sales minus the breakeven point, divided by current sales.

Margin of Safety

$$\text{Margin} = \frac{(\text{Current sales level} - \text{breakeven point})}{\text{Current sales level}} \times 100$$

Advantages

- One of the most important and basic benefits of Break-Even Point in accounting is its simplicity of calculation and helping the business determine the number of units to be sold to breakeven i.e. no profit no loss.
- It helps in understanding the cost structure i.e. the proportion of Fixed Cost

and Variable Cost. Since Fixed Cost doesn't change easily, it helps business owners to take measures to control the Variable cost without focusing on the total cost.

- It is very important in forecasting, long-term planning, growth and stability of the business.

Disadvantages

- The biggest shortcoming of Break-Even Point in accounting analysis lies in the nature of assumption which holds that fixed cost remains constant and Variable cost varies proportionately with the level of sales which may not be the case in the real-world scenario.
- It assumes costs are either fixed or variable; however, in reality, some costs are semi-fixed in nature. Example Telephone expenses comprise a fixed monthly charge and a variable charge based on the number of calls made.

Managerial Uses of Break-Even Analysis:

To the management, the utility of break-even analysis lies in the fact that it presents a microscopic picture of the profit structure of a business enterprise. The break-even analysis not only highlights the area of economic strength and weakness in the firm but also sharpens the focus on certain leverages which can be operated upon to enhance its profitability.

It guides the management to take effective decision in the context of changes in government policies of taxation and subsidies.

The break-even analysis can be used for the following purposes:
(i) Safety Margin:
The break-even chart helps the management to know at a glance the profits generated at the various levels of sales. The safety margin refers to the extent to which the firm can afford a decline before it starts incurring losses.

The formula to determine the sales safety margin is:
Safety Margin= (Sales – BEP)/ Sales x 100

.

(ii) Target Profit:
The break-even analysis can be utilised for the purpose of calculating the volume of sales necessary to achieve a target profit.

When a firm has some target profit, this analysis will help in finding out the extent of increase in sales by using the following formula:
Target Sales Volume = Fixed Cost + Target Profit / Contribution Margin per unit

(iii) Change in Price:
The management is often faced with a problem of whether to reduce prices or not. Before taking a decision on this question, the management will have to consider a profit. A reduction in price leads to a reduction in the contribution margin.

This means that the volume of sales will have to be increased even to maintain the previous level of profit. The higher the reduction in the contribution margin, the higher is the increase in sales needed to ensure the previous profit.

The formula for determining the new volume of sales to maintain the same profit, given a reduction in price, will be as follows:
New Sales Volume = Total Fixed Cost = Total Profit/ New Selling price – Average Variable Cost

(IV) Change in Costs:
When costs undergo change, the selling price and the quantity produced and sold also undergo changes.

Changes in cost can be in two ways:
(i) Change in variable cost, and

(ii) Change in fixed cost.

(i) Variable Cost Change:
An increase in variable costs leads to a reduction in the contribution margin. This reduction in the contribution margin will shift the break-even point downward. Con¬versely, with the fall in the proportion of variable costs, contribution margins increase and break-even point moves upwards.

Under conditions of changing variable costs, the formula to determine the new quantity or the new selling price is:
(a) New Quantity or Sales Volume = Contribution to Margin/ Present Selling Price – New Variable Cost per Unit

(b) New Selling Price = Present Sale Price +New Variable Cost-Present Variable Cost

(ii) Fixed Cost Change:
An increase in fixed cost of a firm may be caused either due to a tax on assets or due to an increase in remuneration of management, etc. It will increase the contribution margin and thus push the break-even point upwards. Again to maintain the earlier level of profits, a new level of sales volume or new price has to be found out.

(v) Decision on Choice of Technique of Production:
A firm has to decide about the most economical production process both at the planning and expansion stages. There are many techniques available to produce a product. These techniques will differ in terms of capacity and costs. The break¬even analysis is the most simple and helpful in the case of decision on a choice of technique of produc¬tion.

For example, for low levels of output, some conventional methods may be most probable as they require minimum fixed cost. For high levels of output, only automatic machines may be most profitable. By showing the cost of different alternative techniques at different levels of output, the break-even analysis helps the decision of the choice among these techniques.

(vi) Make or Buy Decision:
Firms often have the option of making certain components or for purchasing them from outside the concern. Break-even analysis can enable the firm to decide whether to make or buy.

(i) Is the required quality of the product available?

(ii) Is the supply from the market certain and timely?

(iii) Do the supplies of the components try to take any monopoly advantage?

(vii) Plant Expansion Decisions:
The break-even analysis may be adopted to reveal the effect of an actual or proposed change in operation condition. This may be illustrated by showing the impact of a proposed plant on expansion on costs, volume and profits. Through the break-even analysis, it would be possible to examine the various implications of this proposal.

(viii) Plant Shut down Decisions:
In the shutdown decisions, a distinction should be made between out of pocket and sunk costs. Out of pocket costs include all the variable costs plus the fixe cost which do not vary with output. Sunk fixed costs are the expenditures previously made but from which benefits still remain to be obtained e.g. depreciation.

(ix) Advertising and Promotion Mix Decisions:
The main objective of advertisement is to stimulate or increase sales to all customers-former, present and future. If there is keen to undertake vigorous campaign of advertisement. The management has to examine those marketing activities that stimulate consumer purchasing and dealer effectiveness.

The break-even point concept helps the management to know about the circumstances. It enables him not only to take appropriate decision but by showing how these additional fixed cost would influence BEPs. The advertisement pushes up the total cost curve by the amount of advertisement expenditure.

(x) Decision Regarding Addition or Deletion of Product Line:
If a product has outlive utility in the market immediately, the production must be abandoned by the management and examined what would be its consequent effect on revenue and cost. Alternatively, the management may like to add a product to its existing product line because it expects the product as a potential profit spinner. The break-even analysis helps in such a decision.

