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CHAPTER-II

MATERIALS MANAGEMENT - A CONCEPTUAL AND FUNCTIONAL FRAMEWORK

2.1. INTRODUCTION

Materials management is a total concept involving an organizational structure unifying into a single responsibility, the systematic flow and control of material from identification of the need through customer delivery. The definition of materials management given above has been accepted by the International Federation of Purchasing and Materials Management. Included within this concept are the material functions of planning, scheduling, buying, storing, moving and distributing. These are logically represented by disciplines of production and inventory control, purchasing and physical distribution.

The objective of materials management is to contribute to increased profitability by coordinated achievement of least materials cost. This is done through optimizing capital investment, capacity and personnel, consistent with the appropriate customer service level. Another definition adopted by the National Association of Purchasing Management (USA) reads as follows.

Materials management is an organizational concept in which a single manager has authority and responsibility for all activities, principally concerned with the flow of materials into an organization. (Purchasing, production, planning and scheduling, incoming traffic, inventory control, receiving and stores normally are included).

In the annals of Material Management, very richly it has been described as Last Goldmine. The success of an organization actually rests in the way it manages the inputs. The substantial amount of project cost and time can be managed only by adopting the sound principles of Material Management. Over the years, industry and business have seen innovators, some conceived radically...
new ideas in the manufacturing technology, in finance and marketing while others concentrated on the use of human resources in the industrial environment. Material Management is one of the recent additions to the glossary of Management and its objective is to contain materials costs on all fronts and to optimize the overall end results.

In this chapter researcher attempts to present a conceptual and functional framework of material management.

2.2. FIVE M’S

Historically the five M’s of an industrial organization viz., Men, Machines, Money, Materials, and Methods have shifted their positions from time to time in their relative importance. In the early days, the focus was men as they were the main source of productive power. In the course of time, the emphasis shifted towards machines, which became the main source of industrial power. As years went by, the methods of production became more complex and in order to manage the complicated manufacturing system, efficient management became necessary. Naturally, the attention was shifted to scientific management. The oil crisis of the 1970’s changed the priorities of industrialists all over the world. The unprecedented hike in the oil prices and consequent heavy budget allocations on oil made the captains of industrial establishments take note of one of the Ms, viz., money. Materials as an input in production systems started receiving attention of the industrialists from 1900 onwards. Earlier to this, materials were taken for granted as they presented no major problem with regard to either supply or cost. Since the beginning of 20th century, materials have been occupying a place of the importance among the M’s and this will continue to be so in the years to come.

Such being the importance of materials, it is desirable, for an industrial establishment to have a centralized authority vested with the responsibility of planning, procuring, preserving, handling, usage and other related aspects. Such a
centralized authority wherein, all related activities of materials are combined is called integrated materials management or simply the materials management. Bailey and Farmer define materials management as the management of the flow of materials into an organization to the point, where, those materials are converted into the firm’s end products.

2.3. DEFINITIONS AND MEANING OF MATERIALS MANAGEMENT

Materials management has been defined in several ways. Some of the important definitions are as follows:

(i) Materials Management is the “management of the flow of materials into an organization to the point, where, those materials are converted into the firm’s end product(s).” (Bailey and Farmer)...

(ii) Materials management is the “process by which an organization is supplies with goods and services that it needs when the material is either consumed or incorporated into some product. The executives, who engage in materials management, are concerned with three basic activities viz., buying, storage of materials and movement”. (Ammer)

(iii) Materials management is “a confederacy of traditional materials activities bound by a common idea-the idea of an integrated management approach to planning, acquisition, conversion, flow and distribution of production materials from the raw materials stage to the finished product stage.” (Lee and Dobler)

(iv) Materials management is “the grouping of management functions related to the complete cycle of materials flow, from the purchase and internal control of production materials to the planning and control of work-in-process to the warehousing, shipping and distribution of finished product. It differs from materials control in that the latter term, traditionally is limited to the internal
control of production on materials”. *(American production and inventory control society)*

The key word in this definition are, Materials flow-in order for raw materials to be converted into a finished product, materials must flow through a production or manufacturing process.

