



MATERIALS MANAGEMENT

SCOPE, OBJECTIVES & SIGNIFICANCE

WHAT IS MATERIALS MANAGEMENT?

- **Materials management** is a very common term used in manufacturing. It is the process that organizations use to **plan, organize, and control** the steps they use to manage tangible components within its business processes.
- For example, an organization that manufactures cars needs to purchase wheels, engines, and windows. The process by which these materials are sourced, purchased, stored, and utilized is materials management. Besides this, the process of buying office equipment and stationary like printing paper and computers also falls within materials management.

OBJECTIVES OF MATERIAL MANAGEMENT

Materials management can be very diverse and vary from one organization to another. However, holistically, the main objectives are:

1. Buy goods or services that have the **right quality**: This means that there is need to consider specifying the quality levels expected from all the materials it purchases and maintain ways to monitor and measure these quality levels.
2. Buy goods or services in the **specified quantity**: To ensure that inventory levels are always monitored in order to have the most appropriate quantity in order to reduce situations of excess storage or on the other hand a lack of inventory.
3. Buy goods or services at the most **appropriate time**: This means the manufacturer would have to think about maintaining continuous supply of the required raw materials to help reduce the interruption of ordering and purchasing of raw materials.
4. Buy goods or services from the most **appropriate source** or supplier: The manufacturer would look for the best suppliers for its raw materials and then develop good relationships with the suppliers. This ensures that the suppliers provide the best product.
5. Buy goods or services at the **best price**: This means that wherever possible, the manufacturer should aim to buy raw materials at the lowest price while still maintaining the most appropriate quality.

OBJECTIVES OF MATERIAL MANAGEMENT

Primary

- Right price
- High turnover
- Low procurement & storage cost
- Continuity of supply
- Consistency in quality
- Good supplier relations
- Development of personnel
- Good information system

Secondary

- Forecasting
- Inter-departmental harmony
- Product improvement
- Standardization
- Make or buy decision
- New materials & products
- Favorable reciprocal relationships

MATERIALS MANAGEMENT & SUPPLY CHAIN MANAGEMENT

Material Management is an important process in **Supply**

Chain Management which is essential to transform inputs into outputs. It is the process of planning, organizing, staffing, directing and controlling the flow of **materials** from their initial purchase to destination.

The **supply chain process** includes the steps an organization takes to **source and identify** suppliers. It also involves purchasing, shipping, and storing raw materials it uses in the production or manufacturing process.

Materials management ideally means ensuring the materials required for a given process are there at the right place and time. For example, the car manufacturer has to make sure the wheels or windows of the car are available as soon as they are needed for assembly.

For materials management to be effective, it needs to work within a well-structured supply chain process. Therefore, for our car manufacturer to know when it's time to contact the supplier for new wheels or windows, there must be a well-structured process that outlines when those parts are needed during car manufacturing.

IMPORTANCE OF MATERIAL MANAGEMENT

- Material management is an essential aspect/process of every manufacturing firm. It entails to the procurement of the material, its transportation and effective management of the inventory, right from the manufacturer to the shelf. Material management has its own significance in enhancing the productivity of the firm. It is basically a labour-intensive process and needs regular monitoring of the purchased material, inventory management and distribution of the material.
- The process of planning, organising, monitoring, implementing and controlling the flow of materials to and fro a firm is quite intimidating. Hence, the process needs to be handled smoothly and skillfully. That is why companies hire professionals for the task and pay them a handsome amount for the same. In such an opportunistic scenario, a material manager can easily find his position in almost every organisation that understands the significance of material management.

- It is as **important** as manufacturing, engineering and finance. The supply of proper quality of **materials** is **essential** for manufacturing standard products. The avoidance of **material** wastage helps in controlling cost of production. **Material management is essential** for every type of concern.
- Materials management is a core supply chain function and includes supply chain **planning** and supply chain **execution** capabilities. Specifically, materials management is the capability firms use to plan total material requirements. The material requirements are communicated to procurement and other functions for sourcing.

OBJECTIVES OF TEACHING MATERIALS MANAGEMENT

- The **primary** objective of a material management system is to reduce the unit cost of production. The other subordinate objectives are: Reduce manufacturing cycle time. Reduce delays, and damage.
- The **materials** planning, purchasing, inventory planning, storage, inventory control, **materials** supply, quality control, transportation and **materials** handling, MHE, storage systems and safety are the **activities** which are part of the **materials management** course.

BENEFITS OF MATERIALS MANAGEMENT

An effective materials management in the organization can bring following benefits to the organization:

- Better control of materials
- Reduction in the overall cost of the materials
- Improvement in the handling of materials
- Reduction in duplicated orders
- Materials are available in stores when needed and in the quantities required
- Improvements in the labour productivity
- Improvements in overall plant availability for production
- Improvement in the quality of the materials
- Reduction in the inventory needed to be stored
- Improved turnover of the materials
- Improved economy in the purchase of the materials
- Improved relationship with the suppliers
- Better cash flow management
- Improved teamwork and relationship with production departments

MATERIALS MANAGER'S JOB

- The purpose of a Materials Manager is to oversee the **planning** and coordination of a company's inventory and purchasing departments. They are tasked with researching best prices, monitoring inventory levels, distributing supplies, and negotiating contracts.
- Material management is a service function

WHAT THE COURSE SHOULD TEACH

The course should teach students these four effective strategies that facilitate successful material management:

1. Lookout for quality suppliers

A regular flow of supply can keep the company thriving. On the contrary, the companies may face adverse situations if there is an obstruction in the continuity of the supplies as the company will not be able to meet the demands of the customers. This, in turn, may result in loss of the customers and immense monetary loss of the company. Thus, it is imperative for the material manager to foster a good relationship with the suppliers so that the company can easily rely on the suppliers to fulfill its supply needs.