The following points highlight the top seven applications of marginal costing.

Marginal Costing Application # 1. Fixation of Selling Price:
Fixation of selling price of a product is, no doubt, one of the most significant factors in modern management.

It becomes necessary for various purposes, like, under normal circumstances of the interest; at trade depression, accepting additional order etc.

Marginal Costing Application # 2. Diversification of Products:
In order to capture a new market or to utilise idle facilities etc., it may so happen that a new product may be introduced in the market together with the existing one. Naturally, the question arises before us whether the same will be a profitable product one.

In this regard it may be mentioned that the new product may be introduced only when the same is capable of contributing something against fixed cost and profit. Fixed cost will not be considered here on the assumption that the same will not increase, i.e., the new product will be produced out of existing resources.

Marginal Costing Application # 3. Selection of Most Profitable Product-Mix:
If any firm produces more than one product it may have to decide in what ratio should the products be produced or sold in order to earn maximum profit. However, the marginal costing techniques help us to a great extent while determining the most profitable product or sales mix.

Contribution under various mix will be determined first. Then the product which gives the highest contribution must be given the highest priority, and vice versa. Similarly, any product which gives negative contribution should be discontinued.

Marginal Costing Application # 4. Make-or-Buy Decisions:
Sometimes a firm may have to face a problem as to whether a part should be produced or the same should be purchased from the outside open market.

In this case, the following two points should carefully be considered:
(a) The Marginal Cost of the product; and

(b) Whether surplus capacity is available.

Marginal Costing Application # 5. Alternative Method of Production:
It is interesting to note that the techniques of marginal costing are frequently applied while comparing the alternative methods of production, viz., whether one machine is to be employed instead of another, machine-work or hand-work etc.

It should be remembered that the basis of selection would, however, be the relative contribution available from various methods when fixed costs are constant. That is, the method of production which will give the greatest contribution should be selected. Time factor or limiting factor, if any, should carefully be considered.

Marginal Costing Application # 6. Effect of Change in Selling Price:
Effect of change in selling prices is another significant factor which creates problem, particularly when a firm needs expansion. For its wider market the selling price of the product may be reduced. Needless to mention that the effect of such a change in selling price should carefully be considered.

Marginal Costing Application # 7. Shut-Down or Continue Decisions:
Due to trade recession, unprofitable operation etc. it often becomes necessary for the management to suspend or close-down temporarily or permanently a part of activity which should be taken after careful relevant consideration. In the circumstances, absorption costing techniques will distort the position due to fixed cost while marginal costing technique helps us to take proper decision in this case.

That is, if the products make a contribution towards fixed costs, it is advisable to continue the same because losses are minimised. Similarly, if the operation is suspended, certain fixed costs may be avoided but certain fixed costs may yet have to be incurred (i.e., maintenance of plant).

Thus, the decision depends on whether the contribution so made is more than the difference between the fixed costs in the normal courses of operation and the fixed costs incurred in the plant is shut-down.

Differential Cost Analysis: Meaning and Its Practical Applications

Meaning of Differential Cost Analysis:
Differential costing is a technique where mainly differential costs are considered relevant. Differential cost is the difference in total costs between two acceptable alternative courses of action.

The alternative actions may arise due to change in sales volume, price, product mix, or such actions as make or buy or continue or stop production, etc.

Practical Applications of Differential Cost Analysis:
Differential cost analysis may be used for problems where capital investment is involved and also for those where which does not involve capital investments.

Some of the problems where it may be applied are as follows:
(a) Determination of the most profitable levels of production and price

b) Acceptance of special orders – offer at a lower price or offering a quotation at lower selling price in order to increase the capacity.

(c) Sell a product as it is or after further processing

(d) Determination of right price at which materials may be purchased

(e) Decisions regarding alternative capital investment and plant replacement

(f) Decisions such as changing the product mix, method of production, make or buy, adding new product, etc.

ACCOUNTING FOR MANAGERIAL DECISIONS

Unit -3

Budget and budgetary control

Budgetary control and standard costing systems are two essential tools frequently used by business executives for the purpose of planning and control. In the case of budgetary control, the entire exercise starts with the setting up of budgets or targets and ends with the taking of an action, in case the actual figures differ with the budgetary ones.

Meaning of Budget and Budgeting Budget: CIMA Official Terminology has defined the terms 'budget' as "Quantitative expression of plan for a defined period of time. It may include planned sales volumes and revenues; resource quantities, costs and expenses; assets, liabilities and cash flows."

Budgeting: It's a means of coordinating the combined intelligence of an entire organisation into a plan of action based on past performance and governed by rational judgment of factors that will influence the course of business in the future.

ESSENTIALS OF BUDGET

Essential elements of a budget are as follows:

1. Organisational structure must be clearly defined and responsibility should be assigned to identifiable units within the organisation.
2. Setting of clear objectives and reasonable targets. Objectives should be inconsonance with the long term plan of the organisation.
3. Objectives and degree of responsibility should be clearly stated and communicated to the management or person responsible for.
4. Budgets are prepared for the future periods based on expected course of actions.
5. Budgets are updated for the events that were not kept into the mind while establishing budgets Hence, budgets should flexible enough for mid- term revision.

6. The entire organisation must be committed to budgeting.

7. Budgets should be quantifiable and master budget should be broken down intovarious functional budgets.

8. Budgets should be monitored periodically. Variances from the set yardsticks (standards) should be analysed and responsibility should be fixed.

9. Budgetary performance needs to be linked effectively to the reward system.

OBJECTIVES OF BUDGETING

Planning : The process of budgeting begins with the establishment of specific targets of performance and is followed by executing plans to achieve such desired goals and from time to time comparing actual results with the target goals. These targets include both the overall business targets as well as the specific targets for the individual units within the business. Establishing specific targets for future operations is part of the planning function of management, while executing actions to meet the goals is the directing function of management. It may be explained as

● Budget plans are made in synchronisation with the overall objectives of the organisation, keeping mission and corporate strategy into account. Individual plans at unit level should be in consonance with organisational plan.

