

Inventory Management and Control in Public Sector Enterprises in India

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Abstract

Proper management of materials is very important for a manufacturing concern because it allows the firm to serve its customers and production need adequately. Procurement and use of materials also require investment of capital. Extreme levels of materials stock too high or too low are not desirable. Excess investment in materials adversely affects the financial performance and efficiency. For example, excess materials lower the return on total assets and materials turnover ratio. It also results in high carrying costs. Too little materials stock although resulting in lower carrying costs, increase the opportunity cost of being out of stock and it increases customer dissatisfaction. Therefore, proper management and control of materials is an important task for proper management of manufacturing operations. It is essential to adopt scientific practices and techniques that have been developed in this regard.

Keywords: Management, Dissatisfaction, Excess, Regard, Essential.

Introduction:

The top management, particularly in India, is deeply concerned with developing suitable norms for inventory management and control. To achieve higher operational efficiency and profitability of an organisation, it is very essential to reduce the amount of capital locked up in inventories. This will not only help in achieving of return on investment by minimising tied up capital but will also improve the liquidity position of the enterprise. The inventory management may be defined as "the branch of business management concerned with the development of policies to which the firm's inventory is meant to conform". The inventory control is the technique of maintaining stock-keeping items at desired levels, whether they be raw materials, goods in process or finished products". The Materials management concerns several disciplines including value analysis, inventory control, purchasing, standardisation and codification, storage and transportation of which inventory control is one of the most important aspect". As defined by the Accounting Principles Board, the term 'Inventory' means the aggregate of those items of tangible property which (i) are held for sale in the ordinary course of business, (ii) are in process of production for such sales, or (iii) are to be currently consumed in the production of goods or services to be available for sale. The term inventory control relates to a set of policies and procedures by which an organisation determines which materials it will hold in stock and the quantity of each that it will carry

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Inventory Policies and Management:

An organisation's expected risk and return are directly affected by the amount and composition of its inventories. Inventories also affect the firm with the liquidity necessary for the on going functions of the business. Too much inventories reduce profitability, whereas too little jeopardize the ability of the firm to function efficiently. Thus, it is a must to formulate an inventory policy which balances risk and return to the ultimate benefit of the business. An organisation's stock-holding policy is implemented by a series of rules which determine how and when certain decisions concerning the holding of stocks should be made. This series of rules is known as an inventory policy. Inventory policy is concerned with decisions at a policy level which affect the question of the inventory system. Inventory policy refers to basic policy decisions regarding target levels for each category of inventory item. Since production, marketing and financial people all have a stake in inventory management, inventory policy is established by the top management/executive committee of an organisation. The production manager is concerned with raw materials inventory to ensure continuous production, the marketing manager wants the firm to hold large stock of inventories to ensure rapid deliveries - this will make it easier to increase sales, the financial manager is concerned with the level of inventories because of the effects excessive inventories have on profitability - excessive inventories erode the profit margin.

Objectives of Inventory Management

The objective of Inventory Management is to create a balance between the desire to minimize capital investment on one hand and to avoid extending the delivery period on the other hand. The Bureau of Public Enterprises, New Delhi has stated the following objectives of inventory management and control.

- i) to minimise idle time of men and machines caused by shortage of raw materials, stores and spare parts:
- ii) to keep down;
 - a) Capital Investment in Inventories,
 - b) Inventory carrying cost and
 - c) Obsolescence losses.

The two objectives are in conflict and the efficiency of inventory management lies in balancing one against the other with a view to arriving at an optimum overall result. John F. Magee have also stated that the objectives of inventory management are (i) to minimise the possibility of disruption in the production schedule of a firm for want of raw materials, stores and spares, and (ii) to keep down the capital investment in inventories, although it is essential to have necessary inventories. The inventory management should, therefore, strike a balance between too much inventory and too little inventory. The efficient management and effective control of inventories helps in achieving better operational results and reduce investment in working capital

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Importance of Inventory Management:

Inventory is the life blood of the manufacturing industries. Dudick and Cornell had not made any exaggeration in saying that, "Inventories are a major asset and represent a sizable investment in business that sells or manufacture the products". In the case of Companies, the ratio of inventory investment to total assets for the enterprise's averages in excess of twenty percent. The inventory management is more important because inventory cost is the only area which can afford an easy scope for cost reduction and cost control. To quote Joseph Monks, "Inventory management has been the key to the success of many firms and the cause of failure of numerous others. In one-word sufficient inventories hamper production and fail to generate adequate sales, whereas excessive inventories adversely affect the firm's cash flows and liquidity position. From either perspective, poor inventory management can present a serious challenge to the viability of an organisation and can sometimes have a disastrous effect on its solvency."14 As such there is a pertinent axiom of financial management that most of the firms are forced out of business due to poor inventory management than for any other reasons.

