

CHAPTER-3

Material Management

CHAPTER OUTLINE

- 3.0 INTRODUCTION
- 3.1 IMPORTANCE OF MATERIAL MANAGEMENT
- 3.2 OBJECTIVES AND FUNCTIONS OF MATERIAL MANAGEMENT
- 3.3 EXPRESSION OF EOQ FOR INVENTORY CONTROL
- 3.4 ABC ANALYSIS
- 3.5 SAFETY STOCK, BUFFER STOCK
- 3.6 REORDER LEVEL of STOCK
- 3.7 FUNCTIONS OF STORES DEPARTMENT, DUTIES OF STORE
KEEPER STOREKEEPING
- 3.8 STORES LAYOUT
- 3.9 STORES RECORDS
- 3.10 CARDEX METHOD
- 3.11 PURCHASING DEPARTMENT
- 3.12 PURCHASING PROCEDURES
- 3.13 PURCHASE RECORDS
- 3.14 STORES EQUIPMENTS

3.2 INTRODUCTION

The need for materials management was first manufacturing undertakings. The servicing organizations started feeling the need for this control.

And now even non-trading organizations like hospitals, universities etc. have realized the importance of materials management. Every organization uses a number of materials. It is necessary that these materials are properly purchased, stored and used.

L.J. De Rose : "Material management is the planning, directing, controlling and co-ordination of all those activities concerned with material and inventory requirements from the point of their inception to their introduction into manufacturing process."

As per De Rose all those functions which start with the procurement of materials and end with completion of manufacturing are a part of material management.

N.K. Nair : "Material management is the integrated function of the various sections of an organization dealing with the supply of materials and allied activities in order to achieve maximum co-ordination."

N.K. Nair has emphasized the co-ordination of all those activities which are related to the efficient use of materials.

3.1 IMPORTANCE OF MATERIAL MANAGEMENT

Material management is a service function. It is as important as manufacturing, engineering and finance. The supply of proper quality of materials is essential for manufacturing standard products. The avoidance of material wastage helps in controlling cost of production. Material management is essential for every type of concern.

CHAPTER 3
3.3 Importance of Material Management may be summarized as Follows :

1. The material cost content of total cost is kept at a reasonable level. Scientific purchasing helps in acquiring materials at reasonable prices. Proper storing of materials also helps in reducing their wastages. These factors help in controlling cost content of products.

2. The cost of indirect materials also increases total cost of production because there is no proper control over such materials.
3. The equipment is properly utilized because there are no breakdowns due to late supply of materials.

4. The loss of direct labour is avoided.

5. The wastages of materials at the stage of storage as well as their movement is kept under control.

6. The supply of materials is prompt and late delivery instances are only few.

7. The investments on materials are kept under control as under and over stocking is avoided.

8. Congestion in the stores and at different stages of manufacturing is avoided.

3.2 OBJECTIVES AND FUNCTIONS OF MATERIAL MANAGEMENT

3.2.1 Objective of Material Management

The primary objective of a company is to reduce the cost that occurs while buying, storing, handling, transporting and packaging materials.

In addition material management has the following objectives :

X Maintains steady flow of materials ensuring that production does not get interrupted.

2. Adopts cost reduction techniques like MRP and value analysis to manage the total cost required for proper management of materials.

3. Provides right materials in the right quantity and right time to ensure the production of high quality product.

4. Implements scientific inventory control techniques to reduce investment.

5. Maintains records of stores and purchase etc.

6. Preserves stocks so that any loss of materials caused due to deterioration, pilferage and obsolescence can be kept at the minimum.

7. Improves producer-consumer relationship by producing high quality product.

8. Minimizes wastage of materials and therefore reduces operating costs.

9. Disposes surplus materials, metal cuttings and chips to economies on cost.

3.2.2 Functions of Material Management

Integrated approach to material management. The basic task of material management is to improve the productivity of materials for which it follows a systematic and integrated approach that involves various activities.

These are as follows :

1. Material planning required for production.
2. Make or buy decision regarding items to be predicted at home plant or obtained from the outside sources.

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Purchasing to provide constant supply of raw materials, parts and components to meet the target of production.

3. Receiving and inspection to collect materials and to inspect them to ensure their quality.

4. Storage to provide right place to store materials, use proper methods of preservation and to provide proper security against malpractices.

5. Inventory control to maintain optimum investment in inventories and to ensure supply of materials for production when required.

6. Distribution of materials to ensure the fastest and efficient supply of materials to the customers.

7. Transportation to ensure efficient movements of incoming and outgoing materials.

3.3 EXPRESSION OF EOQ FOR INVENTORY CONTROL

3.3.1 Economic Order Quantity

The inventory problems in which demand is assumed to be fixed and completely predetermined are usually referred to as the Economic Order Quantity (EOQ). By the order quantity, (we mean the quantity produced or procured during one production cycle) When the size of order increases the ordering costs (cost of purchasing, inspection etc.) will decrease whereas the inventory carrying cost (cost of storage, insurance etc) will increase. Thus in the production process there are two opposite costs; one encourages the increase in the order size and the other discourages.

EOQ is that size of order which minimizes total annual (or any other time period as specified by individual firms) costs of carrying inventory and cost of ordering.

The two opposite costs can be shown graphically by plotting them against the order size as shown in Fig. 3.1.

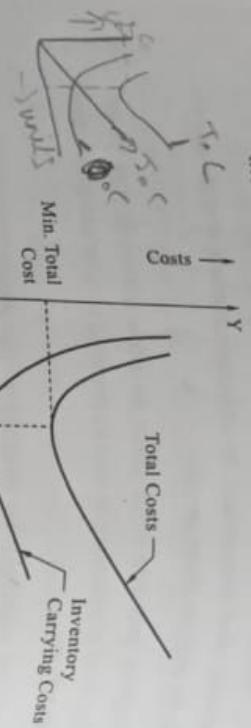


FIG 3.1 : Relationship Between Cost and Quantity

It is evident from above that the minimum total cost occurs at the point where the ordering costs and inventory carrying costs are equal.

3.3.2 Expression for EOQ

Before calculating economic order quantity, it is necessary to become familiar with terms like maximum inventory, minimum inventory, reorder point etc. Fig. 3.2 shows various quantity standards.

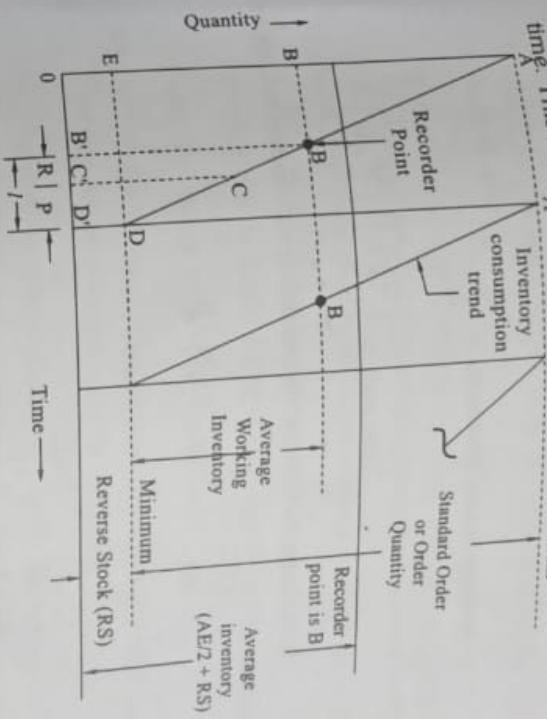


FIG 3.2 : Various Quantity Standard

Record point B indicates that it is a high time to initiate a purchase order and if not done in time the inventory may exhaust and even reserve stock utilized before the fresh stock arrives. From B' to D' it is the lead time $L = R + P$ and it may be ascertained on the basis of past experience and market condition.

