
UNIT 2 STRATEGIC ROLE OF MATERIALS MANAGEMENT

Objectives

At the end of this unit, you should be able to:

- Define the key advantages of material management process;
- Identify the scope of material management;
- Describe the strategic role of material management and its interfaces; and
- Discuss the possibility of material management in an organization.

Structure

- 2.1 Introduction
- 2.2 Objectives and Advantages of Materials Management in an Organization
 - 2.2.1 Why Integrated Materials Management?
 - 2.2.2 Advantages of Materials Management
 - 2.2.3 Scope of Materials Management
- 2.3 Roles of Materials Management in an Organization
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2.1 INTRODUCTION

The basic objectives of material management in an organisation are:

- To obtain materials at the minimum price, however, this minimum price must not compromise on the quality of goods and the continuity of supply.
- To minimise the inventory of an organisation without sacrificing the timely availability of materials. This frees up working capital of an organisation for other useful organisation purposes.

Thus, the bottom line of any material management system is the minimisation of material procurement, storage and handling costs, without compromising quality and availability of materials.

Material management procedures are strategically placed within an organisation. They have different meanings for different people. Some of the material management procedures may give more weightage to purchasing, while others may attach a lot of importance to inventory control. A good material management process may have a strong backing of quality management and quality assurances of material purchasing and handling. This combination has a great impact on profitability and productivity as this may reduce the rejection rates of materials, thus, bringing down the overall cost of production in a well managed system. It is sometimes stated that it is the control of quality from the procurement to final distribution of the product that improves productivity and corporate image. A strong logistics system that can create a steady flow or continuum of materials flow into the production pipeline is the need of the hour. It is also claimed that such a continuum can minimise the need for material management. However, the 1

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What is this continuum? And how are the quality control processes associated and linked to this continuum in an organization?

Thus, the material management is an important strategic issue within an organisation. Let us discuss more about its strategic placement in the subsequent sections.

2.2 OBJECTIVES AND ADVANTAGES OF MATERIALS MANAGEMENT IN AN ORGANIZATION

Materials Management has several core objectives and many secondary objectives. The core objectives of material management are:

- Proper, cost effective material procurement.
- Proper storage of materials so as to minimize wastages and material hold ups.
- Making available the material **TIMELY**.

A good material management system will keep up to data records of all the information generated in it, preferably using a computer-based system.

In addition to these primary objectives a materials management system indirectly fulfills many secondary objectives also. These secondary objectives are normally related to the functions of a material management system. Some of these secondary objectives are:

- Identifying new or better sources of supply
- Development and sustenance of relationships with the vendors
- Creating a standardized quality of the products
- Performing the value analysis of inventory. This can be related to the cost of materials.
- Creating a smooth flow of materials and information among the various sections of materials management system.

The material management system works under the broad basic objectives of an organization that is “maximum profit with sustained growth and research, satisfied customers and staff of the organization”. The material management supports this objective by providing support through:

- Continuity of supply by maintaining a uniform flow of materials,
- Reducing the costs of materials purchased and handling by using scientific techniques and electronic tools. The use of scientific tools and techniques for materials and information management,
- Minimizing holdups of working capital and performing effective inventory control,
- Releasing working capital by ensuring effective control over inventories,
- Providing high quality at the lowest price, and
- Development of better relationships with customers and suppliers.

2.2.1 Why Integrated Materials Management?

Some of the key functions that are undertaken during the process of material management are:

- Materials Planning
- Materials purchasing
- Receiving of Materials
- Stores
- Inventory Control
- Scrap and Surplus disposal

A material management system integrates all these functions as a single function. But what is the need of such integration?

If we do not integrate the functions as above then they can operate of their own and integration can produce suboptimal results. This is analogous to a situation when you want to make a computer hardware, you buy all the sub-systems that are cost optimized in their own way, for example the mother board may support fastest CPU, RAM may have maximum capacity in the same cost etc., but when you assemble your PC you find that all these components are not compatible to each other. Similarly, one expects similar strains among the functions of the material management system, for example, although high procurement may reduce cost but is it really justifiable keeping the inventory control function requirements in considerations. Thus, various functions have conflicting optimizing requirements. A material management system has to bring solution within these conflicting requirements.