(v) Materials management is “the function responsible for the coordination of planning, sourcing, purchasing, moving, storing, preserving and controlling materials in an optimum manner so as to provide a pre-determined service to the customer at minimum cost.” *(P. GopalaKrishnan and M. Sundaresan)*

(vi) Materials management is “an organizational concept in which a single manager has authority and responsibility for all activities, principally concerned with the flow of materials into an organization. It includes purchasing, production planning and scheduling, incoming traffic, inventory control, receiving and stores”. *(National Association of Purchasing Management, USA)*

(vii) Materials management is “a total concept involving an organizational structure unifying into a single responsibility, the systematic flow and control of materials from identification of the need through delivery to customers”.

Included within this concept are materials functions of planning, scheduling, purchasing, storing, moving and distributing. These are logically represented by the disciplines of production and inventory control, purchasing and physical distribution.

The objectives of materials management is to contribute to increased profitability by coordinated achievement of least materials cost. This is done through optimizing capital investment, capacity and personal, consistent with appropriate
"customer service level". (International Federation of Purchasing and Materials Management)

From the above definitions it is clear that, Materials Management deals with planning, executing and controlling the flow of material in relation to changes in variables like demand, price, availability, quality, delivery, schedules etc. Materials Management encompasses all activities concerned with the materials except those directly connected with designing and manufacturing the product. Materials Management is a basic function of the business that adds value directly to the product itself. Materials Management is the process of management which coordinates, supervises and executes the task associated with flow materials to, through and out of an organization. Materials Management consists of planning, directing, coordinating and controlling those activities which are concerned with materials and inventory requirements from the point of their inception to their introduction into the manufacturing process. Thus, it begins with the determination of quality and quantity of materials and with the issue of materials to production to meet customer's demand as per schedule and at the lowest cost.

2.4. OBJECTIVES OF MATERIALS MANAGEMENT

There are at least nine objectives of materials management, each in some way or the other contributes to the achievement of some overall company objectives. If the contribution is direct, the objective may be called 'primary'. If the contribution is indirect (materials department assisting some other department), the objectives may be called 'secondary'. Primary or secondary, the main focus of materials management is to procure right materials in the right quality, of right quantity, at the right time, bought from the right source and at right prices.

Primary Objectives: There are at least nine primary objectives of Materials Management. Economic procurement, proper store keeping, a physical upkeep, timely distribution, store accounting, continuity of supply, consistency of quality,
low payroll cost, favorable relations with suppliers, development of personnel and
good records.

*Low Prices:* Obtaining the least possible for purchased materials is the most
obvious purchasing objective and certainly one of the most important. If the
purchasing department reduces the prices of the items it buys, operating costs are
reduced and profits are enhanced. This objective is important for all purchases of
materials and services, including transportation.

*High inventory turnover:* When inventories are low in relation to sales, less
capital is tied up in inventories. This in turn, increases the efficiency with which,
the company’s capital is utilized so that, return on investments is higher. Also,
storage and carrying costs of inventories are lower when the turnover is high.

*Low cost acquisition and possession:* If materials are handled and stored
efficiently, their real cost is lower. Acquisition and possession costs are low, when
the receiving and stores departments operate efficiently. They are also reduced
when shipments are received in relatively large quantities (thereby, reducing the
unit cost of handling), but they are increased if the average inventories are boosted
with the large shipments.

*Continuity of supply:* When there are disruptions in continuity of supply, excess
costs are inevitable. Production costs go up; excess expediting and transportation
cost are likely, and so on. Continuity of supply is particularly important for highly
automated processes, where, costs are rigid and must be incurred even when
production stops because of in availability of material.

*Consistency of quality:* As pointed out earlier, quality of the end product depends
on materials that go into it. When materials purchased are homogeneous and in a
primitive stage (e.g., sand and gravel), quality is rarely a problem for purchasing
personnel. When a variety of items of different qualities are needed and meeting rigid specifications becomes a challenge to suppliers (e.g., components of satellite), quality may become the single most important materials management objectives.