● Budgets reflect plans and that planning should have taken place before budgets are prepared.

● Budgets plans are quantified and responsibility is assigned to the persons who are responsible for execution of plan.

● using the budget to communicate these expectations throughout the organisation has helped many a companies to reduce expenses during a severe business recession.

● Planning not only motivates employees to attain goals but also improves overall decision making. During the planning phase of the budget process, all viewpoints are considered, options identified, and cost reduction opportunities assessed. This process may reveal opportunities or threats that were not known prior to the budget planning process.

Directing and Coordinating:

● Once the budget plans are in place, they can be used to direct and coordinate operations in order to achieve the stated targets.

● A business, however, is much more complex and requires more formal direction and coordination.

● The budget is one way to direct and coordinate business activities and units to achieve stated targets of performance.

● The budgetary units of an organisation are called responsibility centres. Each responsibility centre is led by a manager who has the authority over and responsibility for the unit's performance.

● Objectives and degree of performance expected from a responsibility centres are communicated rapidly.

Controlling:

● as time passes, the actual performance of an operation can be compared against the planned targets. This provides prompt feedback to employees about their performance. If necessary, employees can use such feedback to adjust their activities in the future.

● Feedback received in the form of budget report from the responsibility centre. This report is helpful to know the performance of the concerned unit.

● any unexpected changes into the conditions which were prevailing at the time of preparing budget are taken into account and budgets are revised to show true performance yardstick.

● comparing actual results to the plan also helps prevent unplanned expenditures. The budget encourages employees to establish their spending priorities. The main objective of Budgeting is to help in achieving the overall objective of the organization.

MEANING OF BUDGETARY CONTROL

CIMA has defined the terms 'budgetary control' as "Budgetary control is the establishment of budgets relating to the responsibilities of executives of a policy and the continuous comparison of the actual with the budgeted results, either to secure by individual action the objective of the policy or to provide a basis for its revision.

"It is the system of management control and accounting in which all the operations are forecasted and planned in advance to the extent possible and the actual results compared with the forecasted and planned ones.

Budgetary Control Involves:

1. Establishment of budgets

2. Continuous comparison of actual with budgets for achievement of targets

Objectives of Budgetary Control System

1. Portraying with precision the overall aims of the business and determining targets of performance for each section or department of the business.

2. Laying down the responsibilities of each of the executives and other personnel so that everyone knows what is expected of him and how he will be judged. Budgetary control is one of the few ways in which an objective assessment of executives or department is possible.

3. Providing a basis for the comparison of actual performance with the predetermined targets and investigation of deviation, if any, of actual performance and expenses from the budgeted figures. This naturally helps in adopting corrective measures.

4. Ensuring the best use of all available resources to maximise profit or production, subject to the limiting factors. Since budgets cannot be properly drawn up without considering all aspects usually there is good co-ordination when a system of budgetary control operates.

5. Co-ordinating the various activities of the business, and centralising control and yet

enabling management to decentralise responsibility and delegate authority in the overall interest of the business.

6. Engendering a spirit of careful forethought, assessment of what is possible and an attempt at it. It leads to dynamism without recklessness. Of course, much depends on the objectives of the firm and the vigour of its management.

7. Providing a basis for revision of current and future policies.

8. Drawing up long range plans with a fair measure of accuracy.

9. Providing a yardstick against which actual results can be compared

Limitations of Budgetary Control System

1. Based on Estimates
Budgets are based on series of estimates which are based on the conditions prevailed or expected at the time budget is established. It requires revision in plan if conditions change.
2. Time factor Budgets cannot be executed automatically. Some preliminary steps are required to be accomplished before budgets are implemented. It requires proper attention and time of management. Management must not expect too much during the development period. 3. Co-operation Required
Staff co-operation is usually not available during budgetary control exercise. In a decentralised organisation each unit has its own objective and these units enjoy some degree of discretion. In this type of organisation structure coordination among different units are required. The success of the budgetary control depends upon willing co-operation and teamwork,
4. Expensive its implementation is quite expensive. For successful implementation of the budgetary control proper organisation structure with responsibility is prerequisite. Budgeting process start from the collection of requirements to budget and performance analysis. It consumes valuable resources for these purpose, hence, it is an expensive process.
5. Not a substitute for management
Budget is only a managerial tool and must be applied correctly for management to get benefited. Budgets are not a substitute for management.

6. Rigid document Budgets are considered as rigid document. But in reality, an organisation is exposed to various uncertain internal and external factors. Budget should be flexible enough to incorporate on-going developments in the internal and external factors affecting the very purpose of the budget

Advantages of Budgetary Control System

Points Description

1. Efficiency The use of budgetary control system enables the management of a business concern to conduct its business activities in the efficient manner.

2. Control on expenditure

It is a powerful instrument used by business houses for the control of their expenditure. It in fact provide1`s a yardstick for measuring and evaluating the performance of individuals and their departments.

3. Finding deviations
It reveals the deviations to management, from the budgeted figures after making a comparison with actual figures.

4. Effective utilisation of resources
Effective utilisation of various resources like—men, material, machinery and money—is made possible, as the production is planned after taking them into account.

5. Revision of plans it helps in the review of current trends and framing offuture policies.

6. Implementation of Standard Costing system
It creates suitable conditions for the implementation of standard costing system in a business organisation.

7. Cost Consciousness
Budgets are studied by outside fund providers also such as banking and financial institutions, realising that management encourages cost consciousness and maximum utilisation of Available resources.

