DEPARTMENT OF COMMERCE AND FINANCIAL STUDIES
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MBA (Financial Management)

Course Name: -WORKING CAPITAL MANAGEMENT

Course Code :FMSC3/ 21

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Unit –V/ Topic: INVENTORY MANAGEMENT

Scheme of Presentation

Inventory Management:

Need for inventories and the importance of its management,

Techniques for managing inventory,

Order Quantity,

E.O.Q. Model,

Order Point,

Safety Stock,

Analysis of Investment in inventory,

Selective Inventory Control,

A.B.C. analysis.

Bills Payable Management

INVENTORY MANAGEMENT

- Inventory management is concerned with keeping enough product on hand to avoid running out while at the same time maintaining a small enough inventory balance to allow for a reasonable return on investment.
- Property inventory management is important to the financial health of the corporation; being out of stock forces customers to turn to competitors or results in a loss of sale.

Source: Working Capital Management –Text and Cases, V.K. Bhalla, Seventh Revised Edition.

THE FUNCTION OF INVENTORY

- Some functions of the firm, such as the purchase of raw materials, processing, and having finished goods available for sale, have a sequential, physical dependency maintenance of inventories allows the firm to decouple these functions so that each can be planned, scheduled, and operated independently for retail firms, inventory provides customers with selection choices and decouples the purchasing function from the selling function.

INVENTORY MANAGEMENT

'Inventory Management'

- Inventory management refers to the process of ordering, storing and using a company's inventory: raw materials, components and finished products.

Inventory:

- There are three types of inventories: raw materials, work-in-progress, and finished goods.
- Raw materials are materials and components that are inputs in making the final product work-in-process, also called stock-in-process, refers to goods in the intermediate stages of production finished goods consist of final products that are ready for sale.

Inventory cost

i. Ordering cost
ii. Carrying cost
iii. Capital cost
iv. Store space cost
v. Inventory service cost &
vi. Inventory risk cost

Need for Inventories

- ‘Process or movement’ inventories are required because it takes time to complete process/operation and to move products from one stage to another.

- Average output Time required for the

Of the process x process(or time required

(or average usage at end Movement)

Movement)

Importance of Inventory Management:

1. **Raw Material**s: Goods that have been purchased and stored for future production known as raw material.

2:- **Semi-manufactured products**: These are those products which are being processes in order to produce the final product. But the production process has not been completed yet.

3:- **Final Products**:- These are the final products which are sold to the customers for consumption purpose.

4. **Effective Inventory Management** is all about knowing the output of finished products manufactured by the comany. The stock management system will help in handling sales, purchasing and stock control. As there is a huge range of control solutions at various online manufacturing websites that eventually fits the requirement of all purchases and seller. The handling of **stock control, Inventory management** and **stock management** require best practices that provide multichannel -e-commerce.

Techniques for Inventory Management

The following eight techniques to will help you improve your inventory management—and cash flow.

i. Set Par Levels. ...
ii. First-In First-Out (FIFO) ...
iii. Manage Relationships. ...
iv. Contingency Planning. ...
v. Regular Auditing. ...
vi. Prioritize With ABC. ...
vii. Accurate Forecasting. ...
viii. Consider Dropshipping.

Inventory Control Techniques:

It refers to the techniques for efficiently maintaining the flow of materials.

- **The following are the important inventory control techniques:**

a) Economic order quantity

b) Fixation of stock levels

c) ABC Analysis

d) Just in Time (JIT)

Inventory Costs:

Besides purchase costs, inventory costs are of two types: Ordering costs and carrying costs.

Ordering Cost:

These costs include variable costs associated with acquisition of materials, like transportation costs, inspection costs, etc. This cost is also known as set-up cost.

Carrying Costs:

These costs include costs associated with holding the inventory such as storage charges, interest on capital, etc.

iii. Economic Order Quantity (EOQ):

Economic Order Quantity (EOQ) is one of the important techniques of inventory management. EOQ represents that level of inventory which minimizes the total inventory cost.

The formula for calculating EOQ is given below:

$$EOQ = \sqrt{2QA / K}$$

Where, Q = Annual requirement or Production,

A = Ordering Cost per order, and

K = Carrying Cost per unit per Year.

Stock Levels:

Efficient inventory management requires an effective stock control system one of the important aspects of inventory control is stock level. Level of stock has a significant bear-ing on the profitability over-stocking requires large capital investments whereas under-stocking affects flow of the production process.

Re-order Level:

It is the level which indicates when to place an order for purchase of raw materials. This is also termed as the ordering level. Following formula is used for calculating Re-order level:

Reorder Level = Lead time x Average usage

Or = Minimum stock level + (Average consumption x normal delivery period)

Or = Safety stock + Lead time consumption

= Maximum consumption x Maximum reorder period

Minimum Stock Level:

It indicates the minimum level of stock below which the quantity of an item should not be allowed to fall. This level is also called safety stock or buffer stock level. It is calculated by using following formula:

Minimum Stock Level = Re-order Level – [Normal consumption x Normal re-order period]

Maximum Stock Level:

The maximum stock level indicates the maximum level of inventory beyond which the quantity of any item is not allowed to increase in order to ensure that unneces-sary working capital is not blocked.