Now let,

$$Q = \text{Economic lot size (EOQ)}$$

D = Demand rate units per year

A = Ordering cost; ₹/order

C = Unit cost; ₹/unit

H = Inventory carrying cost per item per year

TC = Total annual cost of operating the system (₹/year)
quantity shoots to its maximum value i.e., point A'(A = A').

No. of purchase orders to be finished = $\frac{D}{Q}$

$$\text{Total procurement cost} = \frac{D}{Q} \times A$$

$$\text{Average annual inventory} = \frac{Q}{2}$$

$$\text{Total cost} = \left(\frac{D}{Q} \times A \right) + \left(\frac{Q}{2} \times H \right)$$

To minimize the total cost differentiating with respect to Q , we have

$$\frac{d(TC)}{dQ} = ADQ^{-2} + \frac{1}{2}H = 0$$

(or)

$$Q^* = \sqrt{\frac{2AD}{H}}$$

$$\text{Differentiating once again } \frac{d^2(TC)}{dQ^2} > 0 \text{ for } Q = \sqrt{\frac{2AD}{H}}, \text{ i.e.,}$$

minimum when,

$$Q = Q^* = \sqrt{\frac{2AD}{H}}$$

The optimum value of Q has thus been obtained and is given

by $Q^* = \sqrt{\frac{2AD}{H}}$. Putting the value in total cost above, (Q^* is represented by Q^*) Minimum cost = $\sqrt{2AHD}$ = Min. total annual inventory cost.

The above formula for EOQ is known Wilson's Lot Size formula. The most classical of the inventory models was first proposed by Harris in 1915 and further developed by Wilson in the year 1928.

Some interesting insight may be obtained using this classical system.

- (a) If ordering cost is of high tendency, the optimal policy is to have high EOQ thus raising average inventory level.
- (b) If the value of H is high, the tendency will be to go for smaller lot sizes.

Assumptions of Basic EOQ Model and their Limitations :

Wilson's Square root model assumes :

- (a) Precise knowledge of demand of items and their usage rates are also assumed to be constant.
- (b) Delivery of units ordered is virtually instantaneous. This assumption is equivalent to saying that cost of not meeting the requirement for all the units ordered is infinite.
- (c) Price per unit, ordering and carrying costs are all assumed to be constant regardless of order quantity.
- (d) Stockout costs measured in terms of frustration, delay and embarrassment are assumed to be infinite.

With the above limitations, concept of EOQ is easy to understand and apply in practice. It is also scientifically developed by balancing two opposing costs (ordering cost and inventory carrying cost). The EOQ formula, takes care of most of the above limitations and its vital importance lies in its robustness.

3.10 ABC ANALYSIS

This is based on a very universal Pareto's Principle that high usage value items constitute a major part of the capital invested in inventories, whereas bulk of items in inventory having low usage value constitute insignificant part of capital.

In any large number we have significant few (insignificant many). For example, only 20% of the items may be accounting for the 80% of the total material cost annual. These are the significant (few which require utmost attention).

In ABC analysis (Always Better Control OR Always Be Careful System) it contemplates to classify all the inventory items into three categories based on their usage values. Items of high usage value but small in number are classified as 'A' items and would be under strict control. Items are large in number but require little capital and would be under simple control. Items of moderate value and size are classified as 'B' items and would attract reasonable attention of the management. The following distribution pattern is generally followed in ABC analysis:

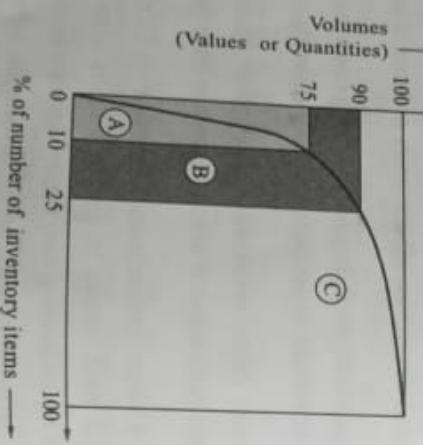


FIG 3.3 : ABC Analysis

A : 5 to 10% of the total no. of items accounting for 70% of the annual usage value (Rupee value).

CHAPTER 3

3.11

B : 10 to 20% accounting for about 15 to 20% of the annual usage value.

C : 70 to 80% of the no. of items accounting for 5 to 15% of annual usage value.

A very simple empirical way to classify items may be adopted as follows :

$$\text{Average annual usage value } \bar{X} = \frac{\text{Total material cost per year}}{\text{Total number of items}}$$

$$\text{A class items } \geq 6\bar{X}$$

$$\text{C class items } \leq 0.5\bar{X}$$

In between we have B class items.

Once the items are grouped into A, B and C category, we can adopt different degree of seriousness in our inventory control efforts. A class items require almost continuous and rigorous control whereas B class items may have relaxed control and C class items may be procured using simple rule of thumb.

3.5 SAFETY STOCK, BUFFER STOCK

1. **Safety Stock** : Safety stock is an extra quantity of a product which is stored in the warehouse to prevent an out-of-stock situation. It serves as insurance against fluctuations in demand.

2. **Buffer Stock** : Buffer stock is an excess amount of raw materials kept on hand to guard against any unplanned inventory shortages leading into the production process. The amount of buffer stock to retain involves balancing the cost of the extra inventory against the amount of production downtime that is avoided by having the extra inventory.

Safety Protection against Demand Spikes : Safety stock protects you against the sudden demand surges and inaccurate

3.12

market forecasts that can happen during a busy or slow season. It serves as a cushion when the products ordered take longer to reach your warehouse than expected. It ensures that your company doesn't run out of popular items and helps you keep fulfilling orders consistently.

Buffer Stock for Longer Lead Times : Even if your supplier has been consistent with delivering products on time, you've never faced a supply lag yet, this might not always be the case. Unexpected delays in production or transportation, such as a bottleneck at your suppliers end or a weather-related shipping delay, can cause your products to reach you later than expected. During these situations, safety stock acts as your defense against a possible stockout scenario and helps you fulfill your orders until your ordered stock is delivered to you.

3.6 REORDER LEVEL OF STOCK

Definition : The reorder level of stock is the fixed stock level that lies between the maximum and minimum stock levels.

At the reorder stock level, an order for the replenishment of stock should be placed.

In other words, the reorder stock level is the level of inventory at which a new purchase order should be placed.

The reorder level of stock is generally higher than the minimum level to cover any emergencies that may arise as a result of abnormal usage of materials or unexpected delay in obtaining fresh supplies.

Fixing the Reorder Level of Stock : The factors involved when fixing the reorder level of stock include :

- Materials consumption rate.
- Margin of safety.

Normal delivery time (or lead time). $R_d = M.d \times D$

- Minimum stock level to be maintain.
- Cost of storage and interest on capital used in materials.
- Provision for emergencies (Eg : Supply chain disruptions).

Formula for Reorder Level of Stock : The reorder level of stock is calculated using the following formula :

$$ROL = \frac{\text{Maximum consumption} \times \text{Maximum delivery time}}{\text{per day}}$$

Another formula that can be used is :

$$ROL = \frac{\text{Maximum Stock} + (\text{Average consumption during normal delivery time})}{\text{normal delivery time}}$$

3.7 FUNCTIONS OF STORES DEPARTMENT, DUTIES OF STORE KEEPER STOREKEEPING

3.7.1 Store

- A store refers to raw materials, work-in-progress and finished goods remaining in stock.
- The store is a service department headed by a store-keeper who is responsible for a proper storage, protection and issue of all kinds of materials.

