

Purchasing and Store Keeping



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Purchasing and Store Keeping

(As per the Revised Syllabus 2015-16 of Mumbai
University for T.Y.B.Com., Semester – V)

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PREFACE

We are pleased to present the new edition for T.Y.B.Com. students of the University of Mumbai in the subject of ***Purchasing and Store Keeping*** – Semester V w.e.f. the academic year June 2015.

This book is presented in four modules as per the syllabus. The various elements covered in this book include Integrated Materials Management, Responsibilities of Materials Manager, Interdepartmental Relationship, Materials Research, Materials Requirement Planning (MRP) and 'E' Materials Management, Scientific Purchasing, National Purchase Procedure, International Purchase Procedure, Classes/Types of Materials, Indent House and Online Purchase.

This edition prepares the students appearing for the T.Y.B.Com. examination conducted by the University of Mumbai in the subject of Purchasing and Store Keeping.

Students of other courses can also benefit from this book as it covers the basic aspects of purchase and store keeping.

We would like to thank the teaching faculty of several colleges affiliated to the University of Mumbai for their encouragement and support.

Authors

ACKNOWLEDGEMENTS

We would like to express our gratitude to the many people who saw us through this book; to all those who provided support, talked things over, read, wrote, offered comments, allowed us to quote their remarks and assisted in the editing, proofreading and design.

We would like thank to Himalaya Publishing House Pvt. Ltd. for enabling us to publish this book.

We are also thankful to Dr. Rajesh Bhoite for helping us in the process of selection and editing.

We also express our sincere thanks to Burhan Bootwala and Rajesh Yadav who helped us in typing the content of the text and to convert the manuscript into the typed form.

Above all, we want to thank our husband and the rest of our family, who supported and encouraged us in spite of all the time it took us away from them. It was a long and difficult journey for them.

Authors

SYLLABUS

**Course: Purchasing and Store Keeping (Applied Component)
w.e.f. the Academic Year 2015-16
T.Y.B.Com. Semester – V**

Objectives:

To make the syllabus of Purchasing and Store Keeping subject to be useful academic tool to enhance one's career and to attract attention of learner towards developing area of business.

Module – I: Integrated Materials Management and Materials Research Lectures (11)

Need for Integrated Materials Management – Concept, Definition, Importance, Objectives, Functions, Scope, Advantages/Benefits.
Responsibilities of Materials Manager.
Interdepartmental Relationship.

Material Research – Meaning, Definition, Need, Importance, Scope, Functions.

Module – II: Materials Requirement Planning (MRP) and 'E' Materials Management Lectures (11)

MRP – Meaning, Needs, Factors Affecting.
Materials Budget – Purpose and Precedence, Factors Considered.

'E' Material Management – Concept, Applications and Operation.

Uses and Advantages.
Classes/Types of Materials.

Module – III: Scientific Purchasing Lectures (11)

Types of Buyers/Consumers.
Personality Traits for Purchase Executives/ Manager (Qualities and Qualification).
Functions of Purchase Department.
Scientific Purchasing – Meaning, Importance, Objectives and Principles.

Purchase Policies and Objectives.
Sources of Suppliers – Selection of Suppliers –
Methods, Stages in Source Selection – Vendor
Rating and Vendor Development.

Module – IV: Purchase Procedure

Lectures (12)

Make or Buy or Import Decision.
Buyer and Seller Relationship – Techniques.
Ethics in Buying – Principles.
Purchase Cycle, Purchase Methods,
Documentation.

National Purchase Procedure – Purchase
Requisition, Quotations – Types, Invoice –
Types and Different Methods of Payment
Settlement.

Legal Aspect of Contract – Contains, Classes.
Records Maintain by Purchase Department.

International Purchase Procedure – Need,
Indent House/Firm – Functions and Services
Offered by Indent House – Procedure of
Importing, Documentations.

Virtual Purchasing (Online Purchase) Procedure
and Steps.

PAPER PATTERN

Purchasing and Store Keeping (Syllabus for Semester V)

- Module I – Integrated Materials Management and Materials Research
- Module II – Material Requirement Planning and E-Materials Management
- Module III – Scientific Purchasing
- Module IV – Purchase Procedure

EXTERNAL EXAMINATION

Marks: 75

Duration: 2½ HRS

There will be five questions in all.