8. Credit Rating Management which have developed a well ordered budget plans and which operate accordingly, receive greater favour from credit agencies

PREPARATION OF BUDGET (PROCESS)

1. **Definition of objectives**: A budget being a plan for the achievement of certain operational objectives, it is desirable that the same are defined precisely. The objectives should be written out; the areas of control demarcated; and items of revenue and expenditure to be covered by the budget stated. This will give a clear understanding of the plan and its scope to all those who must cooperate to make it a success.

2. **Location of the key (or budget) factor**: There is usually one factor (sometimes there may be more than one) which sets a limit to the total activity. For instance, in India today sometimes non-availability of power does not allow production to increase in spite of heavy demand. Similarly, lack of demand may limit production. Such a factor is known as key factor. For proper budgeting, it must be located and estimated properly.

3. **Appointment of controller**: Formulation of a budget usually required whole time services of a senior executive; he must be assisted in this work by a Budget Committee, consisting of all the heads of department along with the Managing Director as the Chairman. The Controller is responsible for coordinating and development of budget programmes and preparing the manual of instruction, known as Budget manual.

4. **Budget Manual**: Effective budgetary planning relies on the provision of adequate

information to the individuals involved in the planning process. Many of these information needs are contained in the budget manual. A budget manual is a collection of documents that contains key information for those involved in the planning process. Typical contents could include the following:

5. **Budget period:** The period covered by a budget is known as budget period. There is no general rule governing the selection of the budget period. In practice the Budget Committee determines the length of the budget period suitable for the business. Normally, a calendar year or a period co-terminus with the financial year is adopted.

The Budget period is then sub-divided into shorter periods; it may be months or quarters or such periods as coincide with period of trading activity.

6. **Standard of activity or output:**

For preparing budgets for the future, past statistics cannot be completely relied upon, for the past usually represents a combination of good and bad factors. Therefore, though results of the past should be studied but these should only be applied when there is a likelihood of similar conditions repeating in the future.

Zero-based budgeting

(ZBB) is a method of budgeting in which all expenses must be justified for each new period. The process of zero-based budgeting starts from a "zero base," and every function within an organization is analysed for its needs and costs. Budgets are then built around what is needed for the upcoming period, regardless of whether each budget is higher or lower than the previous one.

Zero Based Budgeting Steps

1) Identification of a task

2) Finding ways and means of accomplishing the task

3) Evaluating these solutions and also evaluating alternatives of sources of funds
4) Setting the budgeted numbers and priorities

Zero Based Budgeting Advantages

1. **Accuracy**: Against the regular methods of budgeting that involve just making some arbitrary changes to the previous year's budget, zero-based budgeting makes every department relook each and every item of the cash flow and compute their operation costs. This to some extent helps in cost reduction as it gives a clear picture of costs against the desired performance.
2. **Efficiency**: This helps in efficient allocation of resources (department-wise) as it does not look at the historical numbers but looks at the actual numbers
3. **Reduction in redundant activities**: It leads to the identification of opportunities and more cost-effective ways of doing things by removing all the unproductive or redundant activities.
4. **Budget inflation**: Since every line item is to be justified, zero-based budget

overcomes the weakness of incremental budgeting of budget inflation.

5. Coordination and Communication: It also improves coordination and communication within the department and motivates employees by involving them in decision-making.

Although zero-based budgeting merits make it look like a lucrative method, it is important to know the disadvantages listed as under:

Zero Based Budgeting Disadvantages

1. Time-Consuming: Zero-based budgeting is a very time-intensive exercise for a company or government-funded entities to do every year as against incremental budgeting, which is a far easier method.
2. High Manpower Requirement: Making an entire budget from the scratch may require the involvement of a large number of employees. Many departments may not have an adequate time and human resource for the same.
3. Lack of Expertise: Explaining every line item and every cost is a difficult task and requires training the managers.

Conclusion: Zero-based budgeting aims at reflecting true expenses to be incurred by a department or a state [in the case of budget making by the government]. Although time-consuming, this is a more appropriate way of budgeting. At the end of the day, it is a company's call as whether it wants to invest time and manpower in the budgeting exercise to provide more accurate numbers or go for an easier method of incremental budgeting.

Performance budget

Performance budget also referred to as performance-based budgeting is a practice of preparing the budget based on the evaluation of the productivity of the different operations in an organization. Operations which are contributing the most to the profitability, the larger share of the budget is allocated to that division. It leads to optimum utilization of resources such as finance, skills of the staff, use of the productive time etc.

Basically, performance budget requires an evaluation of the performance and productivity from one budget period to another budget period. Hence, it is the process of identifying the results achieved by each division of the organization.

PROCESS OF PERFORMANCE BUDGETING

1. Formulation of objectives
2. Identify the various programs which will accomplish these objectives
3. Evaluation and selection of programs on the basis cost benefit analysis
4. Development of performance criteria for various programs
5. Preparing the financial plans

6. Assessing the performance of each program

Advantages of performance budgeting

1. It clearly states the purpose and objectives for which funds are needed
2. It improves the performance of units in continuous manner
3. It helps in decision making regarding allocation of funds
4. It acts as a tool for reviewing the performance of the units
5. It integrates the process of planning and budgeting

Disadvantages of performance budgeting

1. It focuses on quantitative evaluation rather than qualitative evaluation
2. It is difficult to quantify social benefits
3. It is difficult for long term process

Unit -4 STANDARD COSTING

Introduction:

The word standard simply means some norm, specification or target. It gives a reference point, bench mark, model or yardstick for comparison.
Standard costs are part of cost accounting system whereby standard cost is incorporated directly and formally into the manufacturing accounts. It is divided into two major parts

(1) Historical Costs
(2) Pre-determined Costs.

Historical cost means the actual cost or past cost and historical costing is a system in which actual costs incurred in the past are determined.

Historical costs have some limitations:

(1) Such costs are obtained too late and cannot be used for price quotations.
(2) Historical costs do not serve the object of cost control, for the cost has already been incurred before cost records are available for management control.
(3) Historical costs do not provide any benchmark against which efficiency can be measured.

