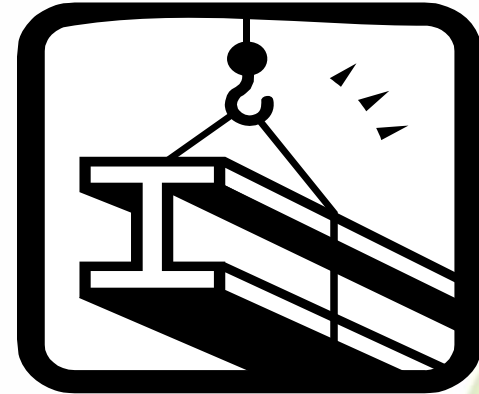


Chapter 1

- What is Inventory Management ?



Why study Inventory Management?

- Reduction of cost is main aspect to be competitive in market using inventory management
- Improvement of profits
- Improvement of efficiency of a firm
- Reduction of capital investment improves return on investment

What is Inventory?

- Inventory is stock of raw materials , component parts, supplies, semi-finished parts and finished products held by a business firm.
- Inventory is aggregate quantity of materials, resources and goods that are kept idle at a given point of time.

Classification of Inventories

- Raw Materials
e.g. Steel Plates, Steel Pipes etc.
- Bought out Components or sub assemblies
e.g. Pumps, Meters etc.
- Semi-finished goods
- Consumable Stores
e.g. Welding rods etc.

- Maintenance Spare Parts
e.g. Nuts, Bolts, Washers, O rings etc.
- Finished Goods Stored
e.g. Cars, Motor Cycles etc.

Functions of Inventory

- Avoid irregularities in supply
- Demands met in batches when product is not being produced
- To meet seasonal demand
- To take advantage of price discounts while buying items
- To maintain continuity to operations in production processes

Why hold Inventories ?

- To reduced freight and get quantity discounts in bulk purchases
- To keep flexibility in production process
- Finished goods inventory improves customer service
- To reduce ordering costs, stock out costs

Why don't hold Inventories ?

- To avoid carrying costs. E.g. Storage costs, Insurance, Taxes etc.
- To avoid waste of production capacity
- To avoid cost of coordinating production

Inventory System is..

- The set of policies and controls that monitors levels of inventory and determine what levels should be maintained, when stock should be replenished and what should be the order size.

Requirements for effective Inventory Management

- A system that keeps track of the on hand inventory and on order inventory
- Knowledge of lead time
- Knowledge of lead time data that indicate variations in lead time
- Estimates of inventory holding costs, ordering costs, shortage costs with reasonable degree of accuracy
- A system for classifying inventory items

Inventory Costs

- Costs associated with the purchase of inventory items. i.e. Cost of materials purchased.
- Costs on materials consisting of three basic costs – Ordering Costs, Carrying Costs, Shortage Costs

Inventory Analysis

- This is important in Materials and Production management's point of view
- Every firm carry inventory to meet customer demand, to avoid stock out of materials, to meet uncertainties in supply from vendors
- If a firm carries excessive inventories it is estimated that the average annual cost of carrying inventory would be approximately 30 % of the total value of inventory held by the firm
- Skillful inventory management and inventory analysis can make a contribution to a firm's profit.

Importance of Inventory

- Inventories allow for a smooth flow of production process by ensuring the adequate supply of raw materials are available to production lines.
- Inventories serve as buffers against uncertain usage.
- Reduces stock out situations.
- Inventories represent resources acquired at a cost, thereby locking up substantial working capital.

Types of Inventory

- Production Inventories
- MRO (Maintenance, Repair and Operating Supplies) Inventories
- In-Process Inventories
- Finished Goods inventories
- Cycle Inventory
- Safety Stock Inventory
- Anticipation Inventory
- Pipe-Line Inventory
- Fluctuation Inventory

Importance of Materials Management

- The amount of money spent on materials is often higher than that spent on other inputs put together.
- Materials offer considerable scope for reducing costs and improving profits.
- Materials add value to the products.
- Quality of finished products depends upon quality of materials used to produce them.
- The efficiency of a firm depends upon availability of right material at right time.

Efficiency of Firm - 6 R's

The efficiency of a firm depends upon the availability of

- Right Materials,
- In Right Quantity,
- Of Right Quality,
- At the Right Time,
- At the Right Price,
- From the Right Source of Supply

Manufacturing Strategies

- Engineer-to-order
- Make-to-order
- Assemble-to-order
- Make-to-stock

Activities in Planning and control of flow of materials through the manufacturing processes

- Production Planning
- Implementation and Control
- Inventory Management

Objectives of Manufacturing Planning and Control

- Maximize use of the firm's resources (machinery, labour etc.)
- Provide the required level of customer service