A Historical Overview and Recent Developments in the Area of Material Accounting, Control and Management

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Abstract

Materials accounting, control and management is the concept that integrates all the activities of planning, scheduling and controlling materials right from design till final production including delivery to the customer. Thus, it establishes a single responsibility over the material flow system, with full accountability for quality, delivery and cost. It undertakes the function of planning, organizing, integrating and measuring the volume and flow of materials. Materials accounting, control and management may thus be referred to an activity having all control over the materials used and the goods produced by the manufacturing organization.

Keywords: Financial, Accounting, Recent Development, Management.

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INTRODUCTION

In the words of Bethel and others, “Material Accounting, Control and Management” is a term used to Controlling the kind, amount, location, movement and timing of the various commodities used in and produced by the industrial enterprise”. Some authors of commerce, management and accounting are of the view that Material Management includes accounting and control also. In the same way they also say that in broader sense materials and inventory are the same term. They are of the view that materials also include,” the sum of the value of raw materials, fuels and lubricants, spare parts, maintenance, consumables, semi-processed materials and finished goods stock at any given point of time.(1) S.E. Walter state, “The term materials refer to the stock piles of a product a firm is opening for sale and the components that make up the product. James, H. Green observed”, Materials refer to the moveable articles of the business which are eventually expected to go into the flow of trade. According to Dr. N.K. Sharma, “Material management involve all activities relating to material starting right from the time the need of materials arises and ending with its issue to production department”. In this way materials management such as planning, organizing, directing, controlling and coordinating so far as they are related to materials. According to Vibha Sharma, “Material management is the planning, directing and coordinating of all those activities concerned with materials and inventory requirement, from the point of their incitation to their introduction into manufacturing process”. It begins with determination of materials quality and quantity and ends with its issue to production in time to meet customer’s demands on schedule at the lowest cost.

Materials as we generally know it, means the raw materials used in the manufacturing process to be transformed
into finished product. In other words, the raw materials of which the finished product is made may be known as materials. For various study it is observed that material means tangible property which include:

(1) For sale in the ordinary course of business, or
(2) In process of production for such sales, or
(3) For consumption in the production of goods, or services for sale.

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Thus, materials management covers all aspects of materials and material supply necessary for converting raw materials and ancillary into the desired finished products. It is thus concerned with planning and programming of materials pre-design value analysis, marketing research for purchases, procurement to all types to material including packing and packing material, stores and inventory control transportation costs of materials, materials handling and operation research of materials. Thus, the functions of materials management can be summarized as follows.

(1) Materials planning and programming
(2) Purchasing of raw materials
(3) Materials control  
(4) Receiving, storekeeping and warehousing  
(5) Value engineering and value analysis  
(6) Transportation—internal and external  
(7) Materials handling  
(8) Disposal of scrap and surpluses.

**Objectives of Material Management**

The operating control of materials must meet two opposing needs—the maintenance of materials to adequate size and diversity for efficient operations as well as maintenance of materials which are now financially detrimental. A major objective of a good system of operating control of materials is to be able to place an order at right time from the right source to acquire the right quantity at right price and of right quality. The main objective of inventory management is to create a Balance between the desire to minimize capital investment on the one hand and to avoid extension of the delivery period on the other.

Although it is essential to have necessary stock of materials but excessive stock of materials is idle resource of an enterprise. Materials management should, therefore, strike a balance between too more materials in stock and too little materials in stock. Efficient management and effective control of materials helps in achieving better operational results and reduces investment in working capital.

Both excess and inadequate materials in stock are not desirable. They are two danger points within which a textile company should operate. The objective of materials management should be to determine and maintain the optimum level of materials, which will lie between two danger points, excessive and inadequate stock of materials.

It is often true that major part of the stock of materials will be concentrated in a small percentage of the items involved and any attempt at materials management should recognize this possibility. A system of materials control can be designed by Textile Company to provide on a continuing basis control data relating to both current and anticipated materials requirements facilitating the prediction of possible shortage of materials due to peak or seasonal demands. Where the amount invested in stock of materials is large and the operations processing techniques. Standardization of materials can also be considerably reducing the amount of capital invested in stock of materials. When I discussed objectives of materials management with textile companies selected for this study, I find following:

1. To procure materials at the lowest price.  
2. To keep storage and inventory carrying cost at the minimum and increase the turnover.  
3. Smooth and guaranteed supply of materials, which also ultimately reduces the per unit cost of production.  
4. Efficient material handling and storing reduces per unit cost of production.  
5. For better management of material, one must forecast future prices, costs and general business activities in the market.  
6. There should be proper coordination between the procurement, receipts, storage, inspection and dispatch of material.  
7. There should be proper consistency in the quality to materials purchase.  
8. Materials department of Textile Company can contribute to the development of new materials and new products.