Source:https://www.accountingcoach.com

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It is calculated by using following formula:

Maximum Stock Level = Reorder level + Reorder quantity – (Minimum consumption X Minimum reorder period)

Or = Economic Order Quantity + Safety Stock

Average Stock Level:

Average stock level is fixed by taking the average of maximum stock level and minimum stock level.

Average Stock Level = 1/2 (Maximum Stock Level + Minimum Stock Level)

Source:https://www.accountingcoach.com

The following information is available in respect of a particular material:

Reorder Quantity: 3,600 units

Maximum Consumption: 900 units per week

Minimum Consumption: 300 units per week

Normal Consumption: 600 units per week

Re-order period: 3 to 5 weeks

Calculate (i) Re-order level

(ii) Maximum stock level

(iii) Minimum stock level

(iv) Average stock level

Source:https://www.accountingcoach.com

Assumptions of EOQ Model

The following are assumption of EOQ Model

1. Only one product is involved
2. Annual demand requirements known
3. Demand is even throughout the year
4. Lead time does not vary
5. Each order is received in a single delivery
6. There are no quantity discounts

What is safety stock?

Safety stock is an additional quantity of an item held in inventory in order to reduce the risk that the item will be out of stock safety stock acts as a buffer in case the sales of an item are greater than planned and/or the supplier is unable to deliver additional units at the expected time there are additional holding costs associated with safety stock. However, the holding costs could be less than the cost of losing a customer if the customer's order cannot be filled.

Safety stock is a term used by logisticians to describe a level of extra **stock** that is maintained to mitigate risk of stockouts (shortfall in raw material or packaging) due to uncertainties in supply and demand adequate **safety stock** levels permit business operations to proceed according to their plans.

ABC Approach

- One of the most widely recognized concepts of inventory management is referred to as ABC inventory control the maintaining appropriate control according to the potential savings associated with a proper level of such control.
- For Example: an item having an inventory cost of Rs. 10,000 has a much greater potential for saving of expenses related to maintaining inventories than an item with a cost Rs. 20. the ABC approach is a means of categorizing inventoried items into three classes “A” “B” and “C” according to the potential amount to be controlled’ .

- When items have been classified., appropriate control techniques are developed for each class of inventory a items justify the use of price control techniques, where “C” items should be controlled by mean of general control techniques.

ABC Analysis:

ABC Analysis is one of the important inventory control techniques. In a big manufacturing concern it is not always possible to pay equal attention to each and every raw material. In such cases raw materials are classified according to their value so that proper con-trol may be exercised on materials having high value. ABC Analysis is an analytical technique that tries to group materials into three categories on the basis of cost involved.

The categories are:

A – High value materials

B – Medium value materials

C – Low value materials

- Items that are high value and less than 10% of the total consumption of inventory are grouped under Category A. This category requires most attention. Category C consists of low cost items but having large number of units. Category B lies between Category A and Category C. ABC analysis can be represented as:

The following steps are to be adopted for computation of ABC analysis:

i. Compute the consumption value of each item of material.

ii. Rank them as per their consumption values.

iii. Classify them in A. B and C categories as per their consumption values.

Accounts Payable Management

- Payables or creditors are one of the important components of working capital. Payables provide a spon-taneous source of financing of working capital payable management is very closely related with the cash management effective payable management leads to steady supply of materials to a firm as well as enhances its reputation.
- It is generally considered as a relatively cheap source of finance as suppliers rarely charge any interest on the amount owed.

Just in Time:

Just in time (JIT) inventory control system was developed by Taiichi Okno of Japan and was first introduced in Toyata Manufacturing Company of Japan. So it is also known as Toyata Production Method the basic idea behind this system is that a firm should keep minimum level of inventory on the assumption that suppliers will deliver the raw materials as and when required. This system tries to make inventory carrying cost as zero.

- Three important elements of JIT are Just in time purchasing, just in time production and just in time supply just in time purchasing, just in time production and just in time delivery can be effectively applied through adoption of advanced manufacturing technology.

Inventory Control Models

- Given the significance of the benefits and costs associated with holding inventories, it is important that the firm efficiently control the level of inventory investments. A number of inventory control models are available that can help in determining the optimal inventory level of each item.
- These models range from the relatively simple to the extremely complex their degree of complexity depends primarily on the assumptions made about the demand or use for the particular item and the lead time required to secure additional stock.

- In the “classic” inventory models, which include both the simpler deterministic models nd the more complex probabilistic models, it is assumed that demand is either uniform or dispersed and independent over time.
- In other words, demand is assumed either to be constant or to fluctuate over time due to random elements.

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- The simpler deterministic inventory control models, such as the economic order quantity (EOQ) model.
- Assume that both demand and lead times are constant and known with certainty.
- Thus, deterministic models eliminate the need to consider stock outs.
- The more complex probabilistic inventory control models assume that demand, lead time, or both are random variables with known probability distributions.

Inventory Turnover Ratio

i) Inventory Turnover Ratio: Cost of goods sold / average total inventories. The higher the ratio,

more the efficiency of the firm

ii) Work in process turnover ratio =

Cost of goods sold / Average inventory of finished goods at costs

Here, in this ratio also higher the ratio, more the efficiency of the firm.

iii) Weeks inventory of finished goods on hand → Finished Goods / Weekly sales of finished goods. The ratio reveals that the lower the ratio, the higher the efficiency of the firm

iv) Weeks raw material on order → Raw material on order / Weekly consumption of raw material.

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