

Material Management in Public Enterprises

***Dr. Nikesh Jain**

Abstract

Materials management constitutes all the management functions related to the complete cycle of materials flows, from the purchase and internal control of materials to the planning and control of work in process to the warehousing, shipping and distribution of the finished products. In many organisations' materials management is the dominant activity that permeates and underlies all other activities. A material is any commodity used directly or indirectly in producing a product or service, such as raw materials, component parts, sub-assemblies and supplies. A materials system is the network of material flows within a productive system including materials at suppliers, in transit from suppliers, in receiving, in the raw materials warehouse, in-process inventories, being inspected in quality control, in finished goods warehouses, and in transit to customers. In short, a materials system includes all materials present in the productive system between the suppliers and the customers carrying materials.

Keywords: Management, Internal, Permeates, Dominant.

Introduction:

"Two-thirds of all the gain possible through the most efficient (production) management could be realised by having all the materials ready when you want it, where you want it, and in the condition, you want it." Since materials management is a complex concept and covers many facets of management, there is no unanimity on the precise definition. According to Dean S. Ammer, the Materials management would embrace all activities concerned with materials except those directly concerned with designing or manufacturing the product or maintaining the facilities, equipment and tooling. It would embrace the activities performed by major departments such as purchasing, production control, receiving and inspection, stores, traffic and physical distribution.

Nature of Materials Management:

The concept of materials management has developed slowly over a number of decades and different proponents of material management have evolved different notions about it. This has affected the nature of materials management and has to be understood with different angles. Like all the other types of management, materials management is also both a science and an art. Science is a systematised body of knowledge which based on universally accepted principles evolved by

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establishing relationship between cause and effect. Materials management is also based on cause and effect. Material is based on a few universally accepted principles and techniques like Economic Order Quantity (EOQ), Re-order Point (ROP) etc. Principles of materials management have also been evolved by experimentation in different circumstances and can be applied in materials management of any organisation. Like a scientist today's material manager uses scientific.

Significance of Materials Management:

In olden days, mostly the consumer and the producer of an item was one and the same person. But with the development of science and technology, the link between the producer and the consumer was broken and the trader came into existence. Further, the wants of men are always increasing, making the producers to produce more and more at lesser cost. Because of the competition for any products in the market, the producers started engaging specialists in various fields, to produce the goods at lesser cost and also to achieve maximum productivity. Because of this, the profit margin will go high and maximisation of production is possible within the given amount of capital. The importance of materials management lies in the fact that any significant contribution made by the materials manager in reducing materials cost will go a long way in improving the profitability, and the rate of return on investment. In any industry, the rate of return on capital employed is given by the ratio:

$$\begin{aligned} \text{ROR (Rate of Return)} &= \frac{\text{Profit}}{\text{Capital Employed}} \\ &= \frac{\text{Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital (Fixed Asset + Current Assets)}} \\ &= \text{Profitability} \times \text{Capital Turnover Ratio} \end{aligned}$$

So, to increase the rate of return on investment, one way is to increase the capital turnover ratio. For this, if capital employed is reduced, naturally capital turnover ratio will go high. Capital employed constitutes of Fixed Assets & Current Assets. Fixed Assets constitute capital already sunk and the only scope for improving the return on investment lies, therefore, in the efficient management of materials which constitutes the bulk of the current assets. So, to reduce the capital employed, materials management offers a very lucrative scope.

Scope and Functions of Materials Management:

Materials management covers all aspects of material costs, supply and utilisation. However, there is no general agreement on what functions should be unified organisationally for unified materials management. Generally, it includes all activities concerned with materials except those directly concerned with designing or manufacturing the product or maintaining the facilities, equipment and tooling. It localizes or brings together under one organisational component the responsibility for determining the manufacturing requirements, scheduling the manufacturing process and procuring, storing and dispersing materials within allowable cost. The functional areas involved, in Materials Management usually include purchasing, production control, inventory control, traffic stores,

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scheduling, receiving and warehousing. latest

According to Mr. Bethel and other, "Effective Management of materials embraces four phases:

1. Procurement - Purchasing;
2. External Transportation receiving and traffic;
3. Internal Transportation - material handling;
4. Inventory Management - stores keeping;

The renowned American Research Professor in the field of Materials Management, Dean S. Ammer, is of the view that "materials management would embrace the activities performed by the following departments purchasing, production control, stores, traffic and physical distribution. Gopal Krishan and Sudarsan have classified the scope and functions of materials management into three parts as given in the following chart.