Inventory Control V/S Materials Control

Generally, inventory control is taken as the synonymous of materials control, but in fact both the terms differ from each other. "Materials control is the operation process whereas inventory control is the management 16 process." this type of policy was in a manufacturing According to M.M. Verma, "the inventory control gives birth to the materials control. The materials control inhales in itself the entire operational aspect of store-keeping right from the receipt of materials to the issue of materials as allied functions. On the other hand, inventory control precedes store-keeping which pre-determines the scope of inventories and investment therein." This, inventory control fixes the area limits in the 17 name of inventory policy, beyond which the activities of I cannot go. A. Deb is of the view that "materials control covers all activities, relating to planning, procuring receiving, storing and issuing. Inventory control covers the process of regulating the investment in materials carried in stock within predetermined limit. Materials management includes in result of procurement and distribution of raw materials, consumable stores, plant repairs, and maintenance stores, plant equipment and services. The aspect of materials control concerned with physical custody is store-keeping. Realising the significance of greater materials content in the cost increased of production, some enterprises have grouped, "functions of material control - inventory management, purchasing, inventory control, production control and traffic, under one function of materials management.

Dangers of Under Investment and Over Investment In Inventories

A consistent policy of 'under-investment' in inventories will surely have an adverse effect on the profitable results for a business enterprise. One of the obvious result from this type of policy would be that sales would suffer. If insufficient materials are on hand in a manufacturing concern, prompt deliveries for products sold will be affected. For a retail business shortage of merchandise will result in the absence of variety for selection of merchandise and will displease the customers and loose them. The result of a shortage of inventory for manufacturing enterprises is that costs are increased.

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In situations where the production line is awaiting materials, labour and overhead costs continue, with resulting higher unit costs. Harry Gross has suggested that "during periods of rising prices, unit costs will ventory ne be increased due to low stockpiles of inventories, and reordering at higher prices. Cost of products is also increased as a result of 'under investment' since transportation costs are higher on account of frequent additional shipments of materials. In connection with an extreme policy of 'over investment' of inventories, there is usually a corresponding result of a strain on the industry financing for other purposes. In cases where a disproportionate amount of funds are invested in inventories, excessive borrowing or other financing would be required bringing about increased interest expense and reduced profits. Maintaining a greater amount of inventories that might be required involves an increase in affiliated costs. Some of these increased costs are (a) additional storage costs, (b) transportation expenses (c) insurance costs, and (d) material handling expenses. In the words of Harry Gross, "One of the most costly factors related to 'Over investment' inventories is obsolescence and spoilage. There is more likelihood for this type of waste when inventories are excessive.

Techniques of Inventory Control

Harry Gross has suggested several techniques which may be used to control inventories of which the following are the most common:

- a) The low point technique where standards are established for reordering when these low points are reached;
- b) A reserve storage procedure for keeping a reserve supply to be used ABC when current needs are exhausted;
- c) Planning based on continual review. Based on this method reordering is accomplished at the same time as this regular analysis is made.

L.R. Howard suggested and also supported to Harry Gross that proper of items account control of inventory not only solves the acute problem of liquidity but O ption also increases the annual profits and causes substantial reduction in the working capital of the firm. Effective control on inventory is exercised by introducing various measures of inventory control, such as ABC analysis, measure fixation of norms of inventory holdings and reorder points and a close watch on the movements of inventories. In order to segregate the items, in order of importance on the basis of selective approach, different analysis cent of annual usage have been developed to help in bringing practical solution to the problems m generally costs of controlling inventory. Each of the analysis is based on different criteria units f and is having specific advantages and purpose. The most common and nearly important of all such analysis is the ABC Analysis. The others are HML Analysis, FSN- Analysis, VED-Analysis, SDE-Analysis and S-O-S Analysis. These Analysis are based on the management principle of management by Exception i.e., a manager looks only at the important areas. According to Richmond, "The ABC Plan concentrates on important items and is also known as control by importance and exception (CIE). These analyses should be used when and where found necessary and useful.

