

Inventory Management

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Abstract

At present due to lot of competition in market for the similar products produced by various companies and as each company is manufacturing the same items the customer is confused which one to purchase with same function, only by going through the brand of product the purchase is done and the share of all is reduced.

All new entrepreneurs brings new ideas with new techniques with different technologies are used for manufacturing which shows competition in market.

Various inventory control techniques are used to control inventory either in production or in trading business.

Key Words:- Raw material, work in process

1. INTRODUCTION

For the purpose of meeting the customer requirement at any time the inventory level is maintained for maintain inventory level bin system is used, three containers are used for the inventory required at every moment i.e. once the first bin is exhausted the second is utilized and the order is placed to fill the gap of inventory. As there are different methods of production like job production, batch production, continuous production the inventory is stocked as per the requirement in the manufacturing process.

There are different types of inventory like work in progress inventory, slight finished goods, and complete finished goods types of inventory. The inventory in stock which is not converted in to desired shape is the major part of inventory, for example in paper industry the paper reels of 300kg to 350 kg comes in the form of paper reels and after receiving the paper is cut in to desired size for making different types of corrugated boxes and in whole system paper is cut in to size as required then pasting is done by making two ply or five ply, which is the part of inventory in process.

Carrying inventory in stock and not using for a long time bears interest on investment made which may effect the cost of product manufactured. Keeping inventory idle for long time will affect the business profit and just keeping inventory the utilization of space is also blocked for which the investment is already made.

2. METHODOLOGY

To make any industry in proper working the inventory control is must and for this preplanning is to be done like which raw material is required along the tools and for this total managing system is involved like keeping the raw material of various kind like basic raw material, other raw material which is required for making the product for example in paper packaging industry the basic requirement of raw material is paper in reels or paper rolls which comes in kg and tons and for placing raw material proper storage is required from where the raw material is picked

and brought in production hall, then the other raw material like glue or silicate is required for pasting purpose, which is also important raw material and for which space is required like this many miscellaneous items are required like stitching wire used for the purpose of stitching the boxes the product which is manufactured

While controlling the inventory the under mentioned points to be remembered

1-how much to purchase

2-when to purchase

3-why to purchase

4-from where to purchase

5-is the raw material is indigenously available or to import from other country.

6-What will be the cost, as the cost of raw material plays a very important role while selling the converted material in to desired shape

7-hand to mouth purchase ie.when the demand comes raw material is purchased

3. PROBLEM & FINDINGS

1-Before purchase of raw material proper place is not identified and raw material is kept by utilizing more space which bears the rate of interest is loan is taken or if not then also the money is blocked. It has been observed that the raw material in government purchases is kept at one place and not utilized for even years which block the space as well as the hard money of government.

4. TYPES OF INVENTORY

1-Raw material Basic

2-work in progress.

3-semi finished inventory

4-Inventory lying idle for more number of days and not utilized at all.

5-Finished product

5 SUGGESTIONS FOR INVENTORY CONTROL FOR INCOMING MATERIAL AS PER JUST IN TIME

Do not inspect

Do not store

Order it amounts to be processed per period

Have material directly delivered to the production process

Minimize paper work

For actual processing

Do not inspect

Minimize flow distance

Minimize lot size

Minimize paper work

Do not rework

Minimize set up time

Operate with minimum work in process

Do not produce extra units

Inventory managing functions

Receiving material and inspection is done

Storage
 Stock accounting
 Physical stock verification
 Retrieval and issue

6-Factors affecting the low productivity

More inventories are kept in stock.
 Long time for utilization of raw materials.
 More stock kept which is dead stock and there is no movement.
 More cost of transportation in handling.
 Waste material during production process or storage.
 Delays in meeting requirement during production process.
 Poor storage methods.
 Not buying from right sources/vendors.
 Too much variety of spares parts and there is no standardization.
 No proper recording methods involved.
 Holding cost components:-capital cost, storage cost, service cost, risk cost
 The inventory is required to meet the price inflation, uncertainty of demand and supply, extra transport cost must be minimized and variable cost for having economy of scale. The inventory problems can be resolved by considering the facts how much to buy (E.O.Q) economic order quantity & when to buy i.e. reorder point. There are different models of inventory control like static inventory model where purchase of expensive spares while importing the equipment from abroad, keeping stock of goods for sale during short selling, Planning of transportation in remote area.
 Dynamic inventory models: Repetitions of purchases
 It has been observed that more number of inventory problems comes under this type of decision making. And the important questions comes in our mind what will be the order size and when to purchase and different inventory policy is made for success like lot size, ordering level system and optional replenishment. JIT production systems were developed in Japan to minimize inventory specially work in process and other types of inventory which is considered as waste and to be eliminated. The ideal JIT system produces and delivers exactly the required number of each component to the downstream operation in the manufacturing sequence as decided i.e. when the component is required.
 Categorization of items

7-ABC Analysis-

This is the method by which the material is classified in to different categories.
 1-costly items which are 10 to 20% of the total items and which cost 50% of the total value as A Category.
 2-Group B category consists of items which constitute 20 to 30% of the store value of inventory.
 3-Group C represents 30% of the total value of inventory cost.
 Categorization is done to give more attention towards the item to be purchased according to cost which may effect the sales price of the product manufactured.
 ABC-VED Analysis
 While doing the analysis of ABC category items Fast moving, Slow moving and Non moving the more care is taken while controlling inventory .

While doing analysis of VED categories vital items, essentials items & desirable items utmost care is taken i.e. Vital –must have in stock when needed means critically checked. Essential-should have on sub critical paths and Desirable-can has on non critical paths. The importance is given on the bases of cost of items to be purchased which is necessary as per vital, essential requirement and items desirable to be purchased .Movement analysis is done on the under mentioned bases.