Scope and Functions of Materials Management

- Material Planning and control
- Purchasing
- stores and Inventory control

Broadly Materials Management includes the following functions:

1. Material Planning: The planning part of the materials management deals with the following issues quantity

1. Translation of the sales projections into long-term requirements of materials.
2. To estimate the materials requirements on the basis of update production plan adjusted to the latest sales plans.
3. To project the facilities required for the materials management. table suppliers

2. Production Control: The production control function develops the short-range operations plans and schedules from the long-range Supplier, plans. This function deals with the following:

1. To develop detailed plans for the production of part or final product along with the needs of the materials.
2. To schedule the operations of parts and products on the basis of the availability of materials, operating cycle time, lead time, fluctuations in the sales, etc.
3. To a dispatch the materials to the production department.

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4. To expedite the operation so that the production may be completed according to the schedule along with the feedback variation.

3. Inventory Control: Materials control or inventory control is a systematic procedure for ensuring the availability of items necessary to meet the production requirements at optimum cost. It is concerned with the following issues:

1. Requisition of materials according to requirements at word appropriate time.
2. Decision about the optimum size of the order which is the popularly known as economic order quantity (EOQ).
3. To keep the update records of the materials received, issued
4. To report the inventory data to those who use them as the decision tool.

4. Purchasing function: The main activities of purchasing are as under:

1. To select the acceptable supplier.
2. To place the purchases order with the selected supplier.
3. To expedite the delivery of material to meet the inventory requirement.
4. To keep abreast of the market conditions for the new as well recorded materials.

5. Receiving and inspection: The main activities of this section are to accept the delivery of purchased materials, to verify them with the purchase order and packing slip, to inspect them and to prepare the goods received note for stores and accounts, and to route the received materials to stores or to the using department according to the direction of the order.

System's Concept in Materials Management

Materials system includes all materials present in the productive system between the suppliers and the customers i.e., materials at suppliers and in transit from them, in receiving, in the raw-materials warehouse, in in-process inventories, in inspection for quality control, in finished goods warehouses and in transit to customers. The first step in applying the systems concept to materials management might be to construct a complex Programme Evaluation and Review Technique (PERT) network detailing all the thousands of steps needed to translate a top-management decision into a tangible reality. The product must be engineered, special tools and equipment must be designed and built, suppliers of purchased parts and materials must be located; sample parts must be tested and approved and materials and components must be ordered and received all before production can begin. Expected times would be calculated for each path of the PERT network, and the entire network would be coded on cards or tapes and put into a computer. The project itself would join a new sub-system which would coexist of course, with various other sub-systems, including materials management. All systems would interact with each other.

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Profitability and Materials Movement

Profitability and liquidity are two important factors for business. They determine whether funds are adequate, and if so, are they being used effectively? Higher inventory levels adversely affect the functioning of the organisation because the major portion of the funds may get locked in the form of materials.