- Store-keeping means the activities relating to purchasing, issuing, protecting, storing and recording of the materials.

- Store-keeping includes the receipts and issues of materials, their recording, movements in and out of the store and safeguarding of materials.

3.7.2 Functions of Stores Department

The stores function is important for many organizations and industrial concerns.

3.14 The Primary and Secondary Functions of Store are :

Primary Activities Related to the Stores Functions are:

1. To make available a balanced flow of raw components, tools, equipment and other stores required for operation.

2. To provide maintenance materials, spare parts and stores as required.

3. To receive and issue materials after physical inspection and proper identification.

4. To store and preserve materials.

5. To ensure safety and security of materials.

6. To arrange for collection, acceptance of scrap and other discarded materials for disposal.

Secondary Activities Related to the Stores Functions are:

1. Collection, inspection and acceptance.
2. Stores accounting.
3. Stock control.
4. Feedback information to materials control section.
5. Help in standardization and variety reduction.
6. Service information such as :
 - (a) Demand for materials and parts giving specification, quantities and deliveries required.
 - (b) Notification when stocks are running low.
 - (c) Details of deliveries rejected on inspection
 - (d) Certification of invoices for quantity and quality
 - (e) Particulars of anticipated changes in consumption

CHAPTER 3 Duties of items urgently required in case of breakdowns

(i) Procurement

- Procurement of items urgently required in case of breakdowns

(g) Listing

- Listing of obsolete, surplus and scrap materials for disposal.

3.7.3 Storekeeper

3.7.3 Storekeeper is a person who is the chief of stores and who is given the responsibility of store management.

- A storekeeper is responsible for safeguarding the materials and supplies in place until they are required for production activities.
- Storekeeper is responsible for safeguarding the materials and supplies in place until they are required for production activities.

3.7.4 Duties and Responsibilities of Storekeeper

Duties of storekeeper are as follows :

1. To exercise general control over all activities in Stores Department.
2. To ensure safe keeping both as to quality and quantity of materials.
3. To maintain proper records.
4. To initiate purchase requisitions for the replacement of stock of all regular stores items whenever the stock level of any item of store approaches the minimum limit fixed in respect thereof.
5. To initiate action for stoppage of further purchasing when the stock level approaches the maximum limit.
6. To check and receive purchased materials forwarded by the receiving department and to arrange for the storage in appropriate places.
7. To reserve a particular material for a specific job when so required.

3.16

8. To issue materials only in required quantities against authorisation notes/material lists.

9. To check the book balances, with the actual physical stock frequent intervals by way of internal control over wrong issuing, pilferage, etc.

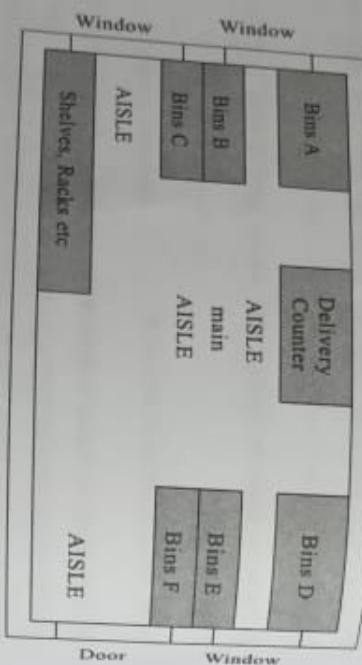
3.8 STORES LAYOUT

FIG 3.4 : Layout of Store Room

The following points should be considered while planning a layout :

- 1. Same storage space is kept reserved adjacent to store room for receipt and inspection of materials before storage.
- 2. It should be planned to achieve maximum utilization of cubic space and ease of operation.

- It should provide easy receipt, store and distribution.

6. It should be such that, the point of use is adjacent to each handling equipment.

7. It should be easy for location identification etc.

8. The place should be decided depending upon the type and characteristics of materials.

9. Extra space should be provided for easy pass of suitable handling equipment.

10. Main aisles should be provided for easy pass of suitable handling equipment.

11. Different types of materials are located in different points of the stores.
 - (a) Raw materials are stored close to the first operation.
 - (b) Finished goods are stored in the proximity of shipping areas.
 - (c) Bulk materials are stored near the point of use
 - (d) Inflammable materials are stored away from the main establishment

- (e) Supplies and tools may be stored in a location and central to the personnel.
- (f) Cement should be stored in a dry place
- (g) Iron and steel in huge quantities are stored in an open yard.

3.18

(h) Items which are used frequently are stored at land to the main entrance of the stores.

(i) Bulky and heavy items are stored at the bottom of racks and light materials are placed at the top of the racks.

(ii) Small sized articles should be stored in bins or racks with proper bin card attached to it.

3.9 STORES RECORDS

The records of materials and other goods received transferred are usually kept on bin cards and store ledger, issued following books and records are to be maintained separately for different material. These are maintained by store keeper.

1. Inward and Outward Register :

Inward Register : A register in which daily entries of railway lorry receipt received are entered is known as inward register. It is maintained by store keeper.

Outward Register : The railways receipt/lorry receipt of the outgoing material from the stores are entered in this book and it is known as *outward register*.

2. Stock Register :

(a) **Dead Stock or Non Consumable Register (NCR)** : In this the non consumable items like machinery, equipment furniture are entered. The details of the articles along with accessories are to be entered. All transactions of any item are to be entered in one page.

(b) **Consumable Register (CR)** : The transactions of consumable item like diesel oil, kerosene lubricants, paints, cotton waste etc. are entered in this book each item in a separate page.

(c) **Tool Register** : Tools used are entered in this register.

Rejected Register : The entries of materials received to empirical date wise in a register, after verification if the stores are made in stock register rejected items found suitable, will be entered in stock register. The incidental charges also are to be noted in the register.

Issue Register : In this all stores issued are entered date wise.

Stores Ledger : In this the issues, receipts, and balances of each item are maintained including their money value.

Surplus Stock Register : Some times purchases are made in large quantities. In such cases the material do not come into use for along time even up to 3 years. Such materials which do not come into use for along time are declared as surplus material and are registered in a separate register, known as *surplus register*.

Suspense Register : Items received by stores which are either defective or excess are to be placed in a "Suspense Cell", but not in bins. A separate register is maintained to enter these materials and is known as *suspense register*.

Condemned Article Register : Obsolete material or unserviceable material after use, authorized to be condemned by authorized persons are entered in a separate register which is known as *condemned article register*.

The material is shown as stock till it is disposed off.

Loan Register : Sometimes non consumable material is issued for a temporary period on loan by receiving a slip from the concerned. The register in which the entries of these materials are made is known as *loan register*.

- Reduces cost across the value chain.

- Provides an audit trail.

- Prevents thefts and frauds.

3.22.1 Steps in a Purchase Process

The steps in a purchase process may depend on your business requirements and objectives.

