

2.4: Reasons for Maintaining Inventory

Why It's Important to Maintain Inventory

Organizations maintain inventory for various reasons, including:

- *In-Transit Inventory*: Inventory may be held simply because it is in transit and has not yet arrived at the facility. Since payment has been made for these goods, they are counted as part of the organization's inventory, referred to as in-transit inventory holding.
- *Preventing Stock-Outs*: One of the most common reasons for keeping inventory is to protect against stock-outs. When customers request to purchase a product, organizations aim to have sufficient stock available to meet the demand.
- *Leveraging Quantity Discounts*: Suppliers may offer quantity discounts for larger purchases. Although the organization may not immediately require the additional units, they may choose to purchase in bulk to take advantage of these discounts, resulting in excess inventory.
- *Smoothing Production Requirements*: Inventory can help organizations smooth out production requirements when demand fluctuates. During periods of low demand, they may produce more and stockpile inventory to avoid ramping up production excessively when demand increases again. This approach helps maintain a steadier production level, which is often more cost-effective.
- *Mitigating Operational Disruptions*: Maintaining inventory can help organizations cover for disruptions in specific production processes. In case of operational issues, having sufficient inventory on hand can prevent complete shutdowns or delays until the problem is resolved.
- *Cost Considerations*: In all these scenarios, organizations must carefully weigh the holding costs of inventory against other costs. For instance, if holding costs are high, they may prefer to risk occasional stock-outs rather than carrying excessive inventory. Alternatively, they may forgo supplier discounts if the total savings do not justify the additional inventory holding costs.
- *Inventory Management Models*: In inventory management, demand is classified as either known or steady versus uncertain. Several factors influence the choice of inventory model, including lead time and review time.
- *Lead Time*: Lead time refers to the duration between placing an order with a supplier and receiving the ordered goods. This factor plays a crucial role in determining the appropriate inventory model and ensuring timely replenishment.
- *Review Time*: Review time pertains to the frequency at which inventory levels are monitored. Two common approaches exist:
- *Continuous Review*: In this method, an information system continuously tracks inventory levels and triggers a reorder notification or automatically places an order when stock reaches a predetermined reorder point. This automated process eliminates manual intervention and ensures timely order placement with pre-established suppliers.
- *Periodic Review (Fixed Order Interval)*: Alternatively, inventory levels can be reviewed at fixed intervals. At the end of each interval, if the stock falls below a predetermined maximum level, an order is placed for the difference between the current stock and the maximum level. This approach allows for periodic adjustments based on actual demand patterns.
- *Additional Considerations*: Other factors, such as product perishability or obsolescence, may further complicate inventory models. For perishable items like food products, the product's lifespan must be carefully considered to avoid overstocking and subsequent waste or loss of inventory value due to expiration or obsolescence. Failing to account for these factors can result in significant financial losses.

While the above factors are fundamental to inventory management models, additional variables specific to an organization's operations or product characteristics may necessitate more intricate modeling approaches to optimize inventory levels and minimize costs.

Source

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