All questions are compulsory.

- Q1. Based on Module I (Attempt any 2 out of 3) 15 Marks
- Q2. Based on Module II (Attempt any 2 out of 3) 15 Marks
- Q3. Based on Module III (Attempt any 2 out of 3) 15 Marks
- Q4. Based on Module IV (Attempt any 2 out of 3) 15 Marks
- Q5. Objective Question Based on Module I to IV
- (a) True or False 5 Marks
 - (b) Abbreviations 5 Marks
 - (c) Match the Following 5 Marks

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INTEGRATED MATERIALS MANAGEMENT – CONCEPT

Integrated materials management evolved as a rationale for bringing all the materials related activities under one common head, viz., the materials manager to permit uninterrupted flow of raw material,, components and parts from the suppliers to the corporation, to all consumer points in the organization and distribution of finished goods at minimum cost. IM is concerned with planning, directing and controlling the kind, amount, location, movement and timing of various flows of materials used in and produced by the process.

Integrated materials management also encompasses production planning on one hand and distribution of the finished goods to customers on the others. Companies which have these activities transferred, under the integrated materials management set-up, have found encouraging results by the way of improved co-ordination and reduced inventories.

Thus, the evolved concept of the integrated materials management is the function which is responsible for the co-ordination of planning, selecting sources, purchasing and moving, storing and controlling materials in an optimum manner so as to provide a pre-decided service to the customers at a minimum cost.

Definition of Integrated Materials Management

“All the materials related activities such as material planning and identifying purchase system and procedure, variety reduction through

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standardization and rationalization, reducing uncertainties in demand and supply, handling and transportation, inspection, proper storage and issue of materials to the internal customers, inventory management, vendor management and finally disposal of obsolete, surplus and scrap materials, etc. taken together is termed as integrated materials management.”

“The term integrated materials management refers to the management of resources in an integrative manner to make way for national economic development, through efficient utilization of advanced technologies and innovative, economic materials for manufacturing.”

Integrated materials management helps in reducing material costs, preventing large amount of capital being blocked up for a long period and improving capital turnover ratio. Materials management concerns itself with the management of material resources of concerns itself with the cost incurred on materials and seeks to reduce this costs.

Some of the costs which get added to the basic cost incurred on buying materials are:

1. Cost of purchase
2. Taxes
3. Packing costs
4. Transportation costs
5. Insurance
6. Inspection costs
7. Material handling costs
8. Loss caused by scrap, loss suffered on finished goods rejected by quality control, pilferage, spoilage, etc.
9. Salaries payable to staff required for store keeping and stores accounting amount payable towards rent, etc.

NEED FOR INTEGRATED MATERIALS MANAGEMENT

Integrated materials management is helpful in order to attain highest material productivities (through minimizing the cost and maximizing the profit) and it is possible when there is co-ordination and

integration of different areas in material decision inventory control, proper supply and demand management, lead time, standardization, codification and variety deduction. The development of vendors affects the inventory control. These areas are integrated under material function.

(A) Planning Function

Materials manager deals with following functions and issues:

1. To prepare sales projection transaction with long requirement materials.
2. To updated production plan adjusted to the latest sales demand.
3. To adjust the materials as per the requirement.
4. To prepare the facilities required for production.

(B) Production Control

It develops short-range operation plan and schedule from long-range plan)

1. To direct and regulate orderly movement of materials.
2. To use of entire manufacturing cycle (procurement of raw materials up to the delivery of finished goods to the consumer).
3. To ensure minimum inventory investment.
4. To maximize manufacturing efficiency.

(C) Inventory Control

It is related with ensuring the activity of attempt that to meet requirement of optimum cost.

1. It is concerned with requisition of material according to requirement.
2. To take decision about optimum size of order known as EOQ.
3. To keep updated records of materials received.
4. To issue the materials and maintain a record of it.
5. To report inventory report in detail.

(D) Purchasing

Objective is to procure the materials of desired quantity at desired time to meet production specification.