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i) ABC-Analysis:

The ABC analysis is a basic management tool which enables top management to place the efforts where the results will be greater. This technique, popularly known as "Always Better control", has universal application in many areas of materials management. This approach of ABC analysis helps the materials manager to exercise selective control and focus his attention only on a few items when he is confronted with thousands of stores items. Any sound stock control system should ensure that every item gets right amount of attention at the right time. ABC analysis makes it possible with considerably less efforts by its selective approach.

ii) HML-Analysis (High, Medium, Low Analysis)

Since the total annual usage is considered in case of ABC - Analysis, we may come across quite a few items which fall in C or B category, although the unit cost (cost per piece/unit) is quite high. If control are exercised on the basis of ABC - Analysis only, the importance of those items will be much less than A or B items, even though the inventory or transaction or one unit of these items will mean quite a lot of money. Therefore, it is necessary that the unit cost is also considered, in order to find out the importance of the items on the basis of unit cost. Limits of unit costs are fixed for high cost items (H) Medium cost items (M) and Low cost Unit (L) and all the items are segregated into H, M and L categories depending on their unit cost.

iii) F-S-N-Analysis: (Fast Moving, Slow moving and Non-Moving Analysis)

Here the items are classified into Fast moving (F), Slow moving (S) and Non-moving (N) items on the basis of quantity and rate of consumption. This classification comes in very handy when desire is to control obsolescence. The Non-moving items (usually, not consumed over a period of two years) are of great importance. It is found that many compaines maintain huge stock of non-moving items blocking quite a lot of capital and the number of such items run into thousands. Scrutiny of these items is made to determine whether they could be used or are to be disposed off. The classification of Fast- and Slow-moving items helps in arrangement of stocks in stores and their distribution and handling methods.

iv) V-E-D-Analysis: (Vital, Essential, Desirable Analysis)

This analysis specially pertains to the classification of maintenance spare parts devoting the essentially of stocking spares. The peculiarity about spare parts is that it does not follow a predictable demand patterns in the case of raw materials. For example, the older the machine gets, the great may be the maintenance spares required. As such, past trends cannot throw much light on stocking policies.

(V) SDE-Analysis : (Scarce, Difficult and Easy Analysis)

The criteria for this analysis is the viability of the materials in the market in industrial situations where certain materials are in scarce supply (specially in a developing country like ours), this analysis proves to be very useful and gives proper guideline for deciding the inventory policies.

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The characteristics of the three categories S,D and E are given below:

'S' Refers to scarce items, items which are in short supply usually these are raw materials, spare parts and imported items.

'D' Stands for difficult items, items which are not readily available in local markets and have to be procured from far off cities, or items for which there are limited number of suppliers, or items for which quality suppliers are difficult to get.

'E' Refers to items which are easily available in the local markets.

(vi) S-O-S-Classification:

Some of the items required may be seasonal in nature and may require special purchasing and stocking strategies. Many commodities, especially of agricultural origin are seasonal in character have to be purchased at the best time. Inventories at the time of procurement will be extremely high but this cannot be helped. A buying and stocking strategy for seasonal items would depend on a large number of factors and more and more sophistication is taking place in this matter. Operational research techniques would have to be used to obtain optimum results.

Conclusion:

It may be concluded that the existing system of materials management in all the selected enterprises under study is not satisfactory and needs improvements in all directions without delay. The materials available with the units is not properly utilised or exploited to their maximum consumption capacity. It is quite likely that the units under study could have more programmes than they have, had they been decorated with modern tools and techniques of materials recording, scientific materials handling equipment, modern techniques of stores management, and trained and educated materials manager to use the best available resources with the concerns. The present study has proved that all the units under study can boost their profitability and productivity through scientific materials management system and the effectiveness of materials management depends on cost control and cost reduction. Had selected enterprises managed materials in an efficient and scientific manner, they would not only have generated resources for their own expansion but would also have contributed towards economic growth of the country. Modern techniques of materials management are now-a-days being followed by several manufacturing concerns and the selected enterprises under study should not lag behind. Only very recently, the integrated materials management concept has gained greater acceptance in Indian industries. Although all the selected units under study have not been adopting a totally integrated approach, there is a definite tendency towards it.

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