Standard costing is a technique which uses standard for costs and revenues for the purpose of control through variance analysis. Here, standards are performance expectations. Standard costing aims at eliminating waste and increasing efficiency in operation through setting up standards for production costs and production performance. In short, standard costing is a control device and not a separate method of product costing. It can be used with any method of product costing, job costing or process costing.

Costs are predetermined. Such predetermined costs are then compared with the actual costs and the difference between these costs known as variances.

Meaning:

The word standard means a 'norm' or a 'criterion'. Standard cost is thus a criterion cost which may be used as a yardstick to measure the efficiency with which actual cost has been incurred.

There is a constant process of development effected in business through the help of standard costing method since the standard costs set in are sensible, capable of being attained and are revised from time to time in accord with needs and requirements of the business enterprise.

1) Standard cost:

Standard cost is a figure which represents an amount that can be taken as a typical of the cost of an article or other cost factor. It is established on the basis of planed operations, planed cost efficiency levels, and expected capacity utilization.

Standard cost is a predetermined calculation of the presumed cost under the specified conditions. It is built up from an assessment of the value of cost elements. It correlates technical specification of material, labour and other cost to the price or wage rate which have occurred during the period in which the standard cost is to be determined.

Input / Output

For example, wages or machine hour per unit of product

Standard cost is a predetermined cost which is calculated from management standard of efficient operation and relevant necessary expenditure. - C.I.M.A. London

The standard cost is a predetermined cost which determines what each product or service should cost under given circumstances.

- Brown and Howard

2) Standard Costing:

A standard costing system is a method of cost accounting in which standard costs are used in recording certain transaction and the actual costs are compared with the standard cost to learn the amount and reason for variations from the standard. - W.B. Lawrence

Standard costing involves the preparation of cost based on pre-determined standards and continuous comparison of actual with them for the purpose of guidance and control. - D. Joseph

3) Historical Costing:

The term ‘Historical Cost’ is also known as Actual Cost. The meaning of this cost suggests the actual costs of products which have been incurred in their production.

The experts maintain that, the production of products, the expenses like material, labour, overheads etc. should be paid first and then they should be recorded in books. So these total expenses are called historical costs or past costs.

The figures relating to costs obtained at the end of the production process may have

some definite value in rectifying past practices if they are properly analysed.

Concepts of Standard Cost and Standard Costing:
1) Standard Cost:

Standard costs are called pre-determined costs. The different standards regarding all the elements of costs, i.e., material, labour and overheads, are determined on the basis of historical cost and many other factors. These factors are cautiously studied before determining the standards.

The standard committee will generally consist of production manager, purchase manager, personal manager, and other functional heads. It is possible that the standard cost decided by the manager could be idle, normal or expected. The idle standard cost may refer to an estimate of the cost under perfect competition. It is competed on the basis that there is no scrap, no idling of machinery or breakdown and so on. On the other hand, expected standard cost is based upon the attainable result.

Standard Costs are not simple average but they are set with due care after careful study and observation of production activity in the past and the present.

2) Standard Costing: Standard costing is a perfect system of controlling the costs and measuring efficiency and its development. It is a technique of cost reduction and cost control. It helps to provide valuable guidance in several management functions such as formulating policies, determining price level,

Advantages of Standard Costing:

1. Proper Planning: It helps to apply the principle of "Management by exception". That is, the management need not worry over those activities which proceed in tandem plans. It is only on the issues of exceptions that they have to concentrate.

2. Efficient Cost Control: Standard Costing is a tool for the management to gain reduction in the cost and control over it. Under this technique, differences are analysed and responsibilities are determined.

3. **Motivational Factor:** Labour efficiency is promoted and they are destined to be cost conscious. Standards provide incentives and motivation to work with greater effort. This increases efficiency and productivity.

4. **Comparison of Forecasting and Outcome:** A target of efficiency is set for the employees and the cost consciousness is stimulated. Since the process of standard costing allow an appraisal to be made of personnel, machines and method of working, current inefficiencies come to the notice and get eliminated.

5. **Inventory Control:** Standard costing facilitates inventory control and simplifies inventory valuations. This ensures uniform pricing of stocks in the form of raw materials, work-in-progress and finished goods.

6. **Economical System:** Standard costing system is economical system from the viewpoint that it does not require detailed records. It also des not require a big staff. It results in the reduction in paper work in accounting and needs very few records. Thus, there is saving of time as well as money.

7. **Helpful in Budgeting:** Budgets are prepared on the basis of standard costing. Standards which are set up in respect of materials, labour and overheads, are helpful in preparing various budgets. For example, flexible budget, sales budget, etc.

8. **Helps Formulate Policies:** This technique is a valuable aid to the management in determining prices and formulating production policies. Standard costing equips cost estimates while planning the production of new products.

9. **Helps Distinguish Activities:** Standard costing helps in distinguishing between skilled and unskilled activities. So the skilled worker only gives pays attention to improving the activities of the unskilled workers.

10. **Eliminates Wastage:** Through fixing standard, certain waste such as material wastage, idle time, lost machine hours, etc. are reduced.

Limitations of Standard Costing:

1. **Costly System:** Because the Standard Costing requires highly skilful and competent personnel, it becomes a costly system too. For the same experts are paid high remuneration.

2. **Difficulties in Fixation of Standard:** It is always difficult to determine precise standard costs in a given situation which will coincide with actual cost when operations are over. Standard cost are determined partly by the past experience and partly by the cost projections based on advanced statistical techniques. Thus, uncertainties revolve around standards.

3. **Constraint for Service Industry:** Standard costing is applied for planning and controlling manufacturing costs. Thus, it cannot be applied in a service industry.

4. **Consistency of Standard:** because the standards of marginal costing fluctuate and vary time to time, it is difficult to always sustain and continue the same standards.

5. **Unsuitable for Non-standardised Products:** Standard costing is expensive and unsuitable for job manufacturing industries as they manufacture non standardized products such as catering, tailoring, printing, etc.

