To Study the Inventory Management System at Organization Level

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Abstract:
This paper gives an idea about the ABC analysis and EOQ model of inventory which can be fruitful to other researcher for the future work. Many Organizations face great challenges in managing inventories. Poor inventory management may result in under-stocking, overstocking as well as high inventory total cost. This paper examines inventory situation at organization's central storeroom. The main objective of this study is to investigate whether any of two selected methods could reduce inventory related costs at organization's central storeroom. The ABC analysis technique for the inventory control system is first used to identify the most important multiple items and then the economic order quantity (EOQ) of each items is developed to find their inventory model equation individually. The use of this model will help the organization to know the optimal number of items to order within a year and when to place new orders for each item.

Keywords: Inventory, ABC analysis, EOQ model

I. INTRODUCTION

Inventory is defined as a stock of items kept on hand by an organization to use in meeting customers demand. The importance of inventory to a firm stem from two points of view: financial and operational. First, inventory represents a major financial investment for any company. Inventories represent 25 to 50 percent of total assets in manufacturing firms and 75 to 80 percent in wholesalers and retailers. Inventory control is a vitally important to almost every type of business, whether product or service oriented. A proper balance must be struck to maintain proper inventory with the minimum financial impact on the custom. Inventory control is the activities that maintain stock keeping items at desired levels. In manufacturing since the focus is on physical product, inventory control focus on material control. Inventory means physical stock of goods, which is kept in hands for smooth and efficient running of future affairs of an organization at the minimum cost of funds blocked in inventories. The fundamental reason for carrying inventory is that it is physically impossible and economically impractical for each stock item to arrive exactly where it is needed. Inventory management is pivotal in effective and efficient organization. It is also vital in the control of material and goods that have to be held for later use in case of services. Inventory control involves the control of assets being produced for the purpose of sale in the normal course of the company's operations. Inventories are stock of the product a company is manufactur-ing for sale and components that make a product. The various forms in which inventories exist in a manufacturing company are:

- Raw materials.
- Work in process.
- Finished goods

Raw materials are those basic inputs that are converted into finished product through the manufacturing process. Raw materials inventories are those units which have been purchased and stored for future productions. Work-in-process inventories are semi-manufactured products. They represent products that need more work before they become finished products for sale. Finished goods inventories are those completely manufactured inventory management products which are ready for sale. Stocks of raw materials and work-in-process facility production, while stock of finished goods is required for smooth marketing operations. Thus, inventories serve as a link between the production and consumption. The term store, storehouse refers to a building or room or place where materials are kept. An organization success can be greatly affected by the efficiency of its stores operations; efficient stores management can save money and help retain customers and maintain continuous operations but store mismanagement can lose organization money, customers and production. Store management is part of the overall function of materials management. Management is the specific purpose of planning, controlling and implementing. Material management is the process of planning, implementing and controlling or storage of unit, facilities, service and information efficiently and effectively from the point of supply to the point of consumption in the conformity of the organizational objective.

II. OBJECTIVES:

The main objectives of the purposed work will be summarised as follow

1. To suggest ideas to manage the inventory level of the organization.
2. To study of the effective utilization of consumable inventory by using ABC analysis.
3. To find out the economic order quantity of the consumable items of the organization.

III. RESEARCH METHODOLOGY:

The study was conducted to know the position of inventory management. Every organization needs inventory for smooth running of its activities. It's served as a like between production and distribution process. The secondary data was collected from storeroom manager.
Some for inventory control techniques are
• ABC Analysis

• EOQ

ABC Analysis:

ABC Analysis is an important factor in controlling the inventory. It is very effective and useful tool for classifying monitoring and control of inventories. The firm should not keep same degree of control on all the items of inventory. It is based on Pareto law; It is also known as selective inventory control. The firm should put maximum control on those items whose value is the highest, with the comparison of the other two items. The technique concentrates on important items and also known as control by importance and exception usually a firm has to maintain several types of inventories for proper control of the firm should have to classify inventories in the instance of their relative value. Hence it is also known as "proportional value analysis".

Table.1. Classification of A, B &C Items: -

Class	no.of items	value of items
A	20%	80%
B	10%	15%
C	70%	5%

ECONOMIC ORDER QUANTITY (EOQ):

Economic Order Quantity is the Inventory management technique for determining optimum order quantity which is the one that minimizes the total of its order and carrying cost. There are two major cost associated with inventory. Ordering cost and carrying cost.

$$EOQ = \sqrt{\frac{2DS}{H}}$$

Where, D = Annual usage
H = Carrying cost per unit
S = Ordering cost per unit

Table.2. Data analysis and interpretation Consumption of raw material [2014-2015-2016]:

YEARS	AMOUNT OF MATERIAL	PERCENTAGE OF INVENTORY
2014	2424529	41.23%
2015	1883759	32.04%
2016	1571523.75	26.73%
Total	5879811.75	100.00%

INTERPRETATION:

The above table shows the consumption of raw material in 2014, 2015, 2016. The percentage of inventory decreases from 2014 to 2015 from 41.23 to 32.04 and 2015 to 2016 from 32.04 to 26.73.