Some steps of this process are :

1. **Identify the Requirements :**
 - In the first stage, a business analyses and recognizes its needs for goods and services.
 - The procurement team describes the requirements depending on their feedback from employees, managers and researchers.
2. **Find and Select Vendors :**
 - After assessing a business's need, the next step is finding relevant vendors. Companies usually prefer using a request for information (RFI) document to compare vendors.
 - They send these documents early in the purchase process to get in-depth information about a vendor's ability to meet the company's demand.
3. **Submit Purchase Requisitions :**
 - The next step in the purchase process is requesting goods and services internally, and for this, a company submits a purchase requisition.
 - After getting approval from the departments that requests the goods and services, a company submits the purchase requisition.
4. **Send a Request for Proposal :**
 - The procurement department receives the purchase orders that get budget approval.
 - A company uses these purchase orders to create requests for quotations (RFQ) or requests for proposals (RFP).
5. **Negotiate the Contract and Cost :**
 - Negotiate the costs and contracts with suppliers with a winning bid, especially when orders are often recurring.
 - Often, it is possible to negotiate costs and contracts with suppliers with a winning bid, especially when orders are often recurring.
 - Suppliers with a winning bid, especially when orders are often recurring.
 - Focus on contacting the supplier and negotiating the contract's terms and conditions. Also, enquire whether the vendor is open to negotiating a price.
6. **Get order Approval :**
 - Often, a business might establish a line of credit with suppliers.
7. **Ship and Receive the Order :**
 - Before a business starts a transaction, it is essential for them to get approvals for the order. This step involves working with the upper management and accounting department to ensure the company has desirable funds to purchase the required products.
8. **Complete Invoice Approval and Payment :**
 - Businesses send orders that successfully match the terms and conditions of the contract for payment.
 - In case of any changes or modifications, the vendor submits another approval before payment. Upon approval, the vendor receives the due payment.
9. **Review Vendor Performance :**
 - Whether a company works with a supplier only onetime or makes recurring transactions, it is essential to review the performance of the vendors.

- Focus on reviewing them for quality and timeliness.
- Maintaining a record of these reviews can help a business choose a vendor for its next purchase.

3.13 PURCHASE RECORDS

Generally every purchase department maintain

1. Purchase requisitions.
 2. Purchase records.
 3. Suppliers's quotations.
 4. Comparative enquiry.
 5. Purchase order.
 6. Bills or invoice.
- 1. Purchase Requisitions :** The purchasing department places orders for materials according to the requisitions received from
- (a) Store keeper.
 - (b) Production shops, for special materials.
- 2. Purchase Enquiry :** Purchase enquiry is a letter sent by the purchase department to the supplier for quoting his prices for the supply of materials detailed therein.
- 3. Suppliers Quotation :** The supplier quotes his prices and the terms and conditions of the supply of materials to the purchase department indicating the quality, quantity, time of delivery, price, discount and other concessions, i.e., his reply to the enquiry.
- 4. Comparative Statement :** After opening and numbering all the quotations. A comparative statement is prepared. This helps to study the proposals in one sight. It gives all the details including alternative offers, terms and conditions of delivery etc.
- 5. Purchase Order :** A purchase order is a legal document a buyer sends to a supplier or vendor to authorize a purchase.
- 6. Bills/Invoice :** It is the statement of items received, and the cost of the materials. It contains the date of supply quantity, specification, suppliers address etc. The supplier usually despatches the invoice or bill along with materials for payment.

STORES EQUIPMENTS

To use the space economically, we should think in terms of cubic space. This can be possible only by use of racks and jutting devices. This is cheaper than buying an additional space and also helpful in identification and location of the materials. The equipment should be selected carefully involving low investment, and operating expenses, providing greater safety and maximum utilization of space. The following type of storage equipment is used according to their size, weight and shape.



1. **Racks for Stacks and Pipes :** It is a kind of storage fixture without partition having loaded frames. These are suitable storing steel bars, pipes steel sections, strips, sheets, plates etc.
2. **Open Type Shelves :** These are suitable for small boxes for components screws, ball bearings files, paints, drills etc.

3. **Closed Type Shelves :** These can accommodate packed goods and also suitable for loose items like bolts and nuts, hand tools, pipe fitting, machinery spares and other small components. These can be provided with proper locatable doors for security and protection from open dirt.
4. **Stocking Boxes or Bins :** These are generally made of sheet metal and are specially arranged to suit standard quality materials and have special internal fittings. They vary in size and shape to match particular material and handling methods.
5. **Pallets :** It is a piece of equipment especially designed to facilitate mechanical handling by form lift trucks and is used for storage and transportation purposes.

3.20 CARDDEX METHOD

Card system : The card system, also referred to as Cardex, is where products of the same type are stored together and assigned a card containing details about the product like its location, quantity, and product description. Every time there is a change in one of these factors, the card is then updated. For instance if a certain number of products are removed from the group, the quantity mentioned on the card is reduced. With a card system, every product is accounted for, along with the other products of the same type. This method makes it simpler to track, since data is calculated one group at a time, which is comparatively less than all the products being stored.

3.11 PURCHASING DEPARTMENT

All the organizations need an efficient and economic purchasing and procurement of its various supplies of materials from the suppliers. The materials management department has to perform this function of purchasing and procurement of materials very efficiently. Since 50% to 60% of sales turnover is spent on the purchase of various materials, the amount of profit earned on these sales very much depends how economically the materials are purchased and utilized in the organization.

Importance of Purchase : The proper sales of the product cannot be made unless the raw materials are purchased at low cost. For efficient production, the raw material should be purchased in a required quantity at right time from the right supplier.

3.11.1 Objectives of Purchasing Department

The following are the objectives of purchasing department:

1. To purchase the materials of right quality.
2. To purchase the material just at right time.

- 3. To purchase the material from known reliable supplier.
- 4. Right quality of material required for the production to be purchased at economical rate.

3.11.2 Functions of Purchasing Department

The following are the functions of purchasing department..

The function of purchasing can be stated as follows :

1. The requisition of material is necessary by proper authority to initiate its purchase.
2. To select proper supplier for the materials requisitioned, before placing an order.
3. To negotiate about the price of the material from the supplier and it will be purchased at the cheapest price.
4. The quality of material must be assured and should not be compromised with the cost of the material.
5. The material should be purchased of right quantity and right quality at proper time at the cheapest cost.
6. To set the proper purchase policy and procedure.

3.12 PURCHASING PROCEDURES

Purchasing Process : The purchasing process is a component of a procurement process that directly relates to the transactional activities between an organisation and its vendor. These activities can include receiving invoices, submitting purchase orders to vendors, receiving orders and completing payments. Using the purchase system, a business can easily complete a transaction.

Importance of a Purchasing Process : A purchase process is essential because of the following reasons :

- Ensures greater efficiency.
- Mitigates the vendor risk.

CHAPTER-4

Marketing, Sales and Feasibility Study

CHAPTER OUTLINE

- 4.0 INTRODUCTION
- 4.1 MARKETING FUNCTIONS
- 4.2 SALES DEPARTMENT
- 4.3 MARKETING CONDITIONS
- 4.4 DIFFERENTIATE SELLERS AND BUYERS MARKET
- 4.5 TYPES OF MARKETS
- 4.6 STEPS IN CONDUCTING MARKET AND DEMAND SURVEYS
- 4.7 ADVANTAGES AND DISADVANTAGES OF MARKET AND DEMAND SURVEYS
- 4.8 DIFFERENTIATE PRODUCT AND PRODUCTION ANALYSIS
- 4.9 IDENTIFY THE INPUT MATERIALS, I.E. BILL OF MATERIALS
- 4.10 CONCEPT OF COST
- 4.11 BREAK-EVEN ANALYSIS
- 4.12 EVALUATE ECONOMIC AND TECHNICAL FACTORS
- 4.13 PREPARATION OF FEASIBILITY STUDY
- 4.14 DIFFERENT PRODUCTS CURRENTLY IN DEMAND WITH MARKET OR INDUSTRY

4.0 INTRODUCTION

Marketing Concept and Definition : Marketing Management is the analysis, planning, implementation and management programmes designed to bring about desired exchange of target markets in order to achieve the objectives of organization. The programmes must be designed by using effective pricing, communication and distribution system.