**Low payroll costs:** The objective of low payroll costs is common to every organization. The lower the payroll, higher the profits—all other factors being equal because, no department can do its job without a payroll, the objective of low payroll must be viewed in its proper perspective. It pays to spend $1.00 on additional payroll if earnings can thereby be boosted to $1.01 through achieving other objectives.

**Favorable supplier relations:** Maintaining cordial relations with suppliers benefits the buying company in more than one way. In the first place, a company with good reputation in supplier relations is more likely to attract customers than the one with a bad name. Secondly, the product development and research efforts to suppliers are passed on to the company provided the latter maintains good relations with the former. Thirdly, the materials manager is often faced with the problem of last minute cancellation of existing commitments because of a sudden shift in the demand for materials. Co-operative supplies can do much to help the manager solve such problems.

**Development of personnel:** ‘If you want to plan for a year, plant corn. If you want to plan for 30 years, plant a tree. But, if you want to plan for 100 years, plant men’. So goes a Chinese proverb. Every head of the department in the organization should understand this saying and take personal interest in developing the personnel working under him. Each department head should spot the potential leaders among the men and women employed in his department and encourage them to develop into future executives, and the company’s future profits will depend on the talents of its managers.
**Good records:** Good records are considered a primary objective of materials management, particularly in the procurement phase of the materials management. Buyers spend company money and can be subjected to tremendous temptation. Although, perhaps 99% of all buyers are above corruption, the opportunity does exist. Good records, along with well-planned administrative controls and periodic audits can discourage corruption. They also partly remove the onus of suspicion from a completely honest individual, working at a job that is popularly associated with graft and corruptions.

**Secondary Objectives**

Secondary objectives of materials management are not limited in number or in scope as primary objectives. Since, they represent the materials management’s contribution to the achievement of primary objectives of some other departments; they can vary widely from industry to industry. There are literally hundreds of possible secondary objectives in materials management. More, among them are reciprocity, new materials and products, economic make-or-buy decisions, promotion of standardization, product improvement, good inter-departmental relations, accurate economic forecasts and alertness to possible acquisitions. Locating new source of supply, vendor development, variety reduction, standardization to quality control, value analysis, and value analysis for the development of human skills.

**Reciprocal relations:** When a company deliberately buys as much as possible from its own customers, it is said to practice reciprocity. In consumer goods industries, reciprocity is not a problem as the sales are spread among many users. In producer goods industries, however, reciprocity is a fact of business life. A company, that is a customer, inevitably wants to become a supplier. The purchasing manager must impress upon the marketing manager and everybody
else that, the reciprocal relationship with the customer is in the best interest of the company.

New Materials and products: Engineering and manufacturing managers are always interested in new products and materials that will help them more efficiently and thereby achieve one of their primary objectives. The purchasing department can help because it deals regularly with the suppliers responsible for the new developments.

Economic make-or-buy: Make-or-buy decisions are generally made by committees consisting of departmental heads. The purchasing manager should spot the need for a make-or-buy decision and refer it to the committee for action.

Standardization: The fewer the items that need be controlled, the simpler and more efficient does the materials management processes become. Thus, it is to the interest of the materials personnel to promote standardization and simplification of specifications. The engineering groups are primarily responsible for the standards of specifications, but materials management personnel can make a substantial contribution. They can review stock, to weed out non-standard items, they can promote the incorporation of the standard components into product designs to reduce cost, and they can promote standardization with suppliers.

Product improvement: This is the most important primary objective of engineering department but the purchasing department can assist the engineering department. Their economic knowledge can supplement the technical skills of the engineers on programmes to boost profits through product change. The engineering of any product is basically a comprise between design and economic objectives. Purchasing personnel can help engineers achieve their design objectives more economically by suggesting materials or components that will do a better or equivalent job at lower cost.
Inter-departmental harmony: Materials management department deals with almost all departments in the company. It can greatly contribute to the success of every other department and at the same time, the success of materials management department depends on co-operation from the personnel of the other departments. Most materials managers are aware of the need for good inter-departmental relations. To prevent disputes, they are careful to define departmental responsibilities clearly and also try to familiarize others with materials directives, policies and organization.