However, since the material management system is not controlled by a single sub-system, enforcing such requirements may create a problem. Therefore, in an integrated set up, a materials manager can be made responsible for inter-related function control. S/he may be allowed to control and coordinate with a view that ensures proper balance of the conflicting objectives of the individual functions.

2.2.2 Advantages of Materials Management

Material management has created a niche in many organizations, which have implemented the integrated materials management. These organizations usually enjoy the following advantages:

- Better accountability on part of materials as well as other departments as no one can shift blame to others.
- As materials management is handled by single authority, it can result in better coordination, as it becomes the central point for any material related problems.
- Materials management department makes sure that better quality material is supplied timely to the requesting departments. This can result in better performance of the organization.
- A materials management system is typically controlled through an information system, thus, can help in taking decisions related to material in the organization.
- One indirect advantage of material management is that good quality material develops the ethical and moral standard in an organization. However, please note there is no study on this issue.

2.2.3 Scope of Materials Management

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However, after discussing so much about the role of material management it is worth mentioning the scope of the material management also.

Although the scope of a material management system is vast, yet we can define the following functions as its scope functions.

Material Planning and Controlling: One of the key functions that identify the scope of the materials management is the materials planning and control. This function is based on the sales forecast and the production plans of an organization. The activities of this function are:

- Estimation of materials requirements
- Preparation of materials budget of the organization
- Estimating the levels of inventories required in the organization
- Scheduling the orders placed with the vendors to ensure availability of material
- Controlling by monitoring of production vis a vis sales.

Purchasing: The purchasing is another major function for the materials management. This function contains the following activities:

- Identification and selection of possible Suppliers
- Finalizing the terms and references of purchases that are to be made.
- Placing the purchase orders this activity may be staggered as per the inventory control function.
- Managing the purchase orders till delivery of materials
- Giving clearance to payment of received good; and
- Analyzing the performance of the suppliers and rating them.

Stores and Inventory Control: This function helps in physical control of materials. It has the following list of activities:

- Minimization of material losses due to obsolescence and handling. This activity controls the timely disposal and efficient handling of materials.
- Maintenance of stores records along with proper location and stocking of materials.
- Physical verification of stocks and reconciling.
- Performing inventory setting and control. Some such activities include performing ABC analysis, fixing economical ordering quantities, identification of selling safety stock levels, performing lead-time analysis etc.

2.3 ROLES OF MATERIALS MANAGEMENT IN AN ORGANIZATION

Materials Management is a system that tries to ensure the following for an organization:

- Availability of products desired by customers. These products should be prepared with best obtainable cost of manufacture.
- Quality and cost of manufacture should be most affordable for the organization. Although quality and cost of production are the responsibilities of the Production Manager, however, material management can support this process by the timely delivery of quality material.
- Advise the sales pricing. Although pricing is a sales function, but Materials Management with proper record keeping can be used for generating price data for the various destinations. For example, the cost of the materials used for a product can be determined through this system. Thus, material management can help in determining the cost of the product.

Let us revisit the materials flow process that you have seen in Unit 1. As shown in Figure 2.1, a simple customer demand can trigger a series of flow of material along with lot of information flow. Please notice that material management will be required across the entire life cycle of the material flow. Please also note that during the material flow a lot of information is generated, which can be used strategically for various purposes as, explained in the following paragraphs.