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1. To select appropriate supplier.
2. To place an order to the reliable or selected supplier.
3. To ensure delivery of material to meet requirement.
4. To purchase at lowest and reasonable ultimate cost.
5. To keep watch on market condition for the new as well as substitute type of materials.

(E) Receiving and Stores

1. To accept the delivery of purchase material.
2. To verify and check with purchase order and requisition slip.
3. To prepare goods received notes for stores and account section.
4. To issue material according to direction/order placed.
5. To issue the material according to authorized requisition issued by purchase department.

(F) Shipping Dispatch

Concerned with distribution loading of finished goods. It involves:

1. To receive finished goods from production department.
2. To verify the quantity and quality of material with specification.
3. To pull goods from store.
4. To identify customer and put to packing label.
5. To prepare shipping document like railway receipt, bill of loading, etc.

IMPORTANCE OF MATERIALS/INTEGRATED MATERIALS MANAGEMENT

Integrated materials management functions in an organization and aims to control the overall cost of production.

Importance of integrated materials management:

1. Fulfillment of Objectives

Integrated materials management is helpful in order to attain highest material productivities (through minimizing the cost and maximizing the profit). And it is possible when there is co-ordination

and integration of different areas in material decision inventory control, proper supply and demand management, lead time, standardization, codification and variety deduction.

2. Optimum Utilization of Resources

The main objective of management is to use various resources of the enterprise in a most economical way. The proper use of men, materials, machines and money will help a business to earn sufficient profits to satisfy various interests. The proprietors will want more returns on their investments while employees, customers and public will expect a fair deal from the management. All these requirements will be satisfied only when physical resources of the business are properly utilized.

3. Production Continuation

It helps to achieve the objectives of organization for maximizing the production. It is important in a business organization for maximizing materials productivity, which ultimately adds to the profitability of the organization.

4. Return on Investment (ROI)

ROI in material require some cost, ROI depends on the use of material, the relationship between ROI and manner of utilization of material depends on the following relationship.

$$\text{ROI} = \frac{\text{Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Fixed Assest} + \text{Current Assest}}$$

5. Proper Store Management

Storage means independent single store. Centralized store keeping ensures better layout and control of stores, economical storage space, saving in storage cost and appointment of experts for handling storage problem.

6. Saving on Foreign Currency

It helps for improving the productivity of entire organization and maximum utilization of available resources from own country. It helps in savings foreign currency and cost.

7. Satisfaction of Consumers

Customers are the king of the market in today's world due to globalization, and changes in the demand of customers. The company has to satisfy the customer by making the proper use of raw material from the right supplier.

8. Co-ordination with Other Departments

Co-ordination of materials department with other departments is needed in order to work with greater degree of co-operation. Communication is essential among members of the team to avoid conflict and to take better decisions regarding material flow.

9. Utilization of Natural Resources

Utilization of natural resources is one of the important factor of integrated materials management. Natural resources are limited in nature. Efficient use of raw materials and semi-finished goods is required to avoid wastages.

10. Reduction of Cost Material

A cost-efficient method of reducing waste is to reuse products in their present form. It is usually cheaper to clean or repair products so that they can be reused rather than to buy new or recycled ones. Examples of some easy ways to reduce the amount of waste. Buy recycled paper.

- ◆ Keep mailing lists current.
- ◆ Buy recycled paper.
- ◆ Circulate memos, documents, periodicals and reports rather than making or buying individual copies for all personnel.
- ◆ Proofread documents on the computer screen before printing them.
- ◆ Save documents on computer as soft copies instead of making hard copies.
- ◆ Use remanufactured office equipment.

11. Accounting for Material Control

It is concerned with safeguarding of undertaking property in the form of material by proper recording of receipts, consumption of material and balance in stock.

12. Operating for Material Control

It is considered with maintaining material at optimum level keeping in view the operational requirement and financial resource of business. It requires optimum investment in stock and minimizing losses in material index control. It maintain the balance between:

- ◆ Maintenance of sufficient inventory for timely production.
- ◆ Maintenance of inventory at lowest cost.

OBJECTIVES OF INTEGRATED MATERIALS MANAGEMENT

(A) Primary Objectives

1. Minimization of Cost

Materials management minimizes wastages at all levels, i.e., procurement, storage, handling and use. The stock should be kept in optimum level to avoid losses, wastages, spoilages, etc.