There may be many other sub-objectives but broadly the above main objectives cover the essence of the materials management. In brier chief objectives of materials management are to avoid excessive and inadequate levels of materials and to maintain sufficient stock.
of materials for the smooth production and sales operations. (5)

**Importance of Materials Management**

Since materials are equivalent to cash, and since they make up an important part of the total cost of textile goods, it is essential that materials should be properly safeguarded and correctly accounted for. Proper control of materials can make a substantial contribution to the efficiency of a textile company. The success of a textile company largely depends upon efficient purchasing, storage, consumption and accounting of materials. (7)

The cost of materials represents in textile companies about 30 to 40% of the total cost. The cost of materials used in production after surpasses the total cost of labour and factory overheads, as the ability significant factor in profitable operations of a textile company. The importance of materials control through proper planning, purchasing handling and accounting cannot be over-emphasized.

It is, therefore, apparent that, for most of the textile companies, the formulation and execution of sound materials management policies must be a managerial responsibility of the highest order. It is often said that more textile companies fail on account of inefficient fact that the control of materials has been one of the most neglected problems of management of textile companies. (8)

The main objective of top management must be the avoidance of “Over investment” and “under – investment” in material- a proposition that appears to show that there must be some right amounts of materials investment for maximizing profits. However, while it is easy to point out the harmful effect of over-investment and under-investment, it is most difficult to detect over-investment and under-investment in actual situation. Materials management is an important activity of every textile manager. It is the lifeblood of a textile company. D. Schal and W. Haley charlas rightly remarks, “managing the level of investment in materials is like maintaining the level of water in a bath tub with an open drain”. If water is let in too slowly, the tub is soon empty. If water is let in too fast the tub overflow. Like the water in the tub, the particulates item of materials keep changing, but the basic level may remain the same. The basic financial problem is to determine the proper level of investment in materials and to decide how much materials must be acquired during each period to maintain that level. The efficient management of materials enables in achieving better working results and reduction in working capital. L. Wood Joseph observes, “it is essential to keep a sufficient level of materials in business yet excess materials is an idle resource of a company.

**Advantages of Material control**

According to the analysis of cost accounts of selected five textile companies of India for the years 2001 to 2010 materials cost is about 40 to 50% of the total cost. Through effective materials management, this cost content may be reduced up to reasonable level. In my view following are some important advantages of materials control in Textile industry of India:-

1. With the help of effective materials management indirect cost of textile companies and cost of materials movement are well within control.
2. Efficient materials management reduces the risk of loss from fraud, theft and wastages of materials.
3. Adequate utilization of equipments and machinery is ensured because effective utilization of materials is possible only when equipments and machinery are effectively used.
(4) With the help of effective materials management loss of time of direct about is minimized.

(5) Cases of late deliveries are most infrequent because delays in production due to non-availability of lack to materials are prevented by arranging the proper supply of materials in required quantities to the production at the right time.

(6) Length of manufacturing cycle is required to the minimum due to effective utilization of men, materials and machine and thus reduces the capital tied up in materials. (9)

**Essential characteristics of material**

1. Co-ordination between various Departments: There should be proper co-ordination between various departments dealing in materials viz. purchasing department, stores departments, receiving and inspecting & accounting departments.

2. Central purchasing Department: There should be central purchasing department under the control of a competent and expert purchase manager.

3. Proper scheduling of materials requirements

4. Classification of Material: There should be proper classification of materials. Material requirement should be properly planned.

5. Perpetual inventory: The perpetual inventory system should be operated so that up-to-date information is available about the quantity of material in stock.

**Types of Materials**

A textile company maintains materials for various purposes. Managers are expected to understand the types and purposes to materials. Similarly there should be a system of knowing the existence of materials otherwise it may not come to the notice at the correct time of taking crucial decisions. In textile industry stock of materials can be of the following five types:

1. **Movement or process Materials** Movement materials are also regarded as transit or pipeline materials. These materials exist because transportation takes time in reaching the materials to the point of consumption. For example, when coal is transported from mines to and industrial town by trains, then coal while in transit cannot provide any service to the customers for power generation or for burning in furnaces.

2. **Buffer Materials** It is kept in the form of safety stock to protect against the uncertainties of demand and supply. A textile company generally forecasts the average demand for the various items that it needs. But the actual demand may not exactly match the forecasts and could well exceed it. Similarly, the average delivery time/lead-time may be forecasted. But unpredictable events could cause the actual lead – time to be more that the forecasted time. The purpose of keeping buffer materials is to provide a higher level of customer service and reduce the number of stock outs and back orders. If a textile company doesn’t complete an order demand might be lost forever, leading to temporary/Permanent loss of customer goodwill.