6. **Relatively Fixed Standards:** A business may not be able to keep standards up-to-date. In other words, a business may not revise standards to keep pace with the frequent changes in manufacturing conditions. Firms may avoid revising standards as it is a costly affair.

7. **Difficulties for Small Industries:** Establishment of standards and their implementation involve initial high costs. Standards have to be revised and new standards be fixed involving larger costs. Thus, small firms find it expensive to

operate standard costing system. This system is not fit for each type of industries.

8. Discouragement for Workers: Sometimes the employees and workers are discouraged when the standards are fixed at a high level. The unreal high standards may adverse by effect the morale of workers rather than working as an incentive for better efficiency.

9. Inaccurate Diverse Results: Inaccurate and unreliable standards cause misleading results and thus may not enjoy the confidence of the users of this system.

Objectives of Standard Costing:

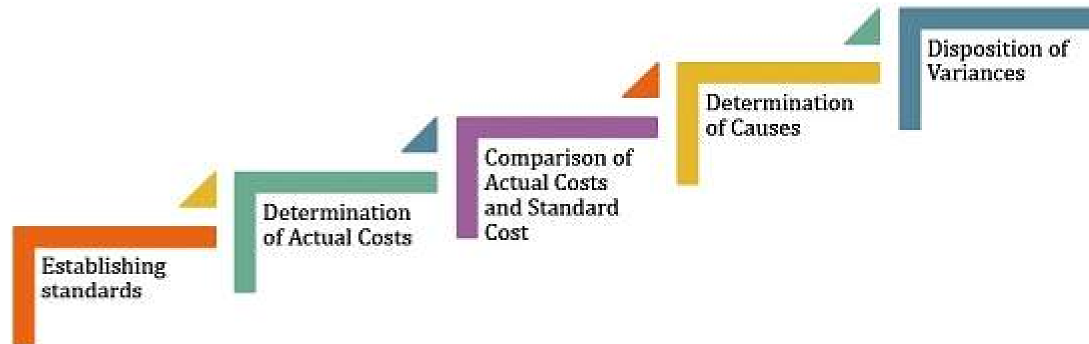
1. To institute a control mechanism on all the elements of costs that affect production and sales
2. To measure different operational efficiencies and check the wastages
3. To improve the delegation of authority and generate a sense of responsibility among the employees
4. To develop a cost consciousness in the employees
5. To presume the production costs, sales and profit
6. To avail the benefits of 'Management by exception.'
7. To bring about a vivid progressive vision and sagacious decision making at each managerial level.

Need of Standard Costing

- **Future cost estimation**: Standard Costs are determined after considering all the possibilities that may arise in the future. It also helps in deciding whether a particular project is to be undertaken, by determining its profitability.
- **Performance check**: Standard cost acts as targets to the cost centres which should not be transcended. In such a situation, these targets are helpful in checking the performance through comparison with the actual results.
- **Budgeting**: The standard costs are used to prepare budgets, and evaluate the performance of the executive staff on the basis of these budgets.

The basic objective of standard costing is to measure the differences between standard costs and actual costs, and analysing them to maintain the productivity of the organization.

Process of Standard Costing



1. **Establishing Standards**: First and foremost, the standards are to be set on the basis of management's estimation, wherein the production engineer anticipates the cost. In general, while fixing the standard cost; more weight is given to the past data, the current plan of production and future trends. Further, the standard is fixed in both quantity and costs.
2. **Determination of Actual Cost**: After standards are set, the actual cost for each element, i.e. material, labour and overheads is determined, from invoices, wage sheets, account books and so forth.
3. **Comparison of Actual Costs and Standard Cost**: Next step to the process is to compare the standard cost with the actual figures, so as to ascertain the variance.
4. **Determination of Causes**: Once the comparison is done, the next step is to find out the reason for the variances, to take corrective actions and also to evaluate the overall performance.
5. **Disposition of Variances**: The last step to this process is the disposition of variances by transferring it to the costing profit and loss account.

Standard costing can be helpful in ascertaining the profitability of the business at any level of production. Further, it is also useful in practical management functions, i.e. planning and controlling.

VARIANCE ANALYSIS

Standard Costing guides as a measuring rod to the management for determination of "Variances" in order to evaluate the production performance. The term "Variances" may be defined as the difference between Standard Cost and actual cost for each element of cost incurred during a particular period.

The term "Variance Analysis" may be defined as the process of analysing variance by subdividing the total variance in such a way that management can assign responsibility for off-Standard Performance.

The variance may be favourable variance or unfavourable variance. When the actual performance is better than the Standard, it resents "Favourable Variance." Similarly,

where actual performance is below the standard it is called as "Unfavourable Variance."

Variance analysis helps to fix the responsibility so that management can ascertain –

(a) The amount of the variance

(b) The reasons for the difference between the actual performance and budgeted performance Standard Costing and Variance Analysis

(c) The person responsible for poor performance

(d) Remedial actions to be taken

Types of Variances:

Variances may be broadly classified into two categories

(A) Cost Variance and

(B) Sales Variance. '

(A) Cost Variance Total Cost Variance is the difference between Standards Cost for the Actual Output and the Actual Total Cost incurred for manufacturing actual output.

The Total Cost Variance Comprises the following:

I. Direct Material Cost Variance (DMCV)

II. Direct Labour Cost Variance (DLCV)

III. Overhead Cost Variance (OCV)

Importance of Variance:

There is a lot importance of analysis of variance. There are many objects fulfilled with their analysis. Without analysis of variance, there is no use of standard costing. The important points of variances are as under:

1) Check and control of wastage is possible.

2) It improves the efficiency of the organization by the use of standard costing.

3) It exercises control over all cost centres including department, individuals and so on.

4) Responsibility of a particular person or department can be fixed.