Marketing Product Oriented Definitions are :

"Marketing comprises both buying and selling activities"

"Marketing consists of those efforts which affect transfers in physical distribution." - Pyle

"Marketing is the performance of business activities that direct the flow of goods and services from producer to consumer or user." - Clark and Clark

Marketing Customer Oriented Definitions are :

"Marketing is the delivery of a standard of living."

- Paul Mazar

"Marketing is the creation and delivery of a standard of living"

"Marketing is a total system of interacting business activities designed to plan, price, promote and distribute want satisfying products and services to present and potential customer."

- William J. Stanton

Sales Concept and Definition : Business functions can be broadly divided into three areas namely, finance, production and sales. Sales function is a very vital phase of the business and actually the major problem of today's business is not that

of the production but it is that of sales. With the great competition in every step of marketing, the problem of sales has outstripped the problems of production.

Definition : "Sales management is the term applied to the process of distributing goods from the producer to the ultimate user which consists of activities of advertising and exchanging goods for money, storing, transporting and handling and financing".

4.1 MARKETING FUNCTIONS

A marketing function is an act or operation or service by which original product and the final consumer are linked together.

F.W. Ryan lists 120 functional elements grouped into 16 categories. Then writers suggest from as few as eight to as many as twenty or thirty such functions. We can group these various functions of marketing into three major heads.

1. Merchandising functions.
2. Physical distribution functions.
3. Facilitating functions.

1. Merchandising Functions : The process of the passing of goods into the customers hands is called the function of exchange. This process can be divided into buying and assembling and selling.

(a) **Buying and Assembling :** Buying is the first step in the process of marketing. A manufacturer has to buy raw materials for production, a wholesaler has to buy goods to sell them to the retailer, a retailer has to buy goods to be sold the consumer. Buying involves transfer of ownership goods. Assembling means creation and maintenance of the stock of goods. Purchased from different sources. The goods have sometimes to be collected

- and assembled at one place. This is generally done by middlemen. This buying and assembling are two distinct processes. Involve related elements such as kind, quality, price, date of delivery and other terms and conditions.
- (b) **Selling** : Selling is important from the point of view of a business concern is achieved only through the sale of goods. Demand creation is a different job which is further involves creation of demand, market research, selection of channel for distribution.
2. **Physical Distribution System** : This function related to the process of transporting the goods from the place of seller to the place of buyer and includes two main functions.
- Transportation.
 - Storage and warehousing.
- (a) **Transportation** : Marketing system requires an economical and effective transportation system. A good system creation of place utility. It has resulted in the extent of markets regular supply lower price and improved services of the consumers.
- (b) **Storage and Warehousing** : When production is seasonal but consumption is perineal or when production is continuous but consumption is seasonal, storage becomes necessary. Storage involves holding and presenting of goods between the time of their production the time of their consumption.
3. **Facilitating Functions** : These functions make the market process easy and include financing, risk-bearing standardization, pricing, advertising, and sales promotion and market information etc.
- (a) **Financing** : It is very difficult to carry on marketing activities smoothly without the availability of adequate and cheap finance. Commercial banks, cooperative credit societies and government agencies arrange for short term finance, medium term finance, and long term finances. Trade credit is also one of the importance sources of finance.
- (b) **Standardization** : Standardization has now been accepted as an ethical basis of marketing. A standard is a measure that is generally recognized as a model for comparison. Standards are determined on the basis of color, weight, quality and other factors of a product. It facilitates purchase and sale of goods. Goods are purchased by brand name.
- (c) **Market Information** : Decisions on marketing are based on information regarding market conditions. Infact marketing research has now become an independent branch of marketing.
- (d) **Risk Bearing** : Marketing of goods involves innumerable risks due to theft, deterioration accidents etc. The most important factor responsible for the risk is fluctuation in prices. The other factors may be change in fashion competition in the market change in habits of the consumers, natural calamities etc.
- (e) **Pricing** : Pricing is also an important function. Price policy of the concern directly affects the profit element and therefore, it is successful functioning. In determining the price policy, several factors are to be borne in mind such as, cost of the product, competitors' prices. Marketing policies government policy or customary or convenient prices etc.

4.2 SALES DEPARTMENT

The sales department is also an important part of business, a wing through which income generates.

Selling : The process effecting the transfer, with a buyer and seller of goods and services that give such satisfaction that the buyer is pre-disposed to come back to the seller for more of the same.

Sales Management

: As per AMA (American Marketing Association) the sales management meant the planning direction, and control of personal selling, including recruiting, equipping, assigning, routing supervising, paying and motivating as these tasks apply to the personnel sales force.

4.2.1 Functions and Duties of Sales Management

1. Analyzing market thoroughly.
2. Studying consumer's psychology and demand.
3. Studying the condition existing in competitive firms.
4. Studying the market fluctuations.
5. Preparing market, sales and other relevant business forecasts.
6. Assisting in the preparation of marketing plan.
7. Preparing the sales budgets from the marketing plan.
8. Deciding on the distribution policy, methods and network.
9. Planning of the advertising campaign.
10. Ensuring suitable packing of the products.
11. Creating communications network for the department.
12. Developing systems for sales reporting and statistical analysis.

CHAPTER 4
Market Conditions

13. Providing technical, advisory and other services to the customer.
14. Determining sales staff requirements and handling the recruitment training and compensation of sales staff.
15. To explore newer markets for selling the company's product.
16. Ensuring effective coordination with production and finance department.
17. Striving continuously to lower selling costs to expand sales horizon and to improve the product of its wider acceptability.

4.3 MARKETING CONDITIONS

Market Conditions is the economic environment for business, investing and employment. Favorable conditions make it easier to start a business, grow, enjoy investment returns and find employment. Unfavorable conditions make markets more competitive and challenging.

The following are common types of market conditions :

1. **Financing :** The environment for securing financing. An economy goes through periods where defaults are low and liquidity is high that encourages banks to more easily lend money. In an economic contraction, defaults increase and banks tighten their lending standards.
2. **Interest Rates :** Interest rates are a fundamental type of market condition that impacts *return on investment* for all industries. When interest rates are low, it is easier for firms to expand profitably. A long period of excessively low interest rates can lead to irrational investments and capacity expansions.
3. **Asset Prices :** The prices of assets and investments such as land and stocks. This relates to business cycles, interest rates and the enthusiasm of investors for a particular investment at

a point in time. Historically, asset prices tend to go through boom and bust cycle of dramatic increases known as bubbles and dramatic declines known as crashes.

- 4. **Inflation & Deflation:** The rate of change in general levels. Deflation gives buyers incentive to delay purchases as things are always getting cheaper. Excessive inflation can cause holding as producers have incentive to delay sales as the price of goods rise. Both deflation and excessive inflation can cause a breakdown in normal economic activity that makes business and investment far more challenging.

- 5. **Capacity :** Industries go through periods where demand is higher than supply. Firms rush to add capacity and supply increases. This leads to a period where supply is far higher than demand. For example, a city that is experiencing an economic boom may have a shortage of restaurants. Restaurants will become unusually profitable and owners will rush to build new locations. This can lead to oversupply and a dramatic decline in profitability.

- 6. **Inventory :** Excess capacity in an industry can lead to high inventory levels. For example, if solar panel manufacturers have more capacity than global demand they may end up with solar panels sitting in warehouses. Excess inventory leads to discounting that may make an industry unprofitable for all firms.
- 7. **Competition :** The competitive environment in areas such as promotion, pricing, locations and product improvement. If you are able to discover a new product that customers need, you may face little competition for a short period of time. Most industries are intensely competitive such that firms need to establish and defend competitive advantages to survive.
- 8. **Business Models :** New business models that may represent an opportunity or a challenge for an industry. For example,

towards offering apartments and homes as short term rentals that challenges a hotel industry to adapt.

