

Lecture –9

Inventory Management



● Model Questions

DEFINITION OF INVENTORY

Inventory is a stock of any item or resources used in an organization. An inventory system or management is the set of policies and controls that monitors levels of inventory and determines what levels should be maintained, when stock should be replenished and how large orders should be.

According to *Jain and Agarwal* "Inventory in a wider sense is defined as idle resources of an enterprise, however it is commonly used to indicate materials, raw materials, finished, semi-finished, packing, spares and others - stocked in order to meet an expected demand or distribution in future."

FUNCTIONS OF INVENTORY MANAGEMENT

Inventories serve a number of functions. Among the most important are the following:

- To meet anticipated customer demand,
- To smooth production requirements,
- To decouple components of the product - distribution system,
- To protect against stock-outs,
- To take advantages of order cycles,

- To hedge against price increases or to take advantage of quantity discount,
- To permit operations

01. To meet anticipated customer demand:

Inventories are referred to as anticipation stocks because they are held to satisfy expected average demand.

02. To smooth production requirement:

Firms that experience seasonal patterns in demand often build up inventories during off-season to meet overly high requirements during certain seasonal periods. Companies that process fresh fruits and vegetables deal with seasonal inventories.

03. To decouple components of the product-distribution system:

Historically, manufacturing firms have used inventories as buffers between successive operations to maintain continuity of production that would otherwise be disrupted by events such as breakdowns of equipment and accidents that cause a portion of the operation to shutdown temporarily.

04. To protect against stock out:

Delayed deliveries and unexpected increases in demand increase the risk of shortages. The risk of shortages can be reduced by holding safety stocks, which are stocks in excess of average demand to

compensate for variabilities in demand and lead time. (Difference between ordering and receiving times).

05. To take advantages of order cycle:

To minimize purchasing and inventory cost, a firm often buys in quantities that exceed immediate requirements. This necessitates storing some or the entire purchased amount for later use. Similarly, it is usually economical to produce in large rather than small quantities.

06. To hedge against price increases or to take advantages of quantity discount:

Occasionally, a firm will suspect that a substantial price increase is about to be made and purchase larger than normal amounts to avoid the increase.

07. To permit operations:

The fact that production operations take a certain amount of time means that there will generally be some work-in-process inventory. In addition, intermediate stocking of goods - including raw materials, semi-finished items and finished goods at production sites as well as goods stored in warehouse - leads to pipeline inventories throughout a production-distribution system.

FACTORS CONSIDERED FOR EFFECTIVE INVENTORY MANAGEMENT OR REQUIREMENTS FOR EFFECTIVE INVENTORY MANAGEMENT

Management has two basic functions concerning inventory. One is to establish a system of keeping track of items in inventory and the other is to make decision about how much and when to order. To be effective, management must have the following: -

1. Inventory counting systems:

It can be periodic or perpetual. Under a periodic system a physical count of items in inventory is made at periodic intervals in order to decide how much to order of each item.

2. Demand forecast:

Inventories are used to satisfy demand requirements. So it is essential to have reliable estimates of the amount and timing of demand. Similarly, it is essential to know how long it will take for orders to be delivered.

3. Lead time information:

Managers need to know the extend to which demand and lead-time, might vary, the greater the risk of a shortage between deliveries.

4. Cost information:

Three basic costs are associated with inventories (holding cost, ordering cost and shortage cost), so effects of these costs should be considered during inventory management.

5. Classification system:

An important aspect of inventory management is that items held in inventory are not of equal importance in terms of amount invested, profit potential, sales or usage volume or stock out penalties. It would be unrealistic to devote equal attention to each and every item.

INVENTORY COSTS / COST ASSOCIATED WITH INVENTORY

The costs associated with inventory are as follows:

1. Holding or carrying costs
2. Ordering costs

3. Shortage costs

01. Holding or carrying costs:

It relates to physically having items in storage. This is cost to carry an item in inventory for a length of time, usually a year. Holding costs include interest, insurance, taxes, depreciation, obsolescence, deterioration, spoilage, pilferage, breakage, and warehouse cost.

02. Ordering costs:

It is the cost of ordering and receiving inventory. These include determining how much is needed, preparing invoices, shipping cost, inspecting goods upon arrival for quality and quantity and moving the goods to temporary storage.

03. Shortage costs:

It results when demand exceeds the supply of inventory on hand. These costs can include the opportunity cost of not making a sale, loss of customer goodwill and similar costs.

Model Questions:

1. What is inventory?

2. Discuss the functions of inventory management.
3. What are the requirements for effective inventory management?
4. What are the costs involved with inventory? Discuss.

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