5) In the prediction of production cost, sales and profit, variance analysis is very useful

. 6) On the basis of variance analysis, delegation of authority could be made effective

. 7) Variance analysis is easy to introduce, apply and orient result.

8) Various operational efficiencies can be measured.

DISPOSAL OF VARIANCE

In order to make the analysis a control instrument, the management should investigate the causes of variances and take the necessary corrective measures. Another method is to carry forward the variances to the next financial year by crediting the same to a reserve account to be set off in the subsequent year or years. The favourable and adverse variances may cancel each other in the course of reasonable time and thus be disposed-off.

1. Materials Price Variance:
(a) Causes:
Change in market price, delivery costs; purchase of non-standard materials, emergency purchases, incorrect shipping instruction, loss of discount, etc.

(b) Disposition:
If all or a portion of the price variance is the result of inefficiencies or a saving has resulted from efficient purchasing, the amount may be adjusted to P&L account. If it is due to incorrect standards or change in market price the amount may be adjusted to inventories and cost of goods sold.

2. Materials Usage Variance:
(a) Causes:
Poor quality of materials; change in material mix, product or production methods; careless handling; excessive waste or scrap; incorrect setting of standards.

(b) Disposition:
The amount of usage variance resulting in inefficiency in handling and processing materials is transferred to profit and loss account. The amount of usage variance due to incorrect standards is apportioned to work in progress, finished goods and cost of goods sold.

3. Direct Wages Rate Variances:
(a) Causes:
General rise due to award or agreement, non-standard grade, abnormal overtime or payment above or below standard rates during seasonal or emergency operations.

(b) Disposition:
The amount of variance arising out of inefficiency can be controlled if transferred to profit and loss account. The amount of variance resulting from the use of out-of-date standards or from conditions beyond the control of management is adjusted to work

-in-progress, finished goods and cost of goods sold, on the basis of wages or time.

4. Direct Labour Efficiency Variance:
(a) Causes:
Poor working conditions, abnormal idle time i.e., power failure, breakdown, go-slow technique, quality of supervision, non-standard grade of material, or employees' non-co-operation in service departments.
b) Disposition:
The amount of variance attributed to various forms of inefficiency which are controllable is transferred to profit and loss account. The amount of variance resulting from improperly prepared standards and from conditions beyond the control of management may be adjusted to work-in-progress, finished goods and cost of goods sold.

5. Overhead Expenditure Variance:
a) Causes:
Under or over utilisation of a service; seasonal conditions; inefficiency in the use of a service (e.g. electricity in lieu of gas).

(b) Disposition:
The amount of variance due to seasonal conditions should be treated as a deferred item. The amount arising out of inefficiency which is controllable is transferred to profit and loss account.

The amount resulting from incorrectly prepared standard and from conditions beyond control is adjusted to work-in-progress, finished goods and cost of goods sold.

6. Overhead Cost of Capacity Variance:
(a) Causes:
Calendar variations, abnormal idle time such as strikes, breakdowns absenteeism, labour shortage, etc.

(b) Disposition:
The amount of seasonal variations is reasonably a deferred item. The amount arising from inefficient operations controllable by management is transferred to profit and loss account. The amount of variance arising out of abnormal idle time and beyond control of management is transferred to profit and loss account.

UNIT 5: DIVISIONAL PERFORMANCE ANALYSIS

DECENTRALIZATION

Decentralisation refers to tire systematic effort to delegate to the lowest levels all authority except that which can only be exercised at central points." —Louis A. Allen

"Decentralisation means the division of a group of functions and activities into relatively autonomous units with overall authority and responsibility for their operation delegate to time of cacti unit.'—Earl. P. Strong

Advantages of Decentralisation:

1. Reduces the burden on top executives:

Decentralisation relieves the top executives of the burden of performing various functions. Centralisation of authority puts the whole responsibility on the shoulders of an executive and his immediate group. This reduces the time at the disposal of top executives who should concentrate on other important managerial functions. So, the only way to lessen their burden is to decentralise the decision-making power to the subordinates.

2. Facilitates diversification:

Under decentralization, the diversification of products, activities and markets etc., is facilitated. A centralised enterprise with the concentration of authority at the top will find it difficult and complex to diversify its activities and start the additional lines of manufacture or distribution.

3. To provide product and market emphasis:

Product loses its market when new products appear in the market on account of innovations or changes in the customers demand. In such cases authority is decentralised to the regional units to render instant service taking into account the price, quality, delivery, novelty, etc.

4. Executive Development:

When the authority is decentralised, executives in the organisation will get the opportunity to develop their talents by taking initiative which will also make them

ready for managerial positions. The growth of the company greatly depends on the talented executives.

5. It promotes motivation*:*
To quote Louis A. Allen, "Decentralisation stimulates the formation of small cohesive groups. Since local managers are given a large degree of authority and local autonomy, they tend to weld their people into closely knit integrated groups." This improves the morale of employees as they get involved in decision-making process.

6. Better control and supervision:
Decentralisation ensures better control and supervision as the subordinates at the lowest levels will have the authority to make independent decisions. As a result they have thorough knowledge of every assignment under their control and are in a position to make amendments and take corrective action.

7. Quick Decision-Making:
Decentralisation brings decision making process closer to the scene of action. This leads to quicker decision-making of lower level since decisions do not have to be referred up through the hierarchy.

Disadvantages of Decentralisation:
Decentralisation can be extremely beneficial. But it can be dangerous unless it is carefully constructed and constantly monitored for the good of the company as a whole.

Some disadvantages of decentralisation are:
1. Uniform policies not followed:
Under decentralisation, it is not possible* to follow uniform policies and standardised procedures. Each manager will work and frame policies according to his talent.

2. Problem of Co-Ordination:
Decentralisation of authority creates problems of co-ordination as authority lies dispersed widely throughout the organisation.

3. More Financial Burden:
Decentralisation requires the employment of trained personnel to accept authority, it involves more financial burden and a small enterprise cannot afford to appoint experts in various fields.