2. Inventories Control

It is considered with maintaining material at optimum level keeping in view the operational requirement and financial resource of business. It requires optimum investment in stock and minimizing losses in material index control. It maintains the balance between:

- ◆ Maintenance of sufficient inventory for timely production.
- ◆ Maintenance of inventory at lowest cost.

3. Movement Storage and Accounting

Installation of well-organized system of storage to prevent deterioration, pilferage wastage and evaporation of material. Accounting control is concerned with maintaining material at the optimum level keeping in view the operational requirements and the financial resources of the business.

4. Provision of Materials

To ensure smooth flow of supply of raw material from suppliers or else, it would affect the process of production and which would substantially increase the operating costs and also increase the unit production cost.

5. Assuring High Capital

Assuring high capital for easy process of production and supply of good is required. Capital is lifeblood of every business organization. Any kind of obstacles can be removed easily in the process of purchasing and distribution.

6. Turnover Ratio

Turnover is the actual sales of the company. The company has to keep the update of turnover ratio for an easy analysis of requirement of raw materials, improvement of products, product development and increasing/decreasing demand of manufactured goods.

7. Economic Procurement

Purchasing of material is a highly specialized function. The cost of production may be reduced by purchasing the material at right time from right supplier from right place and it will help to have control over stock.

8. Proper Storage

The main objective of materials management is to ensure the optimum supply of material to production department. There should not be overstocking. There should not be understocking but it should be balanced. Stocking may lead to losses, surpluses, disturbance in production, use or wastage of resources, etc.

9. Proper Issue and Distribution

IMM helps for determining proper issue of materials and distributes the material as per the requisition provided by the production department and store department.

B. Secondary Objectives

1. Location of New Sources of Supply

The main objective of materials management is to develop good supplier and source of supplier, in order to update supplier detail and their policies and through agents.

2. Variety Reduction and Simplification

It aims at understanding the procedure of purchase, store and issue of material. It helps to provide efficiency, reduce cost, improve quality and brings easiness in work.

3. Standardization and Quality Control

It aims to have standardized system of material control. System of material control should be such that responsibility should be fixed for purchasing, storing and handling of material, etc. It helps to reduce cost, reduce wastages and increase control.

4. Development of Skill and Knowledge

IMM intends to develop skill and knowledge of materials manager in managing the material in an optimum manner for the better results.

FUNCTIONS OF THE INTEGRATED MATERIALS MANAGEMENT

1. Planning and Sourcing

Material planning includes decision relating to when, how, what and why to procure material. It helps to analyze the problem, to find out the solution to understand the requirement of material on time. It also helps to prepare material budget, forecasting the level of inventories, scheduling the order and monitoring the performance in relation to production and sales.

2. Budgeting

Budgeting is an important function of IMM. Proper budget for material requirement and supplies is required to realize the economic benefits of integrated materials management.

3. Research and Analysis

IMM helps for finding the new source of supply, substitute type of material at reasonable price, collect the data from various sources and vendor rating. Vendor development helps in analyzing the data.

4. Indenting and Procuring

A supply chain is a network of facilities that performs the functions of procurement of material, transformation of material to intermediate and finished products, and distribution of finished products to customers. Often, organizational barriers between these facilities exist, and information flows can be restricted such that complete centralized control of material flows in a supply chain may not be feasible or desirable.

5. Moving and Preservation

Receiving of material, moving to the proper place for easy availability is one of the important functions of Integrated Materials Management and preservation of goods in desired form without affecting its shape, colour and size. Whenever there is demand for the goods, it has to be supplied as per the requirement.

6. Accounting and Controlling

Accounting refers to recording of goods as per FIFO, LIFO and weighted average method for easy reference. Controlling functions are safe custody of the material in the shop to avoid theft, misutilization, damage and deterioration, etc.

7. Issuing and Dispatching

After receiving the material from different suppliers, it has to be issued to the different department where it is required in the factory and dispatched when order is received from others.

8. Disposing

Disposing the material at the proper place is one of the important tasks of IMM department. It ensures proper disposal of material and their proper arrangement.