3. **Seasonal Materials or Anticipation Materials** This is held to cater for higher demand during a particular period. It includes specialized items like air coolers; crackers, umbrella & raincoats are required against very specific sudden demand for a very short duration, but in large quantity. It smoothen the production process producing for a longer duration on a continuous scale rather operating with excessive overtime in one period & then let the production facility (plant) to be idle or close down for the reason of inadequate or no demand during the off-season.
4. Decoupling Materials

The purpose of decoupling materials is to decouple or disengage different parts of the production system. Different machines/equipment operate at different speeds and people normally work at different rates, some slower and some faster. There would be no need of such materials if all the machines and people work at the same speed. But then in that situation of a machine breaks down, the entire production process might stop. Hence, the decoupling materials act as shock absorbers in the case of varying work rates & machine failures etc.

5. Cycle Materials

These materials are kept due to the reason that purchases are generally made in lots rather than exact amount, which may be need at a point of time. There would be no cycle materials if all purchases are made exactly as and when the item is required. But, practically, purchases are made in lots to save the cost involved in placing an order. As the cycle materials are related to purchases in lots, they are also termed as lot-size materials. The larger the lot size the larger would be the level of cycle materials and vice versa.

**Basic Policy Decision for Material Control**

Following Policy decisions are necessary for development of an integrated materials control system in a textile company:

- Availability of working capital with Textile Company: As stock of raw materials requires investment of capital and therefore working capital availability of investment in a particular type of raw material should also be considered keeping in view the significance of raw material in production process of that textile company.
- Availability of storage space: The maximum quantity of a particular type or raw materials depends upon the storage space available to that item or the space to be allocated or allocated or already allotted to the other items.
- Investment in raw materials: Every textile company has to carry stock of raw materials. The investment in raw materials increases with purchases and goes down as raw materials are issued for conversion into the production process. The following influences the level of stock of raw materials: (i) Volume of safety stock to have and uninterrupted production. This is again divided into parts: (a) Procurement lead time and (b) Volume of usage (ii) Economy in purchase of large lots (ii) fixing re-order level and (iv) Balancing of cost and risks.
- Management policy of service to his customers: This is concerned with the determination of the period within customers order is to be executed by the textile company.
- Kinds of purchasing policy: The textile company can follows any one of following purchase policy:
  - Purchase by requirements
  - Contract purchasing
  - Speculative purchasing
  - Purchasing for a specified future period
  - Market purchasing
  - Just in time purchasing

**Functions of Materials Management**

In textile companies following are some major functions of materials management:

(1) Material planning: To set up the consumption standards for every type of material required in manufacturing programmed.
(2) Scheduling: It is the proper scheduling of the procurement of materials that meets the needs of manufacturing cycle of textile companies.
(3) Inventory Control: There should be minimum stock of material without reducing the stock.

(4) Purchasing and sub-contracting: It is one of the activities of materials management and planning department to finalize a sub-contract for manufacturing of a specific component, after taking in to consideration the available technology, Know-how, competitive prices, delivery schedules and factory resources.

(5) Warehousing and Materials Handling: There should be proper storage facilities to avoid unnecessary handling. Receipt and issue of material should invariably be against proper documentation.

(6) Salvage and disposal of scrap: There should be efficient arrangements for the disposal of scrap and salvage.

Steps in Materials Accounting and materials Control
Following are some important steps which are necessary for accounting of materials:

(1) From store material is to be issued only when proper indent is received from production department.

(2) The balance of the store ledger and bin card should be brought up-to-date. It will be a continuous process and applies to every item of materials in stores.

(3) The cost of the materials is recorded in the stores ledger job card, process account etc. The value of closing stock of material is also calculated at the end of period.

(4) The value placed upon such materials is a matter of judgment.

(5) The maximum, minimum, order, average, and danger quantity of all types of materials should be fixed with a great care. These limits can be set up only by judgments through experience and careful observations. Such observations after in a great reduction of materials thereby reduction in the blocking of capital and saving in the interest on that capital.

(6) Quantity of the materials required can be calculated from the statement of production planning or from the schedule of items mentioned in the contract.

(7) Quantity survey can help in estimating the exact requirements of the materials.

Steps in Material control

(1) Planning the materials and operations.

(2) Adequate physical control of materials.

(3) Proper storage.

(4) Effective purchase policy for materials.

(5) Security of stores department.

(6) Proper record of purchase, storage, issue and utilization of materials.

(7) Fixing responsibility of performance.

(8) Measuring results.