4. Require Qualified Personnel:
Decentralisation becomes useless when there are no qualified and competent personnel.

5. Conflict:
Decentralisation puts more pressure on divisional heads to realize profits at any cost. Often in meeting their new profit plans, bring conflicts among managers.

RESPONSIBILITY ACCOUNTING

Meaning of Responsibility Accounting:

Responsibility accounting is a system in which the persons in the supervisory capacity such as the President, departmental head, foreman etc. are given a routine report showing the performance of the company, department or section—as the case may be.

The report will show the data relating to the operational results of the area and the items of which he is responsible for controlling.

Principles of Responsibility Accounting:

1. A target is fixed for each responsibility centre and is communicated to the concerned level of management.

2. Actual performance is compared with the target.

3. The variances from the budgeted plan are analysed to fix responsibility on the responsibility centre.

4. Corrective action is taken by the higher management and is communicated to the individuals responsible.

5. All apportioned costs and policy costs are excluded in determining the responsibility for costs.

Objectives of Responsibility Accounting:

The objectives of responsibility accounting are the following:

Overall organizational goals are broken down into small goals, each of the small goals is meant for better achievement of a responsibility centre.

with the attached responsibility each responsibility centre is tied up & there is adequate authority so that responsibility can be discharged.

at the end of a period, evaluation is done of the performance of each responsibility centre &comparison of the performance is done with the predetermined targets.

Thorough study is made of the achievements which are above or below the targets & remedial measures are adopted.

Assessment is made of the contribution made by each responsibility centre & examination is done of how far it's possible for the contribution to fulfilling its share in the ultimate organizational growth.

Emphasize is given on the control of cost through planning.

Use is made of the principle of 'management by exception' for the purpose of recording only those data where the actual performance of responsibility centre falls short of the set target & where the variance is beyond the reasonable limit.

Advantages of Responsibility Accounting:
The advantages of responsibility accounting are:
1. It establishes a sound mechanism for control.

It forces the management to consider the organisational structure and examines who is responsible for what and fix the delegation of power.

3. It encourages budgeting with which actual achievement can be compared.

4. It increases interest and awareness of the officers as they are called upon to explain about the deviations for which they are responsible.

5. The exclusion of items which are beyond the scope of the individual's responsibility simplifies the structure of the reports and facilitates promptness in reporting.

RESPONSIBILITY CENTRE

A **responsibility centre** is a segment of the company for which a manager is responsible. This allows the company to gather quantitative information regarding the segment in order to assess the performance of the manager. There are four types of responsibility centres:
Responsibility centre:

A responsibility centre is a sub-unit of the organization which is headed by a manger who is responsible for the activities carried out in that responsibility centre.

1. **Cost Centre**: A cost centre is an organizational sub-unit such as department or division, whose manager is held accountable for the costs incurred in that division. For example, a Power and Airco Department can be defined as a cost centre within the Operation and Maintenance Department in United Telecommunication Company. Manager of a cost centre is responsible for controllable costs incurred in the department, but is not responsible for revenue, profit or investment in that centre. A cost centre is a responsibility centre in which inputs, but not outputs are measured in monetary value.

2. **Revenue Centre:** A manager of a revenue centre is held accountable for the revenue attributed to the sub-unit. Revenue Centres are responsibility Centres where managers are accountable only for financial outputs in the form of generating sales revenue. A revenue centre's manger may also be held accountable for selling expenses such as sales persons' salaries, commissions, and order receiving costs.

3. **Profit Centre:** Profits are the excess of revenue over the total expenses. Therefore, the manager of profit centre is held accountable for the revenues, costs, and profits of the centre. A profit centre is a responsibility centre in which inputs are measured in terms of expenses and outputs are measured in terms of revenues.

4. **Investment Centre:** The manager of investment centre is held accountable for the division's profit and the invested capital used by the centre to generate its profits. Investment centres consider not only costs and revenues but also the assets used in the division. Performances of an investment centre are measured in terms of assets

turnover and return on the capital employed.

Financial Measures for Evaluating Division's Performance

The following financial measures are generally used to evaluate a division's performance:

(1) Variance Analysis:

Variance analysis may be
(i) cost variance analysis and (ii) revenue variance analysis. Performance of a cost centre can be evaluated using cost variance analysis, i.e., by comparing the actual costs with the standard costs. Standard costs display the costs-the cost centre should have incurred, given their actual activity. Any variance between the actual costs and standard costs require corrective action by the management. On measuring the performance (in terms of incurrence of costs) attempts are made to minimise the costs of cost centre.

Measuring the performance of cost centre only in terms of cost incurred without relating to benefits achieved by the centre is not considered fair by many companies. Therefore, most compa¬nies use both financial (cost) data and non-financial measures (units produced, number of customers attended, etc.) in performance measurement.

(2) Division Contribution Margin:

Division contribution margin is defined as the total division revenue less the direct costs of the division. This measure of performance emphasises the contribu¬tion of each division to overall company profit. In this measure, all revenues and costs traceable to the division are included and all common, indirect costs of the company are excluded.

(3) Division Net Profit:

The division net profit is the most appropriate profit measure for evaluation of a division's performance. This analysis can be used to judge the performance of a profit centre as both cost and revenue data measured in financial terms are available. Division net profit is obtained after considering related revenues, direct costs and a part of indirect costs incurred for the benefit of the division.

(4) Return on Investment (ROI):

This measure expresses divisional profit as a percentage of the firm's investment in the division and is similar to the widely accepted 'return on capital employed' measure used in the external analysis and interpretation of accounts.

$$ROI = \frac{\text{Divisional Profit}}{\text{Divisional Investment}}$$

$$= \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Investment}}$$

$$\downarrow \qquad\qquad \downarrow$$

$$= \text{(Net Profit margin)} \quad \text{(Asset Turnover)}$$