9. Departmental Efficiency

Development or system of maintaining good record is also function of materials management and it also depends upon the efficiency of manager and his initiatives.

10. Standardization

It is responsibility of materials management to review the stock and to suggest non-standard items and standard items which give higher quality at lower cost.

11. Product Development

The discovery and alternative use of material, frequently lead to development of new product which helps in lowering the cost of the existing product. It can suggest the material components and parts which will be available at low cost.

12. Forecasting

Materials manager prepare the estimation of sale and requirement of material by analyzing and interpreting data of past sales and seasonal variation in demand and supply.

SCOPE OF INTEGRATED MATERIALS MANAGEMENT

1. Purchasing

It is a process of buying material. It includes:

1. Determining the need.
2. Selecting the best suppliers.
3. Arriving and specifying prices.
4. Terms and conditions.
5. Ensure proper delivery.

2. Production, Planning and Controlling

It involves detailed schedule of parts and materials required to be produced in order to realize an outline production programme or sales forecast approved by management and helps for PPC.

3. Materials Handling

It deals with art and science. It involves the moving, packaging and storing of material. It is the scientific study and analysis of handling and movement of material. It is used to reduce time required to move a unit of material from one location to another.

4. Inventory Control

It deals with policy followed for the holding of the stock of raw materials and finished goods. It must have minimum investment at right quality with right quantity with minimum carriage cost. There should not be overstocking and there should not be understocking but it should be balanced.

5. Storage

Storage is concerned with physical handling and housing of parts and materials either got or manufactured for sale as it saves the cost and time.

6. Transport Control

It is concerned with assessing the total cost of transportation. It includes loading and unloading, method of packaging and transit time. It is also concerned with material cost policy of company with regard to regularity of rail services and freight structure availability.

7. Packing and Packaging

Packing means wrapping of the product with wrapping paper. Packaging means packing of product with the help of containers, tins, cans, box, glass bottles and plastic bottle.

It is the responsibility of department to reduce the cost of packaging and packing and delivery cost. Scope of packaging is much wider than packing.

8. Warehousing

Responsibility for control of finished goods and material lies in the hands of manager to warehouse and store it in a proper manner. It brings co-ordination and understanding among concerned department.

9. Disposal of Scrap and Surplus

Scrap and disposal of surplus creates funds from the wastages. The suppliers are interested in disposal to avoid inventory carrying cost and to reduce overall cost.

10. Quality Control

Quality Control is one of the Important aspect of IMM, Inspection of incoming raw-material and supplier operation is required for avoiding the problem of damages or wastage.

11. Customs

Custom is concerned with clearance of goods across national border and deals with tariff applied and excessive paperwork.

12. Customer Service

Customer service depends upon nature of product and image of company.

BENEFITS/ADVANTAGES OF INTEGRATED MATERIALS MANAGEMENT

Benefits of integrated materials management are:

1. Better Accountability

Through centralization of authority and responsibility for all aspects of materials functions, clear-cut accountability is established. It ensures proper action from central department if problem arise. It helps in evaluation of performance of materials management in an objective manner.

2. Faster Inventory Turnover

The smooth supply of raw material is essential for regular turnover which is important for every organization. Faster inventory turnover removes the problems of inventory. Through unrestricted flow.

3. Assures Materials Availability

Integrated materials management gives the exact information regarding available inventory due to which problems relating to maintaining raw-material can know to the depth easily by the department.

4. Efficient Co-ordination

Co-ordination with other department is needed in order to work with greater degree of co-operation. Communication is essential among members to avoid conflict and regarding material flow.

5. Reduced Materials Handling Cost

Purchasing and store keeping embraces all the activities pertaining to receipt of material, storing them properly, issuing and accounting of material. It ensures ample protection against obsolescence, deterioration, damages and other losses which lead to reduce materials handling cost.

6. Smooth Flow of Materials

Fixation of minimum and maximum limit of material in store can avoid shortage and overstocking of material. Integrated materials management helps in smooth flow of materials.

7. Better Inventory Planning

Better inventory planning system helps in installation of perpetual inventory system to find out the quantity and value of materials in stock at any point of time.

