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IMPORTANCE OF INVENTORY MANAGEMENT IN QUALITY CONTROL

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ABSTRACT

Quality has its meaning in all the stages of the production. It includes various factors which effect quality. The Material plays key role in quality control. The main objectives of quality control are evolution, optimal quality judgment, productivity and quality improvement, and process conformity judgment.

An efficient inventory management will determine a) what is to be purchased b) how much to purchase c) from where to purchase d) when to store. The quality maintenance is one of the objective inventory management. There are various tools & techniques in inventory management. EOQ,, Stock level determination, Inventory Turnover ratio, and ABC Analysis are mostly used for maintaining and controlling the Quality.

Keywords: Quality control, Inventory management, EOQ, Stock level determination, ABC analysis, and Inventory turnover ratio.

Introduction

Quality Control

Quality not only means the goodness of a finished product. It is the ultimate objective of a company and is also what consumers expect from a product. Quality has it meaning in all the stages of the production.

The main *objectives of quality control are* quality evolution, optimal quality judgment, productivity and quality improvement, and process conformity judgment. The broad areas to which it is applied: a) incurring and stocking of material at economic level, b) process control and c) product control.

The following *factors affecting quality*: 1) Markets 2) Men 3) Money 4) Management 5) Materials 6) Machines 7) Methods and 8) Miscellaneous.

Material is a key factor in quality control.

Inventory Management

Inventory includes raw materials, work-in–progress, consumables, finished goods, and spares. An efficient inventory management will determine a) what is to be purchased b) how much to

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purchase c) from where to purchase d) when to stores. The purpose of inventory management is to ensure the availability of materials in sufficient quantity as and at when required and also to minimize investment in inventories.

- **Objectives of inventory management:**
  a. Maintaining the quality of goods at reasonable prices.
  b. Continuous supply of materials, spares.
  c. To avoid over-stocking or under-stocking
  d. Control the material cost
  e. Minimize the loss from deterioration, pilferage wastages and damages
- **Tools and techniques of inventory management**

There are various tools and techniques of inventory management and control. Some of them are:

1. Determination of stock levels
2. Determination of EOQ
3. Inventory turnover ratio
4. ABC analysis

Determination of Stock Levels :

An efficient inventory management requires to maintain the optimum level of inventory where inventory cost is minimum but it may also not result in loss of sale or stoppage of production.

There are various level of stocks:

i. *Minimum stock level:* this represent the quantity to be maintained in hand at all times. It is calculated as: **Re-ordering level –(Normal consumption** X **Normal reorder period).**

ii. *Reorder level:* it the level when it is required to order fresh stock. It is usually between minimum and maximum stock. It is calculated as: **Maximum Consumption** X **Maximum Reorder period.**

iii. *Maximum stock level:* it's the quantity beyond which stock should not exceeds. If quantity exceeds the maximum limit, it is over-stocking. It is calculated as: **Reordering level + Reorder Quantity –(Minimum Consumption X Minimum Reorder period)**

iv. *Danger level:* it is level beyond which material should not fall in any case. It is calculated as: Average consumption X Maximum Re-order period for emergency purchases.

Determination of EOQ

Economic Order Quantity(EOQ) is the size of the lot to be purchased which is economic available. It also defined as a point where inventory carrying cost is equal to ordering cost. **Ordering cost** means the cost related to purchasing or placing the order of materials. **Carrying cost** is the cost of holding the inventories like cost of storage, cost of spoilage in handling the materials etc.

Inventory Turnover Ratio

It is the ratio which represents whether inventories have been efficiently utilized or not. It is also known as stock velocity or average inventory cost.

Inventory turnover ratio	=	cost of goods sold/ average inventory cost.
		Or
	=	Net sales/ Average Inventory
Inventory conversion period	=	Days in year/ inventory turnover ratio.

ABC Analysis

The materials are divided into number categories for quality control. in this method, the materials are divided into 3 categories : A, B and C. The material which higher in price but contribute very low in the production is classified in A category. The material with medium value or less costly is classified into B category. The material having low value but contribute mostly in the production.

Conclusion

The quality control and inventory management goes hand to hand. The inventory management is the basic factor in the quality control. If the material or inventory used for production is not of good quality then overall production will be of inferior quality. Therefore, if management wants to have quality control over their production it should be started from their inventory management.