Consumer Demand : Consumer demand and related things such as customer needs, preferences and perceptions. For example, a startup fashion company that is able to capitalized on a fashion trend to grow rapidly.

Business Demand : Businesses go through periods of aggressive investment in new capacity and improvements. This can be followed by periods of cutbacks. Demand can occur at the level of an individual product or service. For example, businesses may rush to invest in a trendy technology followed by a period of disillusionment as the technology fails to immediately live up to its hype.

- 9. **Employment :** Supply and demand for employees by profession. When general employment levels are high it is far easier to find a job and more difficult to hire employees. As such, wages rise. This can also occur at the level of a particular skill set.
- 10. **Procurement :** The environment for procuring materials, parts and equipment. For example, an industry may go through a period where an essential material or part is in short supply with rising prices. This may be followed by periods of oversupply whereby prices quickly fall.
- 11. **Taxes & Regulations :** Governments greatly influence market conditions in areas such as trade, taxes and compliance. For example, a nation with burdensome business taxes and regulations may be less attractive to small businesses and investors. In some cases, regulations are a positive for an industry. For example, environmental regulations might benefit clean energy firms.

14. Stability : The political stability of a nation

example, a government that is predictable or reliable may be conducive to business and investors.

4.4 DIFFERENTIATE SELLERS AND BUYERS MARKET

Seller's Market : In this seller have command over the market, the demand will be more, but the sellers are very few and the seller is boss.

Suppose the quality products are made with reasonable price for satisfying the buyer when other producers are nil. Then the seller will have upper position and such a market is known as sellers market. The seller in this market is known as buyers market. The seller in this market is called Bear. In this Buyers are loyal to the seller. Profit is more and demand on this product can be created by artificial shortage. In this the seller is called bear.

Buyer's Market

In this buyers have their preference and are more. The buyers will have his hand in upper position and such a market is known as buyers market. Buyers are small and sellers are large and profits are minimum. Sellers has to agree the suggestion and bargaining made by the buyers view. The customer (or) buyer is a boss. In this the buyers is known as Bull.

Difference Between Sellers Market and Buyers Market :

S.No.	Seller's Market	Buyer's Market
1.	It is a market of oligopoly.	It is a partial monopolistic market.
2.	Buyers are large and seller's are limited.	Seller's are more and buyer's are small.
3.	Profit is large.	Profit is less.
4.	Seller is a boss.	Buyer is a boss.
5.	Seller is a 'Bear'.	Buyer is a 'Bull'.

6.	Buyer (or) consumer is loyal to the supplier.	Producer (or) sellers are loyal to the consumer.
7.	Scope for creating artificial scarcity and increasing prices.	No such scope.
8.	Competition is imperfect.	Perfect.
9.	More advertising costs.	Minimised advertising cost.
10.	Aim to satisfy the production.	Aim is to satisfy the needs of the customer.

4.5 TYPES OF MARKETS

There are more than thousand types of market structures but we focus on a few theoretical market types which mostly cover a high proportion of cases actually encountered in marketing world. They are :

- (a) Perfect competition. (Market)
- (b) Monopoly (Single)
- (c) Oligopoly. (Multiple)

4.5.1 Difference Between Monopoly, Oligopolies, Perfect Competition

S.No.	Basis	Perfect competition	Monopoly	Oligopoly
1.	Meaning	It is a market situation where a large number of buyer and seller deal in a homogeneous product at a fixed market.	It is a market situation where there is only one seller in the market selling a product with no close substitutes.	It is a market situation where the number of big sellers of a commodity is less and the number of buyers is more.
2.	Number of sellers	This market has a single seller.	This market has big sellers.	This market has number of sellers.

3.	Number of product	This market has homogeneous products.	There are no close substitutes in this market.	This market is homogeneous.
4.	Entry and Exit Firms	There is freedom in this market, firms and exit of old firms.	There is a restriction on the entry of new firms.	There is a ban on the entry of new firms in.
5.	Demand	This market has a perfectly elastic demand curve.	This market is less elastic and has a downward sloping demand curve.	The demand of an oligopoly market is uncertain as one cannot determine the reaction of other firms.
6.	Price	As each of the firms in this market is a price taker, the price is uniform.	As the firms in this market are price-maker, there is a possibility of price discrimination.	The price rigidity in this market as the firm can influence it.
7.	Selling Costs	In this market, no selling costs are incurred.	In this market, only informative selling costs are incurred.	In this market, huge selling cost is spent as it relies more on non-price competition.
8.	Level of knowledge	Perfect knowledge	Imperfect knowledge	Perfect knowledge

4.6 STEPS IN CONDUCTING MARKET AND DEMAND SURVEYS

4.6.1 Market and Demand Surveys

The elements of feasibility study

- Market Survey (M.S).
- Demand survey/market survey.

CHAPTER 4

Market Survey (M.S) :

- Meaning of Market :** We can define the market simply as all those buyers and sellers of a good or services who influences the price.
- A market survey is to be conducted by an entrepreneur as often as possible to predict changes in the demand. It helps the entrepreneur to ensure himself about the future sales of his proposed product. Marketing survey gives the information about competitors, traders and consumers.

Steps to Conduct Market Survey :

- Define your surveys objectives.
- Define the target audience for the market study
- Decide on the method.
- Collect the data.
- Study your competitors.
- Collect data from other sources.
- Analyze the data and present the results.

2. Demand Survey :

Meaning of Demand : The concept Demand refers to the quantity of good (or) service that consumers are willing and able to purchase at various prices during a period of time. It is to be noted that demand in economics is something more than desire the purchase through desire is one element of it.

Accurate demand survey is needed to produce required quantities at right time and arrange well in advance for various factors of production. So the estimation should be as realistic as possible.

Steps to Conduct Market Survey : Product demand analysis shouldn't be wild guessing. Its building a solid foundation of

knowledge and structuring your research on top of that development. Here are the steps :

- Define your market
- Assess the maturity of the market business cycle
- Identify your market niche
- Calculate market growth potential
- Evaluate the competition.

4.7 ADVANTAGES AND DISADVANTAGES OF MARKET AND DEMAND SURVEYS

4.7.1 Market Research Survey Advantages and Disadvantages

Market Research Survey Advantages : Here are the advantages of conducting market research,

- Managing Risks** : The first major advantage of conducting market research is improving your risk management strategy

Increasing Sales : Good market research is often the foundation for increasing your business' sales. Market research helps you to gain insight into your target customer's needs and preferences.

- Improving brand Recognition** : Another application of Researching your target market can improve your marketing and advertising strategy.

4. Measuring Brand Reputation

market research can help you gain insight into your brand's public reputation.

Market Research Survey Disadvantages : Here are some disadvantages of market research with considerations for how to overcome them :

1. Can be Expensive : Implementing a market research strategy can be expensive, especially for smaller businesses. Since there are many stages to the process, it can cost a lot of resources for businesses to hire an external company to conduct research on their behalf.

- Requires Significant Time Investment** : In addition to financial expenses, conducting market research often requires time to complete.
- May only Target a Small Population** : Another potential disadvantage of market research is how accurately it can represent your target customers. Researchers often struggle to access sample populations that accurately represent the majority of a target market.

- Need Personnel to Conduct Research** : Market research also requires businesses to find qualified personnel to perform the research.

4.7.2 Advantages and Disadvantages of Demand Forecasting

Advantages of Demand Forecasting :

- You'll Gain Valuable Insight** : Forecasting gets you into the habit of looking at past and real-time data to predict future demand. And in doing so, you'll be able to anticipate demand fluctuations more effectively.