2. Proper order process

The customers' demands keep on fluctuating. However, a firm should always be well-equipped to meet the demands of the customers. They should always have sufficient inventory to handle even the turnover demand. For this, a firm must regularly keep a check on its stocks. This, in turn, facilitates proper calculations related to supplies so that the material manager has a better idea of the replenishment amount. Having a better idea of the replenishment amount facilitates in placing reorder for the required materials before its depletion (EOQ, ABC analysis, ERP, MRP)

3. Proper analysis

It is an essential step for the material manager to carry out different analysis. Proper analysis not only includes inventory management, but it also includes maintaining financial aspects. The companies must exploit an effective inventory system that keeps an account of the total purchase as well as the sale of every item for proper analysis. The common goal should be to ensure that the cost of purchasing a material is less than its sales. Apart from this, the accounts of inventory must be updated on a monthly basis. This facilitates the material manager to analyze the data and easily manage the cost of inventory. (forecasting)

4. Cost savings

Since most of the task related to material management require manpower, it is imperative for the material manager to ensure the best pricing. He should know how to get top-notch quality work done at minimal cost. He should also know the minimum cost that should be spent to purchase high-quality materials.

A few things that need to be kept in mind

- Include cost inventory.
- Regulate high turnover.
- Try to achieve a minimal cost of storage and procurement while keeping the quality intact.

TEST YOUR STUDENTS

- Identify and describe three different materials management strategies
- Discuss how a just-in-time system can help improve productivity
- Explain the importance of having enough materials on hand for production
- Outline some issue that can arise if a business is to store large quantities of materials

ACTIVITIES INVOLVED IN MATERIALS MANAGEMENT

- Materials Requirement Planning
- Purchasing
- Inventory
- Quality Control of Materials
- Transportation
- Material Handling & Storage Systems
- Expediting

MATERIALS REQUIREMENT PLANNING

- It encompasses the identifying, quantifying scheduling of acquisition of materials and equipments
- Necessary function as inventory of materials make up 60% of the total cost of any organization
- Students must be made aware of this fact by interpreting the balance sheets of organizations

PURCHASING

- Holds the responsibility of procuring the materials in alignment with the specifications, standardization and in compliance with project schedule and budget
- **Functions** are –
 1. To look for a proper supplier to meet the specifications
 2. To negotiate and bargain with vendor
 3. To assure quality control
 4. To ensure materials to be purchased in right quantity and quality at proper time and cost
 5. To set purchase policy and procedures
- **Importance**

50% -60% of the turnover cost is for purchase of materials
About 1% saving in material cost leads to 5% profit to the organization

INVENTORY

- Where all materials are properly and promptly issued & stocked
- Monitor the stocks for production, distribution and self consumption

Functions –

1. To meet anticipated demand
2. To smoothen production requirements
3. To protect against stock outs
4. To help hedge against price increase
5. To permit operations

Importance –

- Proper inventory control boosts profitability
- Liquidating unwanted Inventory, understanding Carrying Cost like Storage, Insurance, Tax, etc helps to minimize cost

EXPEDITING

- Continuous monitoring as well as ascertaining and maintaining the flow and supply of materials prevents stock outs and stoppages of production

Factors affecting –

- Insufficient or zero inventories
- Failure of material handling devices
- Uncertainty in demand and production quantities

TRANSPORTATION

- This involves the safest and most economical means of movement of materials to the site where they are needed
- A thorough knowledge of modes of transport is necessary

Intermodal Transport – a system of transport where two or more modes are used to transport the same loading unit in an integrated manner

Multi-modal Transport – continuous movement of goods by more than one means of transport

MATERIAL HANDLING

- Movement of all materials (raw materials, parts in progress, finished goods, packaging materials and disposal of scraps) at the lowest possible cost using proper equipment

Importance –

1. Reduces delays and damages
2. Promotes safety and improves working conditions
3. Promotes productivity
4. Control inventory
5. Material handling uses 5%-10% of total manufacturing cost

Material Handling Equipments – types and utility

WHY FIRMS HAVE IMPLEMENTED MATERIALS MANAGEMENT

It has been estimated that 6% improvement in labour productivity can bring about an additional savings to the tune of 4% -6%

- Reduces overall cost of materials
- Better handling of materials
- Reduction in duplication of orders
- Material will be onsite when needed (JIT)
- Improvement in project schedule
- Quality control
- Better relationship with suppliers (Negotiations)
- Better cash flow management
- Effective management and supervision

THANK YOU