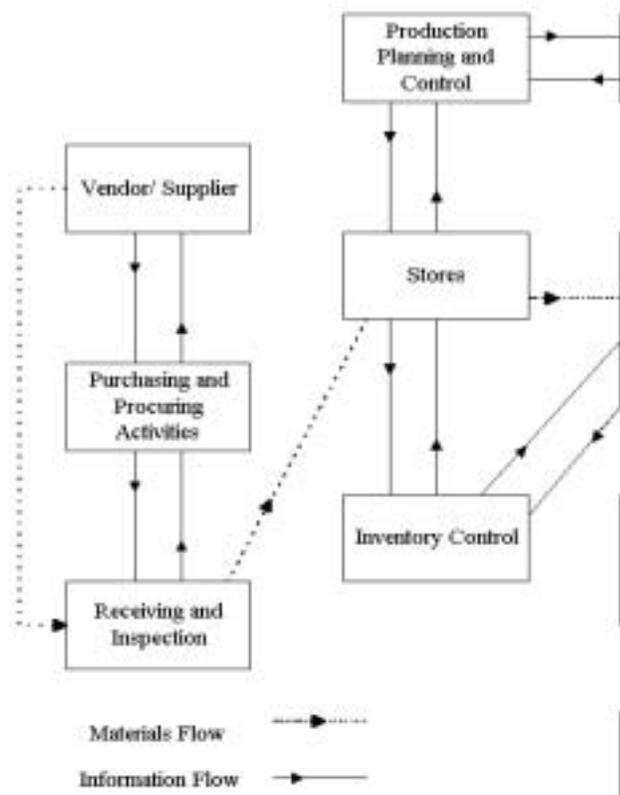


Figure 2.1: Material flow process

Source: Dutta A.K (1998), Materials Management: Procedures, Text and Cases

In order to further define the strategic role of the material management let us relate it to the internal interfaces of material management in somewhat more detail. It is to be noted that material managements indirect benefits already have related it to the external interface. A brief introduction to interfaces of materials management as described in “Source: Dutta A.K (1998), Materials Management: Procedures, Text and Cases” has been given in table 1.4 of unit 1 of this book.

Material Interfaces: and role of Material management

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Market forecasting: One of the key role-played by materials management is to forecast the future demands. For example, if a university like IGNOU is printing study material for its students, it need to manage the raw materials and well as the finished product that is the printed blocks. The first point here would be to ascertain what would be the demand of study material for the various Programs; this forecast can be made on the basis of material usage patterns and increase in demand for the last few years, in addition expected enrolments for programs that are new, this information can be predicted on the basis of response to new programs of similar type/ area during last few years. Thus, materials management has a great role to play for an organization. But remember here, a forecast is always an estimation.

Production: One of the key roles of material management system would be to see that the process of production goes unhindered. For example, once again the case of the university as above, printing would require availability of printing paper and art card paper - required for covers. If any of the two papers is out-of-stocks the printing process cannot continue. In addition, please note that the demands have been predicted thus the material requirements can be calculated with this data. In production organizations making predictions is even more difficult as the sales are to be predicted without much of a basis.

Finance: The material management is strategically very much linked to cost reduction. The cost may include the inventory cost and thus, have a major impact on the material budget. For example, one must procure the paper for the university, so that the paper requirement of printing is fulfilled in time, however, this should not cause any unnecessary hold up of the finance. The hold up time should be minimum. For example, if study materials are to be sent to student in the month of May-June then procurement of paper may be done in January-February so that study material can be printed in March-April.

Inventory Control: One of the key strategic roles of material management would be to minimize the inventory of an organization. This also results in cost minimization. In general a production schedule is made in an organization. This should be synchronized with the material procurement and supply so that the production process is not hampered. For example, as stated above the material should be procured in January-February such that the printing process can proceed smoothly.

Inspection or quality control: This is a very interesting interface as the quality of material for different types of an organization is impacted during materials management cycles, though materials management is not directly responsible for quality, yet it can cause indirect effects on the quality of products. The products, whose quality deteriorates with time, are very likely candidates in this category. For example, if we buy paper 3-4 months in advance then proper storage conditions may need to be kept in store to avoid any deterioration of quality of the paper. This is also the problem of inventory control.

Material handling, traffic and physical distribution logistics: The role here is to see that the material is handled and distributed easily. For example, the paper stores of the university may be located outside the campus and may be near the place where most of the printing presses are located. Also since the university sends the study materials through post, a unit of distribution may be located near some head post office.