- You'll Learn from Past Mistakes** : You don't start from scratch after each forecast. Even if your prediction was nowhere close to what ended up coming to pass, it gives you a starting point.

- It Can Decrease Costs** : When done right, anticipating demand will help you tweak your processes to increase efficiency all along the supply chain.

Disadvantages of Demand Forecasting :

1. Forecasts are Never 100% Accurate : Lets face it; its hard to predict the future. Even if you have a great process in place and forecasting experts on your payroll, your forecasts will never be spot on.

2. It Can be Time-Consuming and Resource-Intensive :

Forecasting involves a lot of data gathering, data organizing, and coordination. Companies typically employ a team of demand planners who are responsible for coming up with the forecast.

3. It Can Also be Costly : On a related note, hiring a team of demand planners is a significant investment. When you add to that the cost of using good quality tools, upfront costs can add up. But investing in advanced software, high-quality talent and solid forecasting processes is just that: an investment.
4.8 DIFFERENTIATE PRODUCT AND PRODUCTION ANALYSIS

Product concept refers to the idea that a company should make products that meet the needs and wants of its customers. In order to minimize costs and maximize profits, companies should focus on making products as efficiently and cheaply as possible. A production concept may not take into account the needs and wants of customers, while a product concept may not take into account costs and efficiency. Check out all the major differences between product and production concepts in this read below.

Difference between Product and Production Concept :

S. No.	Concept	Product Concept	Production Concept
1.	Definition	Focus on a product's features and benefits	Making a product or providing a service efficiently and cost-effectively.

2.	Philosophy	When a product offers benefits, customers are willing to pay more.	It is important for customers to find a product that is affordable and can be produced efficiently.
3.	Approach	Meeting customer's needs and wants with new and innovative products.	Increasing efficiency and reducing costs by improving existing products and production processes.
4.	Risk	New product development can be costly and may not be successful.	In addition to being less expensive and more likely to succeed, improving existing products and processes has a low risk.
5.	Example	With products like the iPhone and iPad, Apple introduces new and innovative products.	As part of Toyota's production philosophy, they constantly improve their manufacturing processes to reduce costs and increase efficiency, resulting in the development of the "Toyota Production System" or "Lean Manufacturing".

4.9 IDENTIFY THE INPUT MATERIALS, I.E. BILL OF MATERIALS

After completing the both product analysis and production analysis.

The entrepreneur should think of various inputs namely, *Money, material, labour*

1. Money : Money is essential need to start is enterprise. Sufficient reserve funds are required to survive different unexpected events during production stage. It is needed to procure the land, building, machinery, materials, for paying salaries to men, promoting the product and to meet the various selling and distribution expenses.

The money can be procured in two ways :

- (a) Own fund.
- (b) Borrowed fund.

Borrowed funds can be of from Govt. and Non-govt agencies such as SPC, IDBI, APSFC etc.

2. Materials : Since the production cost depends upon the cost of raw materials the efforts should be made to estimate.

- (a) The quantity required.
- (b) The time when they are required.
- (c) The place of availability.
- (d) The terms and conditions of the supplier.
- (e) Means of getting them without delay.

In other words the material should be purchased in right quantity, in right time, from right source of right quality with right price.

As a new entrepreneur one can approach the Govt. supporting bodies regarding the materials, like SIDO, APITCO, DIC etc.

3. Machinery : The factors to be considered are :

- (a) The process of manufacturing.
- (b) The raw material used.
- (c) Cost.
- (d) Users.
- (e) Quality of the product.

The entrepreneur may feel it difficult to purchase some high cost machines. In such cases he can obtain the same through NSIC on hire purchase basis. For this he has to join as a member in NSIC and should submit all relevant documents as required by NSIC.

4. Men : Manpower required are depends upon the size of the unit and complexity involved in the production process.

Experienced and trained personnel may be appointed to achieve the required rate of production. Certain employees may be deputed to undergo training programmes conducted by SSIDO. Proper motivation of employees is essential on the part of the management to achieve maximum results.

5. Management : The success of management depend on management. The management should be effective and efficient for successful business. Financial institutes while sanctioning loan also look into the managerial capabilities of the promoters. Technical personnel may be appointed to have increased production, productivity and reduced cost of production. The managers should be well trained in every field of business. Their qualification and experience should be adequate to be as good management.

4.10 CONCEPT OF COST

The concept of cost is a key concept in Economics. It refers to the amount of payment made to acquire any goods and services. In a simpler way, the concept of cost is a financial valuation of resources, materials, risks, time and utilities consumed to purchase goods and services.

- From an economist's point of view, the cost of manufacturing any goods and services is often said to be the concept of opportunity cost.

- With heightened competition in today's world, companies urged to make maximum profits. The company's behavior of its decision in maximizing earnings relies on the behavior of its decision in revenues.

- Besides the concept of opportunity cost, there are several other implicit costs, social costs, and replacement costs.

- Hence there are several different types of concepts which have been discussed in the following.

4.10.1 Types of Cost Concept

The idea behind the concept of opportunity cost is that the

cost of one item is the lost opportunity to do something else. For example, by being married to a person, one could lose the opportunity to marry some other person or by investing more capital in video games, one might lose the opportunity in watching movies. The concept of cost can be effortlessly comprehended by classifying the costs.

1. Based on the Nature of Expenses :

On the basis of nature, the following are the two types of cost.

• Outlay Costs :

The authentic payments undergone by an entrepreneur in employing input are known as outlay costs.

• Concept of Opportunity Cost :

It is the value of the next best thing you give up whenever a decision is made by you.

2. Classification in Terms of Traceability :

On the basis of traceability, the types of costs are,

(a) Direct Costs :

A direct cost is a cost that is related to the production method of a good or service. It is the opposite of an indirect cost.

- (b) **Indirect Costs :** Indirect costs are expenses that could not be traced back to a single cost object or cost source. They are also known as untraceable costs. However, they are extremely important as they affect the total profitability.

3. Concept of Costs in Terms of Treatment :

- (a) **Accounting Costs :** Accounting costs are direct costs. They are also known as hard costs. The entrepreneur pays the cash directly for obtaining resources for production. used by economists to compare one with another.

4. Classification based on the Purpose :

- (a) **Incremental Cost :** Incremental costs are the changes in future costs and that will occur as a result after a decision is made.

- (b) **Sunk Costs :** Sunk costs are the costs that cannot be recovered after sustaining. It includes the amount spent on conducting research and advertising.

5. Types of Cost Concept based on Players and Variability :

- (a) **Based on Payers :** Private cost implies the cost that is sustained when an individual produces or consumes something. The business person spends his/her own private or business interests. The social cost is the cost to an entire society that results from a news event or a change in the policies.

- (b) **In Terms of Variability :** As the term predicts, fixed costs don't change in the volume of output. These costs are constant even with an increase or decrease in the volume of services/goods produced or sold. Variable costs, in simple words, are a cost that varies according to the outcome of the output.

4.11 BREAK-EVEN ANALYSIS

A business is said to be break even when its income equals its expenditure. The break even point means the level of output or sales at which no profit or loss is made. It represents the position at which marginal profit or contribution is just sufficient to cover fixed overheads when production is just the break even the business makes a profit and exceeds production is below the volume production at break even and when the business makes a loss.

Breakeven Chart : It was one of the first synthetic tools that became available to production management and management accountancy. Breakeven Chart is a graphical representation of the relationship between cost and revenue at a given time and also to determine the breakeven point and profit potential under varying conditions of output and costs.

Breakeven chart consists of an ordinate (Y-axis) and an abscissa (X-axis). The ordinate represents a scale of rupees against which fixed costs, variable costs, and rupees of revenue can be measured. The abscissa represents the production volume (No. of units produced).

