Ia-Inventory Management

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Inventory

- Inventory – idle stock of physical goods.
- Contains economic value.
- Held in various forms by an organization in its custody awaiting packing, processing, transformation.
- For use or sale in a future point of time.

- Inventory management by different names in different industries-
  - In IT Companies-VMI (vendor managed Industry)
  - In Automobile Industry-JIT (Just in time)
  - In Apparel Industry-ECR (Efficient consumer response).

Types of Inventories

- Raw Material- Basic inputs converted into finished goods.
- Work-in-progress- Semi finished goods needing some more work before final sale.
- Finished goods- Completely manufactured goods ready for sale.
- Supplies-Office & plant material necessary but not directly involved in the production process
- Tools & equipments
- Items being Transported
- Purchased parts & supplies

INVENTORY MANAGEMENT

Inventory management

- Is a science primarily about specifying the shape & percentage of stocked goods.

- The art & science of managing –to have the RIGHT PRODUCT, at the RIGHT TIME & PLACE, in exactly the RIGHT AMOUNT, at the BEST POSSIBLE PRICE.

  – Juhi Gonzales

- Making sure that items are available when customers call for it, but not to stock so much & ensure that inventory turnover goals are met”

Inventory management Includes:-

- Carrying costs of inventory
- Inventory forecasting
- Inventory valuation
- Inventory visibility
- Future inventory price forecasting
- Physical inventory
- Available space for inventory
- Asset management

Objectives of inventory management

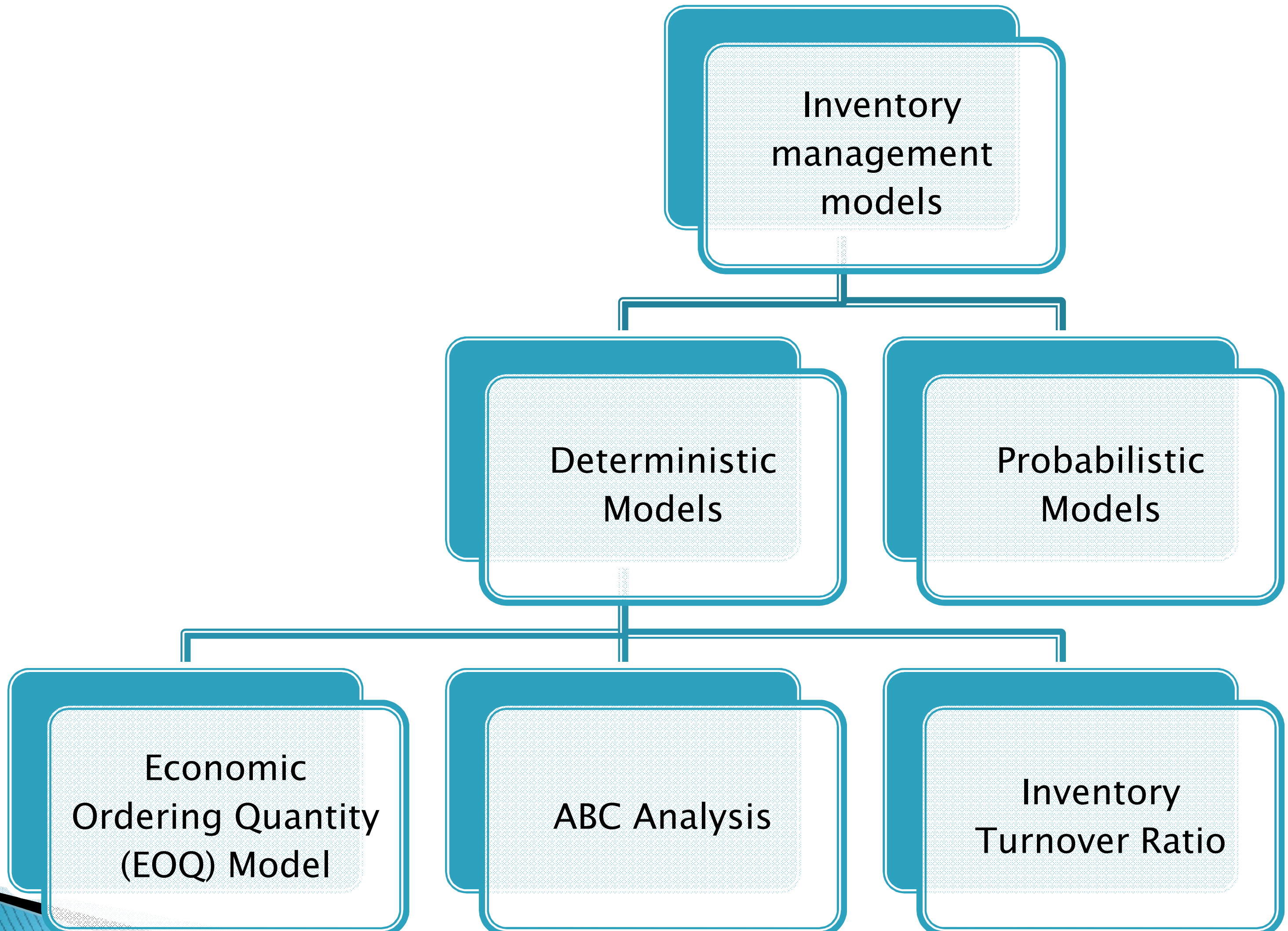
- separate various parts of the production process.
- take advantages of quantity discounts.
- split up the firm from fluctuations in demand & provide a stock of goods that will provide a selection .
- survive against inflation .