Forecasts: In order to manage materials better, some conception of the future outlook for prices, costs and general business activity is necessary. In large companies, professional economists make forecasts that are used for both sales and purchase planning. Purchasing managers translate these general forecasts into specific forecasts for purchased materials. They may also provide the economists with data for forecasts because, more than any other group in the company, they are intimately familiar with the market and general business conditions through their daily contacts with suppliers.

In the smaller company that cannot afford a staff of professionals, the materials manager can double as a company economist. In such a case, good forecasts become a primary, not a secondary objective of materials management.

Acquisitions: Business acquisitions and mergers are common. Acquisition is taken as one of the ways of business expansion. It is no easy job to identify a possible candidate for acquisition and then to make the necessary overtures for eventual merger. A purchasing manager can play useful role in take-over bids because of his wide contacts with the executives of other companies.
2.5. SCOPE AND FUNCTIONS OF MATERIALS MANAGEMENT

While the field of materials management covers all aspects of material costs, supply and utilization, opinion is divided as to what functions should be included under the unified working of materials manager.

In the opinion of experts on materials management, the following eleven functions may come under the headship of materials manager.

1. Materials planning and sourcing.
2. Purchasing
3. Stores keeping
4. Inventory planning
5. Receiving, warehousing and transportation
6. Value analysis and pre-design value analysis
7. Standardization and variety reduction
8. Production planning and production control
9. Vendor development
10. Material handling
11. Disposal of scrap and surplus

The production planning and production control has been included under the materials management because for manufacturing a huge quantity of finished product (big industry), a large number of components are purchased from sub-contracting for end-use or for final assemblies. Sub-contracting and vendor development is best known by materials manager.

The materials manager should not be burdened with value analysis, codification of stores, material handlings, etc. Many experts believe that these should be separate staff functions. However, these functions cannot be, by their very nature, independent of materials manager.
The function of disposal of obsolete items, scrap and surplus is best done by materials manager who is familiar with market trends of all materials.

_Some of the important functions of material management are briefly discussed below:_

**Material Planning:** Involves setting up of consumption standards for working out the requirements of a given production programme. Deciding whether to make or buy considering the financial aspects, manufacturing capacity, availability and dependability of outside sources, laying down procurement standards and specifications, valve analysis, standardization etc.

**Scheduling:** Detailing the receipt of items to meet the procurement lead time availability or scarcity of materials, economic lot sizes, etc., this involves follow up of actual deliveries against the schedules and taking special action for expediting in case of any other short fall.

**Inventory Control:** To ensure that stock-outs don’t occur for want of materials and able to minimize the inventory holding. Selective control or ABC analysis, analysis of lead times, rejection rates, consumption rates, costs and other relevant factors to determine safety minimum and maximum levels, re-order level etc., maintenance of central stock records to ensure better control.

**Purchasing and Sub-Contracting:** Locating and development of sources of supply, market research for purchasing, negotiating prices, calling for tenders, selection of suppliers, issue of purchase orders, vendor rating, preparations of material budgets etc.

**Warehousing and Material Budgeting:** Involves receiving of materials, moving them to stores after inspection, return of rejected materials of any proper and adequate storage facilities to ensure minimum re-trading, provision of suitable material handling equipment like cranes, hoists, forklifts, conveyor systems, etc.
suitable warehousing arrangement to eliminate fire hazard, loss due to pilferage and determination in storage.

**Salvage and Disposal of Scrap and Surpluses:** Investigating into cases of surpluses and obsolescence and to find out alternative uses or otherwise disposal and also to minimize recurrence of the same, aggregation if different types of swarf and scrap so that maximum prices could be obtained while disposing off.

**Stores Management:** Involves stores layout, improvement of storage system, stores control of terms of receipt and issues of materials, maintenance or stores records and stores accounting.