Table.3. Abc classification of inventory data [2014]:

ITEMS	NO.OF ITEMS	% OF ITEMS	CONSUMED VALUE	% OF VALUE
A	29	12.24%	1946956	80%
B	62	26.16%	366780	15%
C	146	61.60%	110793	5%
TOTAL	237	100.00%	2424529	100%

INTERPRETATION:

The above table shows the ABC analysis for the year 2014. The A class items are less but its consumption value is more

(80%), C items are more but its consumption value is low (5%) and B items are moderate on its percentages (15%).

Table.4. Abc classification of inventory data [2015]:

ITEMS	NO.OF ITEMS	% OF ITEMS	CONSUMED VALUE	% OF VALUE
A	31	12.92%	1510424	80%
B	72	30.00%	283570.5	15%
C	137	57.08%	89764.5	5%
TOTAL	240	100.00%	1883759	100%

INTERPRETATION:

The above table shows the ABC analysis for the year 2015. The A class items are less but its consumption value is more (80%), C items are more but its consumption value is low (5%) and B items are moderate on its percentages (15%).

Table.5. Abc classification of inventory data [2016]:

ITEMS	NO.OF ITEMS	% OF ITEMS	CONSUMED VALUE	% OF VALUE
A	40	16.81%	1257822	80%
B	69	28.99%	228419.25	15%
C	129	54.20%	85282.5	5%
TOTAL	238	100.00%	1571523.75	100%

INTERPRETATION:

The above table shows the ABC analysis for the year 2014. The A class items are less but its consumption value is more (80%), C items are more but its consumption value is low (5%) and B items are moderate on its percentages (15%).

Table.6. Abc classification of inventory data [2014-2015-2016]:

ITEMS	NO.OF ITEMS	% OF ITEMS	CONSUMED VALUE	% OF VALUE
A	100	14%	4715202	80.19%
B	203	28%	878769.75	14.95%
C	412	58%	285840	4.86%
TOTAL	715	100%	5879811.75	100.00%

INTERPRETATION

The above table shows the ABC analysis for the year 2014, 2015 and 2016. The A class items are less but its consumption value is more (80%), C items are more but its consumption value is low (5%) and B items are moderate on its percentages (15%).

Table.7. COST

The below table is the variance of the operational cost of the various imported item before and after applying the Economic Order Quantity model.

ITEMS	Total cost before EOQ model	Total cost after the EOQ model	Difference between TC(B) and TC(A)/ Saving
Rim A4 paper	343.51	261.21	82.3
Computer cartridge photostat Work Centre machine	784.12	527.31	256.81
Computer cartridge	1513.89	1351.4	162.49
Answer sheet 16 pages	238.32	207.66	30.66
Answer sheet 40 pages	236.78	255.29	-18.51
Answer sheet 12 pages	203.74	179.01	24.73
Bond paper	465.29	549.93	-84.64
Ply board 6*4	221.1	187.62	33.48
Prospect books	185.34	209.66	-24.32
Ply board 8*4	198.93	197.71	1.22
TOTAL	4391.02	3926.8	29119.86
TOTAL SAVING = 29119.86			
PERCENTAGE (%) = 10.57%			

INTERPRETATION

It is observed that the total cost of an inventory before applying the EOQ model was higher than after applying the model. This means that if the organization employed the EOQ model, it would reduce its annual total cost as shown in above table.

Table.8. Yearly Consumption of Items

Year	Consumption of A items	Consumption of B items	Consumption of C items	Percentage of Value
2014	1946956	366780	110793	80%
2015	1510424	28357.5	89564.5	15%
2016	1257822	228419.25	85282.5	5%
2014-2015-2016	4715202	623556.75	285640	

INTERPRETATION

The above table shows the yearly consumption of items for the year 2014 to 2016. The A class items are less but its consumption value is more (80%), C items are more but its consumption value is low (5%) and B items are moderate on its percentages (15%).

Table.9. Variance in Operational Cost

year	Decrease in ordering and carrying cost	Decrease in total cost
2014-2015-2016	10.57%	0.93%

INTERPRETATION

The above table shows the variance in operational cost. A comparison with their current inventory cost shown a decrease of 10.57% in ordering and carrying cost, annual cost decrease is 0.93%. This is an indicative of the significant benefits derived from the use of the model by organization.

IV. CONCLUSION

This paper provides an Economic Order Quantity Model in which we reviewed the importance of inventory cost minimization of an organization. If the Economic Order Quantity model is used the holding cost and the ordering cost will become low. This would enable the organization to reduce their total cost (ordering, carrying) by approximately 10.57% for the ten selected items. The use of this model will help the organization to know the optimal number of items to order within a year and when to place new orders for each item. The organizations do not have effective method for managing their inventory. Therefore, the findings of this study are expected to help the management of organization to formulate good inventory policies. ABC analysis is very popular method of inventory control.it is an effective instrument in reducing the cost of material in the store house. The use of ABC analysis ensures control over the costly items in which a large amount of capital is invented. It helps in maintaining enough safety stock for C category of items. It helps in reducing clerical cost and maintaining stock at proper level.

V. RECCOMANDATION

1. We recommend that in order to manage inventory effectively, the management of organization needs to employ inventory control model such as the Economic Order Quantity (EOQ) model to obtain optimal ordered quantities for its items.
2. We also recommend that organization adopt the Economic Order Quantity (EOQ) model which will help in trying to reduce the number of orders made within a year.
3. We also recommend that if ABC analysis is applied with care, it ensures considerable reduction in the storage expense and it is also greatly helpful in preserving costly items.

VI. REFERENCE

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