F-Fast moving items which is demanded very frequently.
 S-Slow moving items which is demanded infrequently.
 N-Non moving items which is known as dead stock means not in use or not required at all and effecting cost.
 Different modes are needed for different categories
 G-Government controlled items like cement, steel as there is Government .quota fixed for purchase therefore purchase effects.

8-Deterministic models-economic order quantity re order point-Most classical model was the first model to be developed by Harris in 1915 but was popularized by Wilson in 1928.It is still known as popular EOQ model.

Assumptions

- 1-continuous demand at uniform rate.
- 2-The entire quantity of order placed is received at one time.
- 3-The process is continued without stopping.
- 4-There is no constraints due to budget capacity.
- 5-No shortages are allowed.
- 6-Quantity discounts are not given.
- 7-Lead time is deterministic.
- 8-Inventory is continuously checked.

Bin system is used for meeting urgent requirements in this system three bins are filled up with urgent required raw material and start using one by one and once the first bin is exhausted the second one is used and once third using immediately orders are placed to fill previous bins and this is applicable as per the production of goods and may vary from product to product.

Rating aspect of Economic order quantity and re order point-In this inventory level is monitored regularly and as soon as the inventory level goes down to a predetermined level reorder point, a fixed quantity q is ordered again and R the decision variables to be optimized for the minimization of total system cost, there are different cost parameters l

- 1-inventory carrying cost c_1
- 2-ordering cost c_3

9-Inventory models with quantity discounts It always happens that the supplier offers heavy discounts in case of bulk purchases of raw materials therefore the total purchases bill is not the constraints of decision variables. the decision discounts may be due to unit price of purchase items, due to quantity, seasonal discounts and there are various types of discounts like all unit discounts, giving payment in advance discounts.

10-Multi echelon inventory system-in this system the stock is kept near to the point of consumption and it always affects where number of production programmes are running at a single place, in this case the material pick up point is made near to the departments which may help the workers to get raw material as and when required. As the channel of distribution helps to send material on time

without effecting the production process and depends the source of supply of raw material whether it is from indigenous manufacturer or imported from other country. As per the marketing channel of distribution the material comes from industry to whole seller then distributor and then to retailer and ultimately reaches to customer

Strategic decision made in design of distribution like

1-Number of echelons required.

2-Number of storage facilities of each echelon

3-Location of storage facilities.

Operating decisions made

1-centralized control system.

2-centralized control at individual place stocking.

3-Individual control and individual stocking as per requirement

4-Internal stock moving through horizontal or other transformation and thereafter return of surplus stock to higher echelon. The main aim of any business is to get profit through the business in modern way of communication, as previously the facilities were less in business but due to modernization the whole system is changed and a more restrictions are made for the schedule made for timely delivery. Material not supplying on time is one of the reasons of loss as if the material is not sent on time the other industries depending on your raw material may not produce their product on time and delay in supply affects the whole budget.

11-Classification of inventory-This can be done only by classifying raw material by coding system. In different production system the same type of process of coding is adopted for raw material; work in process, finished goods and supplies. A raw material may be of different types, may be for the conversion purpose or using in the production process, if you take an example of paper packaging industry the raw material may be paper reels, paper rolls or only sheets of 2 ply 3ply or 7 ply etc,like this glue or silicate used for pasting purpose as a raw material, stitching wire used for stitching purpose and how much is required with quantity, quality with their specifications are used in production purpose., the other raw material like oil for machine all are specified as the inventory. The inventory itself is classified as under

1-Consumable stores

2-Work in process stores

3-Finished products lying in industry premises

4-Non consumable raw material waiting for the process.

12-Inventory control

The control of inventory is done by the appointed members of concerned department looking after inventory control. Daily planning of requirement is done by to meet the daily production programme.this comes in first phase and in the second phase responsibility is the recording and reporting of transactions involving movement of raw material and their effect on inventory stock.Comparison of both existing requirement and the current evaluation is checked for inventory control. The most important point is to initiate the corrective action in case of shortage. As planning is done before any execution of industry and here the management rules of planning ,organizing ,directing, motivating, coordinating and then control comes which is very important.

13-Waste management- the material waste may be caused due to the under mentioned reasons.

1-Surplus stock kept in inventory and the non moving dead stock.

2-Obsolete material or rejected material kept in stock unnecessary the space is underutilization, the stock may be machine not in order total obsolete for the use or raw material.

3-Damaged material or equipment not in use for dispose.

4-Scrap came from production process and rejections.

Effective waste management-Best way to manage waste is not to generate it and get most out of whatever waste gets generated despite preventive steps taken by recycling process .There are different ways to control is as under.

1 Elimination of waste at source of supply.

2-Use value engineering the biggest tool to help and find out ways to get good value of raw material.

3-Establishing waste standards for monitoring and control.

4-introducing incentive for waste minimization.

5-Training, motivate and awareness campaign to be done by conducting workshops, seminars etc.

14-Corrective methods-

1-Efficient collection, segregation at source.

2-Good storage facility.

3-Recycling use of waste.

4-optimal disposal policy/frequency.

Disposal surplus material-

1-Return the material to the supplier.

2-Monitoring of waste, waste standard, financial incentive for waste reduction.

Conclusion

We must make the proper planning before purchase of any kind of inventory which is very important and fix the responsibility of the concern to check physically and make the report of inventory in stock register by making daily stock register, the material issues and material in stock daily. Daily opening stock to be checked to verify the raw material available. While of purchase of inventory it should be kept in mind that the stock to be maintained as per requirement and good vendors to be selected for the supply of raw material so that in case of emergency material to be made available.

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