

## Trends in Inventory Management

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### Introduction

Inventory is required to be maintained by every organisation properly whether it is trading firm or manufacturing organisation. Inventory may consist of raw material, work in process, finished goods. So obviously various costs are associated with the same resulting in cash outflow or cost to the organisation. So there arises a need for effective and efficient inventory management system which will keep control on various aspects of inventory management such as maintenance of inventory records, cost data, cost control measures decision and implementation, timely reporting, right decision making etc.

**Objectives:-** To Explain various aspects of inventory management used in the industry.

**Research Methodology:-** This research paper is prepared on the basis of secondary data collection. Books, newspapers, articles, journals, internet have been used. Reference of the same has been added at the end.

**Scope of Research:-** Inventory Management is applicable only to the production and trading organisations. Depending on size, nature of operations, industry to which it relates inventory management methodology may vary.

**Hypothesis of Research:-** Industries are keen in implementing various inventory management and cost control techniques.

### Accounting for Inventory

It includes maintenance of following records

**Bin card-** It is the card maintained at bin. Bin is the place where material is kept. It shows quantitative details of material received, issue, balance but not the monetary value as stores ledger shows the same. It is maintained by stores keeper.

**Stock Control Card-** It is the record keeping card maintained by stores department for every item of material recording receipt, issue, balance, order given, return etc.

**Stores ledger-** It contains quantitative as well as cost details of material received, issue, balance. It is prepared by costing department on the basis of goods received note and material requisition note.

### Accounting Standard on Valuation of Inventories

Valuation of inventory is required to be done as per AS 2 "Valuation of inventory" issued by ICAI. As per AS 2 inventory is categorised as Raw material, WIP, finished goods. Inventories are valued at cost price\* or net realisable value\*\* whichever is lower at the balance sheet date.

### Cost of Inventory -

1. Cost of purchase - Purchase price, taxes, freight inwards, expenses directly attributable to purchases less trade discount, rebate, duty drawback (tax/duty recovered from govt.)
2. Conversion cost of conversion of raw material into finished goods.
3. Exclusion from cost of inventory - Abnormal wastages of material, labour, other production overhead, interest and storage cost, administration and selling and distribution overheads.

### Net Realisable Value-

Estimated selling price less estimated cost of completion and estimated cost necessary to make sales.

### AS2 is not applicable to.....,

1. WIP arising out of construction contracts
2. WIP arising out of service providers
3. Financial instruments like shares, debentures.
4. Livestock, agricultural and forest products.

### Disclosure in financial statement:-

Accounting policy used including the cost formulae.

Carrying amount of inventory viz. wip, raw materials etc.

### Methods of Valuation of Inventories/Cost Formulae:-

The enterprise should use cost formulae based on nature of product and its operations. The cost formulae permitted by AS 2 can be explained as below.

**FIFO Method-** In This method we assume that items which are purchased first will be consumed/sold

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A. first. Thus stock will consist of latest purchases.

B. **Weighted Average Method-** As per this method total cost is divided by total units considering every fresh purchase periodically.

C. **Specific Identification Method-** Here costs are assigned to specific item of inventories or finished goods. This method can only be followed when items are not ordinarily interchangeable.

D. **Standard Costing Method -** This method takes into consideration determined costs depend on normal level of consumption of material, labour and indirect services. It is widely used in industries having non-repetitive processes eg. automobiles, boilers etc.

E. **Retail Method-** Here procedure used to calculate cost is normal retail selling price of year end stock less gross profit margin. eg. cutlery retail shop.

It should be noted that Standard cost method and retail method can be used only if it's impossible to determine cost of inventory using first 3 methods.

### I. Enterprise Resource Planning

ERP is process management software that allows an organisation to use a system of integrated applications to manage the business and automate many back office functions.

#### • Components of ERP:-

1. Software component-it consists of several modules such as finance, HR, supply chain management, CRM, SRM etc.

2. Process flow Component- it explains how information flows among the different modules within an ERP system.

3. Customer Mindset- When ERP system is to be implemented in the organisation, old ways of doing the work are required to be changed. It may lead to users' resistance to change.

4. Change Management- In ERP implementation, change needs to be managed at several levels- user attitude, resistance to change, business process changes.

#### • Benefits of ERP from inventory management view point are as under..

a) Reduce inventory costs resulting from better planning, online real-time tracking and forecasting of requirements.

b) Track actual cost of activities and perform activity based costing

c) Provide a consolidated picture of sales, inventory and receivables.

d) Decrease in vendor pricing by taking better advantage of quality breaks and tracking vendor performance.

e) Improvement in workflow and efficiency.

**Inventory Control, Valuation and Management:-** Various inventory control valuation and management techniques are summarised in tabular format.