8. Better Communication

Better communication helps to avoid conflict among the department and for better material flow which do not affect the production of the firm.

9. Better Buyer-Supplier Relation

Integrated materials management tells us about the necessity of goods, supplier relations and how it should be maintained. Product reputation much depends on good suppliers relations. Proper treatment given to the supplier generally reciprocates in the form of quality supply of material.

10. Improved Productivity

Quality assurance system helps to check the quality of raw material in use to increase the quality of finished products. All the interrelated functions are integrated organizationally. Greater speed and accuracy results in communication. It lowers costs and also reduces paperwork.

11. Increased Profitability

Proper utilization of resources, proper planning and co-ordination helps all departments for minimizing the cost and maximizing the profit and efficiency.

12. Team Spirit

It helps for developing proper team spirit and with proper Co-ordination of all departments for maintaining the productivity of profit for the organization.

13. Reduce Lead Time

Lead time is the time that elapses between the placing of an order (either a purchase order or a production order issued to the shop or the factory floor) and actually receiving the goods ordered. If a supplier (an external firm or an internal department or plant) cannot supply the required goods on demand, then the client firm must keep an inventory of the needed goods. The longer the lead time, the larger the quantity of goods the firm must carry in inventory. Integrated materials management reduces the problem of lead time.

14. Low Storage and Preservation Cost

IMM takes care of entire organization. Materials manager knows how to purchase the materials from reasonable sources and how to store the materials at the right place in store room as per the nature and use of material. Proper attention is given for maintenance and preservation of materials.

15. Solutions to Materials Problems

IMM department finds out the speedily solution if any problem relating to collecting of data, recording and storing of materials occurs.

16. Facilitates Management Decision

IMM facilitates a quick management decision relating to planning, organizing, collecting data from suppliers or may be for settlement of payment, materials handling and storing.

ROLE AND RESPONSIBILITIES OF MATERIALS MANAGER

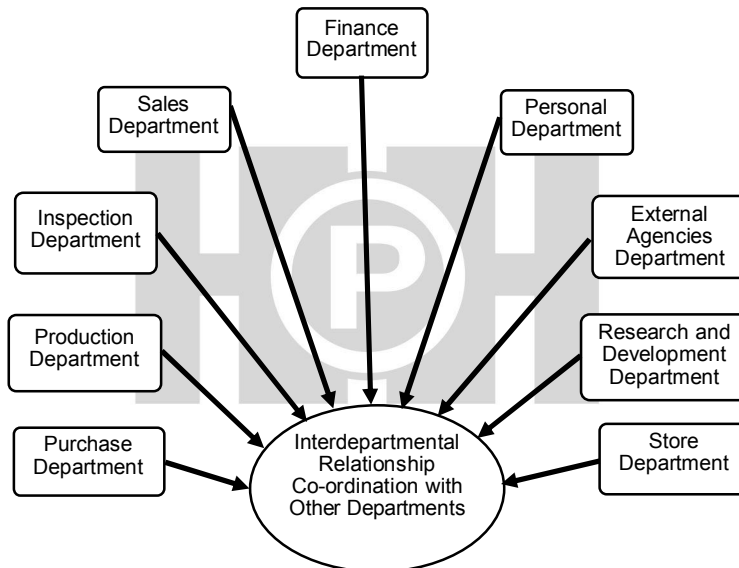
Materials manager plays a very important role in IMM. He ensures conduct of all interrelated functions of integrated organization. His role and responsibilities are:

1. To place an order as per production plan and to take follow up from suppliers.
2. To inspect the materials from invoice or purchase requisition.
3. To co-ordinate with different departments such as production department, store departments, personal department, accounting department, etc.
4. To place and store the materials at the proper place as per the features, nature, sizes and types of product.
5. To keep proper records of materials.
6. To issue the materials as per the note given by authentic authority (from production manager).
7. To make an arrangement of issuing and transportation of materials.
8. To maintain proper inventory planning.
9. To fulfill the objectives of the company.
10. To facilitate management decisions.
11. To determine proper methods and use of equipment's handling, storing, maintaining and shipping stock.
12. To report regarding materials related information to the organization.
13. To plan the oversee material movement planning as per production cycle.
14. To generate purchasing recommendation reports and action control, it is also material control system that attempts to keep adequate inventory levels to assure that required materials are available when needed.