Advantages of Inventory Management

- Meet variation in Production Demand.
- Economies of Scale in Procurement.
- Take advantage of Price Increase & Quantity Discounts.
- Reduce Transit Cost & Transit Times.
- Long Lead & High demand items need to be held in Inventory.

INVENTORY MANAGEMENT

All models of inventory management are classified into two major types:



INVENTORY MANAGEMENT

Economic Order Quantity:

- Mathematical tool for determining the order quantity that minimizes the costs of ordering & holding inventory.
- Attempts to minimize total inventory cost by answering the following two questions.

1) **How much** should I order? (Economic Order Quantity)
2) **How often** should I place each order? (Cycle Time)

- **Goal** – minimize total inventory cost made up of <u>Holding</u> and <u>Ordering cost</u>

- <u>Holding cost</u> include the cost of financing the inventory along with the cost of physically maintaining the inventory.
- <u>Ordering cost</u> include the cost associated with actually placing the order.

Formulae of EOQ Model-

- <u>OPTIMAL RE-ORDER QUANTITY</u>

$\boxed{Q^* = \text{square root } [(2 \times D \times K)/(H \times C)]}$

Where:

D = annual demand in unit

K = ordering cost per order

H = carrying cost per unit

Q = reorder quantity

Q* = optimal reorder quantity

C = cost of an individual item

TC = total annual inventory cost

ABC Analysis

- ABC analysis stands 'Always better control'.
- 3 categories of inventory items namely A, B & C are categorized depending on their % of consumption.
- first introduced by an American firm-General Electric Company.
- <u>ABC classification of Inventory Items</u>-

Criteria	A type	B type	C Type
Quantity	10%	20%	70%
Annual Usage	70%	20%	10%
Control	Very strict	Moderate	Less
Ordering	Daily/weekly	Monthly	Yearly
Safety stock	Less	Moderate	High
Handled By	Senior officers	Middle management.	Fully delegated.

Inventory Turnover Ratio

- An efficiency ratio showing how effectively inventory is managed by comparing cost of goods sold with average inventory for a period.

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

- This measurement shows investors liquidity of a company's inventory & how easily a company can turn its inventory into cash.

- Creditors are particularly interested in this because inventory is often put up as collateral for loans. Banks want to know if this inventory will be easy to sell.