Cost for Materials Decisions
Cost of Materials decisions can be divided into following two points:

Associated Cost
The simplest approach of calculating optimum investment in materials is to select the materials level that minimizes total long run costs. Materials entail two types of associated costs - those of carrying and those of not carrying enough. The optimum solution minimizes the total of these two types of costs which are:

Cost of carrying the materials
1. Risk of obsolescence’s
2. Interest on investment
3. Handling and transfer
4. Clerical costs
5. Insurance
6. Materials storage taxes
7. Rent of space

Plus Cost of carrying enough Material
8. Foregone quantity discount.
9. Disruption of production with added costs of expediting, over-time, set-ups, hiring and training.
10. Extra purchasing and transportation costs.
11. Loss of customer goodwill.
12. Extra costs of uneconomic production runs.
13. Contribution margins on lost sales.

The conflict behavior of above two classes of costs must be important. Thus if company decides to carry huge material costs of carrying would go up but a number of costs of not carrying would come down. (11)

**Relevant Cost**
The amount of many relevant costs will differ depending on the length of time under consideration and the specific alternative uses of resources. Thus, if stores department is owned and cannot be used for other purposes, the differential stores department costs are zero, on the other hand if space can be put for other profitable purposes or if there is rental costs geared to the space occupied, a pertinent cost to space usage for materials must be recognized.(15)

We know that we need money for storage of materials: thus we must consider interest of carrying materials. There is some problem of calculation amount of interest. In practice, interest rate may be taken current borrowing rate, long term average cost of capital or some other rate which is suggested by stores manager. The proper rate of interest would depend upon opportunities available to management-rate may be higher or low depending upon specific situation.

Other cost that may or may not be relevant in policy decisions include over-time premises on rush orders that would not be required if bigger stock of materials were carried, idle time caused by material shortages, emergency expediting , extra transportation costs, extra physical count-taking obsolescence risks, and extra moving and handling costs.

Materials cost that are common to all alternatives are not relevant, thus, may be ignored. An important of inventory control is that production and materials decisions are seldom affected by minor variations in cost factors.

**Problem to be investigated**
Materials management is an important management activity in every industry of modern world. The increased pace of industrialization has in its wake highlighted a number of management problems, one of the most important being the problem of materials management. No textile company can successfully operate without managing materials, because materials are the very lifeblood of every modern industrial company. Materials should be managed properly in terms of quantity, quality, price, time and place, failing which these add to cost and decrease profit. Materials management has become a basic part of every organization that produces a product or service or economic value. A material is not only essential to manufacturing industries but also to service industries. (12)

While we have sufficient natural resources to exploit, but our capital resources are extremely limited. Hence, within the limited capital at our disposal; we have to increase its productivity. Unfortunately the importance of scientific materials management has not been fully realized in India and a very little attention has so far been paid to the task controlling investment in materials through the use of various scientific techniques. Scientific materials management not only bring about substantial cost savings but also results in improved operational efficiency, reduction in materials cost, reduction in storage space, reduction in damage of materials, smooth flow of operations reduced employee fatigue and so on, therefore , effective materials management will result in a relatively lower materials

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utilization ratio, low write-off of obsolete of deteriorated materials, and few instances of manufacturing stoppage of lost of sales due to stock-outs.

Present Study
The textile industry of India occupies a unique position in the economy of India. The objective of present research work is to study the level of materials and its accounting, control and management practices as followed in the selected textile companies of India from 2001 to 2010 to determine the degree of efficiency with which the function of materials management has been carried out in these companies and to suggest measures by which excessive investment in materials can be reduced to the level required for running the production more efficiently for achieving maximum rate of profitability.

Management’s role in any organization for the acquisition, disposition and control of factors of productions is very important. Without proper assortments of materials, serious marketing problems can develop with respect to revenue generation and customer relations. The importance of materials management in textile industry of India is strongly needed, because, it not only effects textile industry of India, but indeed the whole of the economy of India. Poor planning and haphazard methods of materials control may cripple this industry, excessive stock may immobilize its capital resources and bad traffic may retard its working progress. The so-called “Industrial recession”, is the result of poor materials accounting control and management. (13)

The Importance of materials management lies in the fact that any significant contribution made by materials manager in reducing materials cost will go a long way in improving the profitability of textile company. A big increase in the rate of profitability can be achieved by concentration on the materials cost. In fact, as market pressure intensifies textile companies, will be forced to cut down the cost and here the materials manager steps into play his role.

Materials accounting, control and management provides tools and techniques to reduce materials cost substantially. Materials form an importance part of the current assets of textile companies of India. (14)

So far as India is concerned, inventory management is a must whether it is textile industry or any other industry and whether it is a small or a large sized company. Optimum utilization of all the available resources and the avoidance of every type of wastage, spoilage, and theft of materials is required for an ambitious programme of economic development. Materials management offers a wide scope for reducing costs, saving foreign exchange, concerning scarce materials improving productivity and increasing profits. It will be readily understood that it is much easier to reduce materials costs than to reduce labour costs or overheads.

References