INTERDEPARTMENTAL RELATIONSHIP

In any organization, all departments strive together to attain the organizational objectives. In order that they pull together, there should be interrelationship and excellent co-ordination of efforts.

All other departments in a firm need the help of materials management department to purchase their requirement of material machinery, equipments, supplies, stationery items, furniture, etc. Hence, mutual co-operation and good interdepartmental relationships between materials management and other departments are essential for the smooth functioning of any organization.



1. Co-ordination with Purchase Department

Materials Manager has to co-ordinate with Purchase department in order to understand and analyze the requirement and use of material in purchase department as purchase department cannot perform its duties without Materials Manager.

2. Co-ordination with Production Department

In manufacturing enterprise, the function of material (purchase) is to procure the right quality, quantity of material and store it on economical terms. The production is based on the functions of materials

management as it requires to do purchase research, procurement, operations, bulk buying, development of alternative sources of supply, etc.

3. Co-ordination with Inspection Department

Incoming goods are first checked for quality, quantity and other specifications by inspection department. It is only when the inspection department is satisfied with the incoming goods that the goods are accepted by materials management department. So, there needs to be proper co-ordination between the two departments.

4. Co-ordination with Marketing Department

The materials department helps the marketing department in selling at as low a cost as possible, so that the company can maintain a competitive selling position. The materials manager also interacts with the marketing manager with regard to customer service, market intelligence, price trends of commodities, forecasts finished goods, stock level and market research.

5. Co-ordination with Finance Department

The materials manager should have knowledge in answering the queries of the finance manager, who arranges the working capital for the inventories. Proper co-ordination between the two departments helps in avoiding understocking and overstocking which leads to blocking of working capital.

6. Co-ordination with Personnel Department

The personnel manager can help the materials department on legal aspects, guarantee manpower planning and in motivation. Everything connected with staff matters like recruitment, promotion, disciplinary action, etc. has to be handled through this department.

7. Co-ordination with External Agencies

Externally, the materials functions interact with transporters, carriers, railways, insurance companies, bankers, suppliers, sub-contractors, excise department, sales tax officers, customs department, import licensing authorities and other government agencies. The materials department should organize itself to meet the challenging

needs arising from above and to sort out differences with other departments.

8. Co-ordination with Research and Development Department

It helps in finding the new source of supply at the reasonable cost for minimizing the cost. New methods and techniques are used based on research and innovative ideas of related industries.

9. Co-ordination with Store Department

It helps in maintaining and preservation of materials in the store department. It helps to enhance to increase the scope of warehousing.

MATERIALS RESEARCH

Definition of Materials Research

Materials Research can be defined as a systematic, formal and continuous analysis of all factors affecting the materials management function. The aim of the research is to ensure optimal decisions, particularly for important items and key raw materials.

Need and Importance of Materials Research

After the industrialization of the Indian economy, it has made materials manager more responsible. Naturally, his horizon of work has been widening and he is expected to be in constant touch with supply sources, market trends, and price levels. What is more, the import of materials is a continuous drain on our foreign exchange reserve. It is, thus, imperative to develop alternative sources for materials so as to reduce imports. All this and the sheer value of the materials purchased every year point to the need for materials research on a short-term as well as long-term basis. The materials manager today has to consider the implications of the following factors:

- ◆ **Long-range requirements of material:** Materials research helps in determining the best source of supply and helps in deciding company's long-range requirements of material in proper way.
- ◆ **Sources of supply:** Material research helps to find out the likely sources of supply and their capacities over the next 10 years and develop new sources and vendor development.

- ◆ **Anticipation of material:** Research helps to anticipate the material requirement. It helps to carry out production in smooth manner.
- ◆ **Updated technology:** The technological change expected in the markets from which materials are purchased.
- ◆ **Price trends:** To find out the likely price trends and select the best price for placing an order. It helps in pricing policy,
- ◆ **Government policy:** The expected changes in the Government policy in the related areas and adjust the policy according to it.
- ◆ **Short-range and long range requirement:** Materials research department not only find out best source of supply but also get information about short-range and long-range requirement at material in future time period.