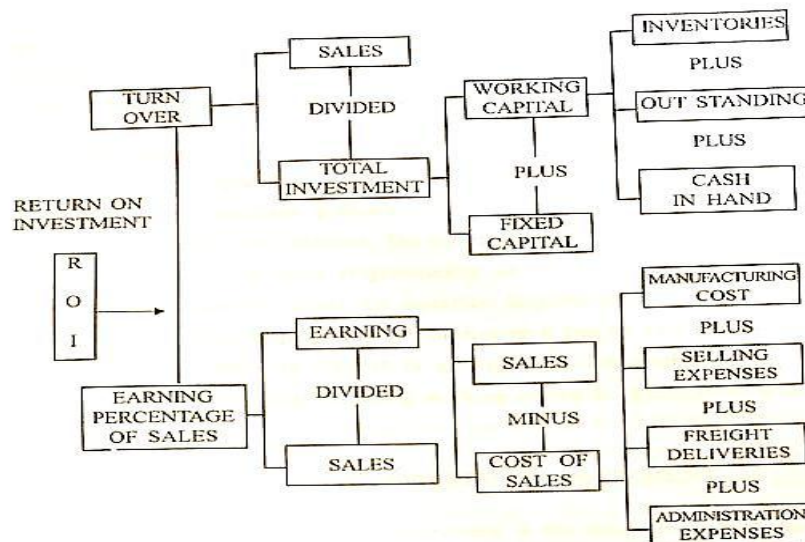


Fig. PROFITABILITY AND MATERIALS MOVEMENTS

The total capital of the company can be divided into fixed and current assets. The current assets are employed to process regular inputs in the business which is converted into output and sold to get money for re investment. Another way of looking at the financial performance of the company is by considering its operating cycle. Cash flow and materials flow components complement each other. The material cycle begins with the purchases of inventories, which are stored and converted into output and sold. The cash flows out when purchases are made and when inventories are stored and converted in the form of prices for the materials and interest charges. The money flows in when materials flow out thus the cycle begins with cash outflow and ends with cash inflow. The stages are purchase, storage, sales and collection of receipts. The shorter the operating cycle, the higher the productivity of the organisation, its purchase policies, its inventory policies, production management and its sales policies. The materials management or inventory reduction is thus, the joint responsibility of all the above indicated departments and not of merely the materials Department. About 60% of the current assets are employed in inventories or it can be said that about 90% of the Net Working Capital is employed in inventories. It may, therefore, be concluded that managing working capital is synonymous with controlling inventories.

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Limitations of Integrated Approach

The following are the limitations of integrated approach to materials management:

1. Qualified personnel are too difficult to find;
2. Co-ordination is so difficult;
3. Production control is too important to be subordinated;
4. Purchase is too important to be subordinated; and
5. It is too expensive to administer.

Scope of the Study:**(a) Companies included substitution**

The following companies have been included in the study

- (1) Hindustan Machine Tools Ltd., Ajmer (HMT, Ajmer)
- (2) Instrumentation Ltd., Kota (IL, Kota)
- (3) Rajasthan Spinning and Weaving Mills Ltd., Bhilwara (RSWM, Bhilwara)
- (4) Hindustan Copper Ltd. (Khetri Copper Complex, Khetri).
- (5) Sambhar Salts Ltd. (Sambhar).

Objective of the Study:

The most important objective of the present study is to point out the areas where cost saving in materials is possible. The other important objective of the study may be as follows:

- (a) ME Reduction of materials cost by systematic use of scientific techniques.
- (b) Maintain high turnover for release of working capital for productive purpose.
- (c) Reduction in cost of possession.
- (d) John Maintain continuity of production by ensuring uniform flow of materials. ed exhaustively Al
- (e) Maintain quality of purchases and saving foreign exchange through economic use of foreign purchases and import substitution.
- (f) Setting high ethical standard and cordial relation with vendors.
- (g) Conserve the material in scientific way.

Hypothesis:

This study is based on the hypothesis that the selected public enterprises in India have suffered losses and earned a low level of profit because of inefficient management of materials. Their profitability and productivity can be increased only through scientific materials management system.

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The effectiveness of materials management depends upon cost control and cost reduction, which will automatically increase the profitability and productivity. In brief it has been presumed that the materials management in the selected public enterprises in India is not proper. proprietor enterprises but also helps situations, the factors and the

Methodology:

Management personnel representing every segment of materials management have been interviewed on the census method. 'On-the-spot study' has been undertaken to understand the systems and procedures of purchase, receipts, inspection, storage and issue, materials handling, techniques of management and control of materials. Selected industrial journals, official reports, publications and research literature available have been used exhaustively for a conceptual background. Annual reports and accounts of various enterprises for the period under study have been collected and studied for the analysis purpose.

Significance of the Study:

The slightest efficiency in the materials management releases substantial absolute advantages in relation to cost due to its strategic role. During the earlier years, materials management was not considered as an important activity but was treated as subsidiary function to the manufacturing management. Since early sixties materials management has been recognised as an important activity in management of various organisations, the importance of materials management lies in the fact that the proper materials management helps in reducing materials cost and ultimately improves the profitability and the rate of return on investment.

Limitations of the Study:

Efforts have been made to collect primary data for the enterprises under study. Since collection of primary data is a difficult task hence most of the study has been based on secondary data.

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-

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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.

***Head of Department
Department of Commerce
Sankriti College , Jaipur (Raj)**

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