INVENTORY MANAGEMENT

Internal Controls

- Fence & lock the warehouse
- Count & Inspect all incoming inventory
- Tag all inventory.
- Segregate customer-owned inventory.
- Standardize record keeping for inventory picking.
- Sign for all inventory removed from the warehouse.
- Audit the bill of materials.
- Trace extra requisitions & returns
- Conduct a periodic obsolete inventory review.
- Conduct cycle counts.
- Investigate negative-balance inventory records.
- Record scrap transactions.

Audit Procedures

- **Cutoff analysis.**
  - Test last few receiving & shipping transactions prior to physical count & transactions immediately following it to see if are properly accounted .

- **Observe the physical inventory count:**
  - discuss the counting procedure
  - observe counts as they are being done
  - test count some of the inventory & trace their counts to the amounts recorded by the company's counters.
  - verify that all inventory count tags were accounted for.
  - If there are multiple inventory storage locations- test the inventory in those locations where there are significant amounts of inventory.
  - Ask for confirmations of inventory from the custodian of any public warehouse where the company is storing inventory.

- **Test high-value items**:
  - ensure high value are valued correctly & trace them into the valuation report that carries forward into the inventory balance in the general ledger.

- **Test error-prone items**:
  - If noticed an error trend in prior years for specific inventory items then test these items again.

- **Test inventory in transit**:
  - inventory in transit from one storage location to another at the time of the physical count-test for this by reviewing transfer documentation.

- **Test item costs**:
  - know where purchased costs in accounting records come from-compare the amounts in recent supplier invoices to the costs listed inventory valuation.

- <u>Review freight costs</u>:
  - Trace a selection of freight invoices through accounting system to see if there is consistent treatment.
- <u>Test for lower of cost or market</u>:
  - Follow the lower of cost or market rule
  - Compare a selection of market prices to their recorded costs.
- <u>Finished goods cost analysis</u>:
  - If a significant proportion of the inventory valuation is comprised of finished goods, then review the bill of materials.
  - Test them to see if they show an accurate compilation of the components in the finished goods items & correct costs.
- <u>Reconcile the inventory count to the general ledger :</u>
  - Trace the valuation compiled from the physical inventory count to the company's general ledger, to verify that the counted balance was carried forward into the company's

- Overhead analysis:
  - Verify if the client is consistently using the same GL accounts as the source for overhead costs,
  - whether overhead includes any abnormal costs (which should be charged to expense as incurred),
  - Test validity & consistency of the method used to apply overhead costs to inventory.

- Work-in-process testing:
  - Test how the client determines %, stage of completion for WIP items.
  - Examine the production/costing records
  - Hold discussion with personnel concerned
  - Obtain expert opinion where necessary

- Inventory allowances:
  - determine whether amounts recorded as allowances for obsolete inventory or scrap are adequate,
  - based on clients procedures for doing so, historical patterns, "where used" reports, & reports of inventory usage (as well as by physical observation during the physical count).

Audit Procedures

- <u>Inventory ownership</u>:
  - Review purchase records to ensure that inventory in warehouse is actually owned by the company (as opposed to customer-owned inventory or inventory on consignment from suppliers).

- <u>Inventory layers</u>:
  - Test the inventory layers recorded to verify that they are valid in LIFO & FIFO valuation.

- <u>Direct labor analysis</u>:
  - If direct labor is included in the cost of inventory then trace the labor charged during production on time cards or labor routings to inventory cost.
  - investigate whether labor costs listed in the valuation are supported by payroll records.

Management Representation

- Auditor should obtain from the management of the entity, a written statement describing in detail, the location of inventories, methods & procedures of physical verification & valuation.

- Representation letter does not relieve the Auditor of his responsibilities for performing Audit procedures to obtain sufficient appropriate audit evidence to form a basis for expression of an opinion on the financial information.

Software for Inventory Management

- Pos Maid
- Inflow Inventory Free Edition
- ABC Inventory Software
- BS1 Enterprise Accounting Free Edition
- Chronos e-Stock Card Inventory Software

Top 5 Best Practices for Inventory management

- Categorize your inventory
- Focus on demand forecasting
- Apply automation
- Look for underlying problems
- Consider alternative inventory models

Thank you…

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