**A.K.Chitale and R.C.Gupta** have brought out all the functions of materials management under four broad activities. The following table gives the broad four activities of material management and brief description of all those activities.
TABLE 2.1.  
A BRIEF OUTLINE OF ACTIVITIES OF MATERIALS MANAGEMENT

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Inventory control</td>
<td>Planning and maintaining levels of raw materials, tools, general supplies, etc. Keeping a watch on in-process and finished goods inventory. Applying selective inventory control methods calculating economic order quantities and economic manufacture quantities, doing simulation to work out when to order and how much to order. Doing material requirement planning in case of dependent demand inventory.</td>
</tr>
<tr>
<td>(2) Purchasing</td>
<td>Developing vendors for supply of components, sub-assembly and also for other items such as supplies, assisting design department in standardization, value analysis, advising and disposal of surplus and scrap. Procurement of materials at right time in right quantities from right source, right quality, etc.</td>
</tr>
<tr>
<td>(3) Storekeeping</td>
<td>Receiving, storing and issuing as well as material handling in stores.</td>
</tr>
<tr>
<td>(4) Traffic or carrying and forwarding</td>
<td>Receiving incoming materials called inbound logistics and carrying for outbound logistics.</td>
</tr>
</tbody>
</table>
2.6. INTEGRATED MATERIAL MANAGEMENT

2.6.1. Introduction

Materials management serves various functions—materials planning, purchasing, receiving, stores, material handling, inventory control, scrap and surplus disposal, etc. These functions in isolation yield optimal results, e.g. purchasing will be interested in availing quantity discounts and buy maximum material on one batch. On the other hand, stores will be interested in keeping stocks to the minimum. Objectives of materials management are in conflict and one single top manager should be permitted to take decisions in consultation with CEO. The three vital functions of materials management, namely materials planning and control, purchasing and stores and inventory control should be handled by managers reporting to the vice-president of materials. However, it should be noted that even in the USA, only 60 per cent industries follow integrated materials management.

According to Peter Drucker, the management guru, a good organization chart is vital for the success of any organization. If the organization chart is not properly designed, then, even with good personnel, it becomes difficult to achieve the objectives. Accompanying diagram in Fig. 2.1 is the organization chart with materials manager occupying a position of vice-president, then both managers of purchasing and storage report to vice-president of materials. The VP material is responsible for planning and execution of various objectives of the materials management.
2.6.2. Need for Integrated Concept

Having recognized the importance of the materials management function, let us now see why an integrated approach is necessary. Various functions served by materials management include the materials planning, purchasing, receiving, stores, inventory control, scrap and surplus disposal. If some of these functions are separately handled, there is a chance of a conflict of interests. Purchasing department, if allowed to operate independently, may take decisions which result in sub-optimization. For example, under a separate set-up, the purchase
department may treat discount as a very important factor and buy large quantities to avail of the discount without taking into account its impact on the warehousing and carrying costs. In other words, we need to achieve optimum results for the organization as a whole. An expansion, for example, will require planning for the increased requirements, developing new sources, revision in inventory levels, apart from the increased load in receipt of material, inspection and storing.

In an integrated set-up, the materials manager who is responsible for all such inter-related functions, is in a position to exercise control and coordinate with an overview that ensures proper balance of the conflicting objectives of the individual functions. Integration also helps in the rapid transfer of data through effective and informal communication channels. This is crucial as the materials management function usually involves handling a vast amount of data. Therefore, integrating the various functions ensures that message channels are shortened and the various functions identify themselves to a common materials management department, which, in turn, results in greater coordination and better control.

2.6.3. Advantages of Integrated Materials Management

Organizations, which have gone in a big way for the integrated materials management, usually enjoy many advantages. While in the past in many organizations inventory control, purchase, stores and movement were grouped into two or three departments, it is now being realized all over the world that a combined set-up is the best from the coordination point of view, efficient working and cost reduction. The modern nomenclature for this set-up is 'Integrated Materials Department' and the various advantages of such a unified setup are given below. These advantages, according to the authors, help in achieving the objectives of materials management by the company in a better way. These are also listed by Gopalakrishnan and N.K. Nair.
1. **Better accountability:** Through centralization of authority and responsibility for all aspects of materials function, a clear-cut accountability is established. Various user departments can direct their problems with regard to materials to one central point so that action can be taken immediately. This helps in evaluating the performance of materials management in an objective manner.