Sir no	Techniques	Key areas
1	ABC Analysis	The items are categorised in following 3 categories. Category A quantity less than 10 % value more than 70 % Category B quantity less than 20 % value about 20 % Category C quantity about 70 % value less than 10 %
2	Determination of economic order quantity	<ul style="list-style-type: none"> <li>• It is the optimum level of quantity which minimises ordering, carrying and delivery cost of material.</li> <li>• <math>EOQ = \sqrt{2AO/C}</math></li> <li>• Carrying Cost = <math>EOQ \times \text{carrying cost per unit}/2</math></li> <li>• Ordering cost = <math>A \times \text{cost per unit}/EOQ</math></li> <li>• No of Orders = <math>\text{Annual Usage}/EOQ</math></li> </ul>
3	Use of control Ratios	<ul style="list-style-type: none"> <li>• It is ratio of quantity of input to production.</li> <li>• Inventory Turnover ratio = <math>\text{Cost of Material Consumed}/\text{cost of average stock during the period.}</math></li> <li>• Average stock = <math>\text{Opening Stock} + \text{Closing Stock} / 2</math></li> </ul>

4	Use of perpetual inventory records and continuous stock verification	continuous stock verification is done by taking different sections of stores in rotation.
5	Establishment of budgetary control systems.	Exact quantity of various inventories and the time when they require can be estimated in advance.
6	Two bin system	If material of any bin is finished and new order is placed, mean time quantity from another bin is purchased.
7	Setting of various stock levels	<ul style="list-style-type: none"> <li>•Minimum level- it is the minimum quantity which must be retained in the stock. Min. Level=Re-order level –(average consumption ×average lead time)</li> <li>•Maximum levels- It is a stock level upon which stock can be stored at any time. Maximum level=Re-order level + Re-order quantity–(minimum consumption ×minimum lead <u>time</u>)</li> <li>•Re-order level- this is the level when reached order needs to be replaced Re-order level=Maximum usage×Maximum lead time</li> <li>•Average Inventory level=Maximum level+ Minimum Level/2 or minimum level +1/2 Re-order quantity</li> <li>•Danger level- It's the level where normal issue of material is stopped and only emergency materials are issued. Danger level =Average consumption × lead time for emergency purchases.</li> </ul>

### Warehouse Management

The objective of store keeping is to ensure continuous supply of materials and other requirements at minimum cost. To achieve this objective good warehouse of organisation should possess the following essentials.

**a) Good layout-** Handling and movement of materials, employees and equipments should be easily possible.

**b) Classification and Codification of Material-** For easy access and care taking of material, it is better to classify material and store separately as per the group.

**c) Safety and Security of Material-** Protection is required from natural conditions such as dust, rust, humidity, heat, light, air flows etc. as well as from human beings such as theft, pilferage, misuse.

**d) Economy of Space and Expenses-** Warehouse arrangements should be such that maximum material is stored within available space. Warehouse expenses should be as minimum as possible because it's a non value added/support activity.

**e) Flexibility-** Warehouse arrangements should be flexible enough to change according to requirements for eg. purchasing large quantity of materials to take advantage of market conditions.

**f) Proper Furniture and Equipments-** They should be tailored made and capable of protecting and accommodating maximum material.

**g) Cleanliness and Neatness-** It includes frequent cleaning and use of pesticides, insecticides to avoid pests and insects.

### Recent Trends and Business Developments in Inventory Management and control:-

**1. JIT:-** JUST IN TIME is Japanese technique of inventory control. It streamlines production process. It is production and inventory management system focuses on purchasing and production of materials and parts as and when needed.

#### ▪ Costs and Benefits of JIT system:-

a. Reduction in storage cost

- b.Reduction in carrying cost
- c.Eliminates wastages
- d.Reduces inventories
- e.Eliminates non value added activities
- f.Reduction in overhead costs
- g.Better production and scrap reporting
- h.Increase in purchase cost
- i. Increase in ordering cost.
- j. Increase in stock out cost-inability to produce demanded quantity.

#### **2.JIT Approach for Reducing WIP Inventory-**

**KAN BAN CARD-** it is notification card which allows down stream machine to work according to upstream machine based on/ as per Kan Ban card placed/set between them. It's called as pull system resulting in zero WIP i.e. pile up of inventory.

**Working Cells-** Working Cells are the small cluster of machines run by single machine operator . It leads to no WIP built up and early detection of defective output and easy reconfiguration/repositioning.

**3.Back Flushing Technique in JIT-** In traditional/conventional costing system ,there is sequential tracking i.e. attribution of cost to raw material,WIP and then finished goods. But back flushing is a costing system which focuses on output of the organisation and then works back to attribute the cost to closing stock and cost of goods sold.

**4.Manufacturing Resources Planning/Material Requirement Planning(MRP):-** It is a computerized production scheduling system which takes the forwards schedule of finished product requirements(master production schedule) and translate it into number of subassemblies, components and raw materials required at each stage of manufacturing cycle so that adequate stock levels are maintained and materials are available when required. Data requirements to operate material requirements planning system is as under

- a)Master production schedule which denotes finished goods to be produced.
- b) Bill of materials (BOM)which denotes assemblies and components required to produce finished goods.
- c)The inventory file denoting material in hand
- d) Routine File specifying sequence of operations required to manufacture required finished goods.
- e)Master Parts file containing information regarding production time of subassemblies and components produced internally.

#### **Conclusion:-**

From the above discussion we can conclude that inventory is key asset of an organisation which plays an important role in success and survival of the business,hence require control measures because it consists of significant amount of outlay involved in it. Organisation can devise and implement requisite inventory system to control inventory cost and improve efficiency based on appropriate evaluation.

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