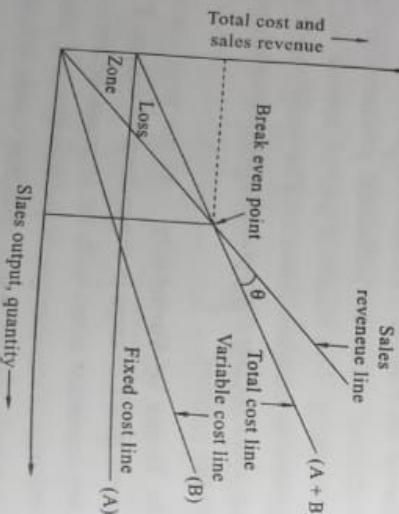


FIG 4.1 : Breakeven Chart

Terminology used in Breakeven Analysis :

1. **Fixed Cost :** The cost which is not related to day to day change of production. These costs are fixed and do not change with production. These costs includes factory rent, interest on the loans, insurance, depreciation charges, salaries of officers, etc.
2. **Variable cost :** The cost which are related to day to day change of production.

These costs are fluctuated with respect to the change of production quantity (Volume). These costs include cost of raw materials, direct wages, sales cost, taxes, etc.

3. **Margin of Safety :** It is the difference between the actual sales and the break even sales of any business firm.

$$\text{Margin of safety} = \text{Actual sales} - \text{Break even sales}$$

4. **Angle of Incidence () :** It is the angle at which sales revenue line cuts the total cost line. If the angle is large, it indicates that the profits are at high, on the other hand if the angle is small it indicates that less profits are being made.

5. **Contribution :** It is the difference between the selling price and variable cost.

$$C = S - V$$

Calculations of Break Even :

Let S = Sales price ✓

V = Variable or marginal cost ✓

F = Fixed cost ✓

P = Profit

$$S - V = P + F \quad \dots \dots \dots \quad (1)$$

$$P = O$$

At break even

Equation (1) reduces to

$$S - V = F$$

Let us multiply both sides of equation (2) by S

$$S(S - V) = F \times S$$

$$S = \frac{F \times S}{S - V} = \frac{F}{S - V} = \frac{\text{Fixed cost}}{\text{Contribution per unit}}$$

$$\begin{aligned} \text{Sales at B.E.P.} &= \frac{F \times S}{S - V} \\ (\text{Rupee - value}) \end{aligned}$$

$$\begin{aligned} \text{Sales at B.E.P. unit} &= \frac{\text{Fixed cost}}{\text{Contribution per unit}} \\ &= \frac{\text{Fixed cost}}{\text{Marginal profit per unit}} \end{aligned}$$

4.11.1 Uses of Break Even Analysis

Break Even Analysis helps to calculate :

1. Profit for different sales volumes.
2. Sales volume to get desired profit.
3. Selling price per unit for a particular BEP.
4. Sales volume to meet proposed expenditure.
5. Determining the optimum sales mix.
6. Determining sales required to offset price reduction.
7. In optimizations of profit.
8. Maximum utilization of resources.
9. Pricing the product.
10. Deciding optimum product mix.

11. Make or buy decision.
12. Product planning.

4.11.2 Limitations Break Even Analysis

1. Variable cost is assumed constant and have linear relationship with output. It is not correct. It ignores time lag between production and sales.

2. The sales price is assumed as constant. But in practice it varies sometimes prices will be even lowered to increase sales volume beyond a certain point.

3. Fixed costs are assumed as constant but they vary in long run.

4. Perfect segregation of costs as fixed and variable cannot be achieved. Hence the values arrived for BEP may not be correct.

5. Break even point can be found for each product through break even analysis. But the analysis does not indicate the optimum product mix. Hence has limited use for multi product companies.

4.12 EVALUATE ECONOMIC AND TECHNICAL FACTORS

Evaluation of Project : Mainly evaluation of a project can be performed in two areas they are :

1. Technical evaluation.
 2. Economic evaluation.
1. Technical Evaluation : This evaluation is to be prepared by an entrepreneur to give all technical abilities of the proposed project. This is needed for getting licences, various schemes, benefits, assistance under subsidy from Government. This includes information regarding

- (i) Manufacturing process.
 - (ii) Production capacities i.e., number of units that can be manufactured during a given period.
 - (iii) Machinery and equipment required.
 - (iv) Material inputs, like raw materials, semi processed components, tools and other auxiliary materials.
 - (v) Site selection and plant layout.
 - (vi) Infrastructure facilities.
 - (vii) Working conditions.
 - (viii) Scope for flexibility of the project.
- 2. Economic Evaluation :** Economic evaluation is the presentation of information regarding the profitability of the business/industry, of a proposed project. It is prepared by an entrepreneur and submitted to the financial institution for sanction of loan. It covers.
- (i) Size of enterprise, nature of product, expected quantity of production.
 - (ii) Amount of fixed capital required to start the enterprise.
 - (iii) Raw materials required and its total cost.
 - (iv) Expenses including salaries, maintenance selling overheads etc.
 - (v) Marketing facilities, sales turnover and expected profits.
 - (vi) Any priority and assistance offered by the government.
 - (vii) Cost of machinery, their useful life capacity etc.
- After keen study of the considerations, it is possible to estimate the profits and success of his project.

CHAPTER 4 PREPARATION OF FEASIBILITY STUDY

- Q13** A feasibility study, as the name suggests, is designed to reveal whether a project/plan is feasible. It is an assessment of the practicality of a proposed project/plan.
- A feasibility study is part of the initial design stage of any project/plan. It is conducted in order to objectively uncover the strengths and weaknesses of a proposed project or an existing business. It can help to identify and assess the opportunities and threats present in the natural environment, the resources required for the project, and the prospects for success. It is conducted in order to find answers to the following questions:
1. Does the company possess the required resources and technology?
 2. Will the company receive a sufficiently high return on its investment?
- Conducting a Feasibility Study Involves the Following Steps :**
1. Conduct preliminary analyses.
 2. Prepare a projected income statement. What are the possible revenues that the project can generate?
 3. Conduct a market survey. Does the project create a good or service that is in demand in the market? What price are consumers willing to pay for the good or service?
 4. Plan the organizational structure of the new project. What are the staffing requirements? How many workers are needed? What other resources are needed?
 5. Prepare an opening day balance of projected expenses and revenue.
 6. Review and analyze the points of vulnerability that are internal to the project and that can be controlled or eliminated.
 7. Decide whether to go on with the plan/project.

4.14 LIST OUT DIFFERENT PRODUCTS CURRENTLY IN DEMAND WITH MARKET OR INDUSTRY

The various products of demand related to various areas are as follows :

1. **Mechanical Engineering** : Flanges, Castings, Pipes, Jacks, Steel furniture, Agricultural appliances, Poultry equipment, Welding accessories, Bicycle parts, Gun - metal bushes, Auto leaf springs, Brakes, Radiators, Axles etc..
2. **Electrical / Electronics** : PVC wires, Domestic appliances, Motors, TV antennas, Amplifiers, Battery eliminators, TV boosters, TV tuners, Remotes, Cassette players, Phone sets, Computer components etc.
3. **Consumer Items** : Chemicals, Plastics, Paints, Ice creams, Powders, Soaps, Creams, Aerated water, Confectioneries, etc.
4. **Civil Engineering** : Bricks, Tiles, Refractories, RCC Grills, Cement Pipes, Sanitary ware, Asbestos sheets etc.

1. What is pro
2. List differen
3. Define reo
4. What is Ol
1. Write abou
2. Define ma
3. Explain th
- (a) Cont
- (b) Profi
4. Explain m

1. What are