SCOPE OF MATERIALS RESEARCH

Economic Analysis

In a planned economy such as India, the economic policies have constantly influenced the major decisions taken by various organizations. Factors, such as GNP, planned growth rate, business cycles, inflation, channelization and other factors can seriously affect the availability of materials and consequently the price levels. Hence, a systematic analysis is necessary in this area.

Market Analysis

The corporate objectives and requirements must be estimated over the next 5 to 10 years. The markets should then be analyzed for supply trends, technological innovations, substitutes, evolution of new material, and standards.

Supplier Analysis

A checklist of the present and future suppliers is the first step. This should be followed by the analysis of their financial condition, their expansion plans, and additions to their product lines. An estimate of the share that the company can hope to get from their expanded capacity and new product lines can then be worked out. This will also highlight areas where new sources have to be developed. On a continuous basis, the facilities of the suppliers should be inspected and critically evaluated.

This analysis is necessary if sudden supply failures are to be avoided. It helps in planning for future operations also.

Transportation Analysis

Transportation cost forms a good percentage – about 20 per cent – of the cost of material purchase in any organization. Analysis of the location of suppliers must be made in relation to the transportation cost. The recent energy crisis has considerably affected the cost of transportation, making it necessary to take a fresh look at the transportation mix, namely, the proportion of goods moved by trucks, railways, ships and aeroplanes. Many new developments are taking place. Railways, for example, have introduced Container Service, Quick Transit Service, Freight Forwarder Scheme, Mobile Booking Service, Parcel Express, etc. It pays the organization to avail of such facilities wherever suitable. Applicability of techniques, such as Linear Programming, can also be explored in order to minimize transportation costs.

Price Analysis

Analysis of price increases made by the suppliers should be done on a regular basis and their impact should be related to the cost of finished products. For this purpose, it is essential to have a detailed analysis of the cost structure of the raw material. For similar groups of materials, such price analysis should be made and compared for various vendors. The causes should be identified so that various alternatives, such as use of alternate materials, change of suppliers, and so on, can be worked out.

Purchase Analysis

Advantages and disadvantages in purchasing from manufacturers *vis-à-vis* dealers should be analyzed in the light of company's operations. Cost-benefit analysis must be done in vertical integration of critical raw materials and components. An accepted policy in a few organizations is the concept of vertical integration, i.e., the process in which the company decides to manufacture some of the critical raw materials and components. For this purpose, detailed cost-benefit analysis must be done.

A steel manufacturer, for example, may decide to acquire a coalmine, as it is critical to the operations, particularly when the supply of coal is not satisfactory. An automobile manufacturer may decide to

have captive foundry and forge units. Such decisions are taken in the long-term interests of the organization and they require a good deal of research.

FUNCTIONS OF MATERIALS RESEARCH

- ◆ To provide special research grants for specific objectives and device awards or systems for industries that achieve breakthrough or make innovations and inventions
- ◆ To encourage the publicity of research findings and other information relevant to local sourcing of raw materials
- ◆ Determination of material requirement
- ◆ Framing suitable plan of action for finding new sources
- ◆ Finding out best source of supply
- ◆ Gathering information about material from different vendor sources, quotation and internet
- ◆ Describing future needs of materials
- ◆ Analyzing and evaluating the needs of materials
- ◆ Taking decision and selecting the best substitute type of material from best sources.

QUESTIONS

1. Explain the concept and definition of IMM.
2. Explain the objectives of IMM.
3. Explain various functions of IMM.
4. Explain importance of IMM.
5. Explain the scope of IMM.
6. What are the advantages/benefits of IMM?
7. Explain the department relationship with the other department.
8. What are the needs for IMM?
9. Define materials research. Explain the need and importance of materials research.
10. Explain the scope of materials research.
12. Explain the functions of materials research.

13. Discuss the scope of integrated materials management.
14. Explain the benefits/advantages of materials management.
15. Explain integrated materials management interdepartmental relationship.
16. Explain the responsibilities of materials manager.
17. Explain the need of integrated materials management.
18. Define materials research. Explain the scope of materials research.
19. Explain the need and importance of materials research.