The material flow process is given in Figure 2.1. Please note that in Materials Flow Systems how the material is flowing but more important than that is the information flow. Materials management system activities have impact on:

- Purchasing and procurement activities sometimes it determines the details of past performance of vendors, quality, etc details which may help in proper selection of vendors. If so needed the orders can even be distributed over time.
- Receiving and inspection data is very important quality control activity during this process, where information about the quality is registered.
- Production planning information/ sales information does impact the process of material management.

Thus, Materials Management is a social technology, which demands professional expertise of its own and have a direct impact on the cost effectiveness of an organization. It can also be defined in terms of the functions that are needed for the coordination of planning, sourcing, moving, storing and controlling materials in an optimum manner so as to provide a pre-decided service to the customer at a minimum cost. But which department should be made responsible for coordinating the functions of Materials Management?

In the recent past the Materials Management is not tied up to any group within an organization rather it is largely system-oriented, which takes into account functional dependence with a wide range of partial activities, where utility of materials is enhanced as these pass through each of the stages of the production process till the finished product. Thus, material management may be found a very suitable component that needs to be controlled by a centralized database or enterprise resource planning (ERP) packages.

2.4 FUNCTIONAL ROLE OF MATERIALS MANAGEMENT

The material management for an organization is very important. Let us define some basic roles of it for various organizational functional Activities in the following table:

Table 2.1: Role of Materials Management in Various Organizational Functional Activities

Role of Material Management	Description
<i>Decision on making the material or buying it.</i>	Such a decision may be taken if: <ul style="list-style-type: none"> • Supplies are not adequately obtained successfully in the past • The quality of supplied goods is not of standard • The volume requirement of sales is exceeding the possible manufacturing capacity • The material fails in the cost analysis
<i>Materials Forecasting</i>	The materials management needs to forecast the requirements. Some of the questions that need to considered for it are:

Materials Management: An Overview	<ul style="list-style-type: none"> • Is this material being needed for long time? • Will there be any requirement after 10 years for this material? Will the supplier exist after 10 years • Are there any changes or technological break- though for this material? • Are the prices going to rise in the future?
<i>Materials Planning and Budgeting</i>	<p>Materials planning is of the major control activity that an organization needs to put in place. It is feasible because of materials management.</p>
<i>Selection of Potential information sources</i>	<p>This will include selection of suppliers, and other market research information such as price trends, corporate environment etc. The materials management data may help this task.</p>
<i>Purchasing with a difference</i>	<p>Purchasing commits a lot of capital of an organization. Materials management information allows very creative purchasing by organization as it sees most of the trends. It also helps while purchasing in uncertain situation.</p>
<i>Forecasting of Price</i>	<p>This is most essential function thus, has been kept separately also. A good price forecasting system based on material management and market research information may bring an organization into a win-win situation.</p>
<i>Store Management and inventory control with a difference</i>	<p>Materials management helps in the store functions such as: control of material being received, proper storage, minimization of obsolescence, highlighting of unused stocks, ensuring good housekeeping, verification of stock, timely delivery of goods, proper storage and presentation of materials, dealing with scrap materials etc.</p>

2.5 SUMMARY

This unit provides a brief account of the roles of materials management in an organization. The unit first explains the basic objects of materials management in an organization along with the advantages and disadvantages of materials management. The discussion is followed by defining the scope of the materials management process. The strategic role of materials management is explained in the context of interfaces of materials management as well as with respect to the functions in materials management. You can refer to the further readings for more detail on the topics.

2.6 SELF ASSESSMENT QUESTIONS

- 1) What are the objectives of Materials management? What are its advantages?
- 2) What are the activities of materials and information flow in an organization?
- 3) What is the scope of materials management?
- 4) Define the various roles of materials management in the context of internal and external interfaces to materials management system.
- 5) Describe the role of material management in performing various functions in an organization?

2.7 REFERENCE AND SUGGESTED FURTHER READINGS

Christopher M. (1992), *Logistics: The strategic Issues*, Chapman & Hall, London.

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Sharma S.C. (1997), *Materials Management and Materials Handling*, Khanna Publishers, New Delhi.