2. **Better coordination:** When a central materials manager is responsible for all functions, the departments under the materials manager create an identity, which is common. This results in better support and cooperation in the accomplishment of the materials function. The user departments also find that they have to approach one department for discussing and solving their materials' problems. This creates an atmosphere of trust and generally betters relations between the user departments and the materials management department.

3. **Better performance:** As all the interrelated functions are integrated organizationally, greater speed and accuracy results in communication. Need for materials are promptly brought to notice by materials planning. Purchase department is fed with stock levels and order status by stores or by inventory control departments. All this calls for judicious decisions leading to lower costs, better inventory turnover, reduced stock-outs, reduced lead time and a general reduction in paper work.

4. **Adaptability to EDP:** The centralization of the materials function has made it possible to design data processing systems. All information with regard to material function is centralized under the integrated materials management function. This has facilitated the collection, collation and analysis of data, leading to better decisions. Advanced and efficient electronic data processing systems can be economically introduced under an integrated set-up.
5. **Procurement at the right time:** The principal objective of materials management is to obtain raw materials, tools, general supplies, etc, at the right time. This involves recoupment on time by inventory control, processing the purchase order and follow-up by purchase section; sending shortage reports by inventory control as well as by stores at different stages; clearing the goods from docks, railways or road transport offices in the case of purchases from distant sources; checking and taking materials into finished stock by stores, etc. The combined set-up brings about greater coordination and increased sense of responsibility with regard to getting materials at the right time. This avoids passing the buck between purchasing and stores.

N.K. Nair has highlighted further benefits of what he calls combined purchasing and stores department which is nothing but integrated materials management.

6. **Improved Inventory control:** Variations that may occur in delivery time, its effect on inventory and production, the necessity of adjusting the minimum and maximum levels on inventory will be better understood by integrated approach which fosters better understanding between purchase and stores.

7. **Increased productivity:** Productivity is the ratio between input and output. As far as materials management is concerned, it implies reduction of costs and increase in profit. Materials management tools such as value analysis, standardization, simplification, reduction of procurement cost by bulk order, reduction of investment and carrying cost by staggered rate of delivery, avoiding obsolescence, control over consumption of materials, etc. enhance productivity. Some factors such as procurement cost and carrying cost pull in opposite directions and complicate the issues of materials management. Therefore, the solution, which will curb the conflicting interests, can be to have a common department head. Integrated approach results in a better solution.
8. **Control of price:** The price depends upon the quantity. If the decision regarding the quantity to be bought rests with a separate department, the work of the purchase officer is handicapped. In a combined department, the department head is in a position to negotiate the price on the basis of the present and future requirements and acceptable delivery. Advantages of price break can be availed of after proper analysis through price break mathematical model under the guidance of the department head, materials.

9. **Improved Inventory control:** One of the main objectives of materials management is to keep inventory at a low level. This can be achieved by staggering delivery and control of Safety stock. There should be close co-ordination between inventory control and purchase. In a combined inventory control and purchase, the head of the department is in a position to see that material requisition is raised on time.

10. **Dead stock:** Dead stock will often come to the notice of a common department head during his supervision to the stores, and this facilitates quick disposal action.

11. **Effective classification and codification:** The classification and codification work requires through knowledge of the materials and their application or use. Often this calls for actual examination of the materials in the stores and consultation of the papers received in the purchase section. For large industries involving multitudes of items, codification project is very important and useful. Many times the help of an outside consultant is needed to complete the job.

12. **Heavy packages:** Handling of receipts, particularly heavy packages, is simplified when the stores and purchase sections are combined. When separate, the stores often gets advice regarding unloading too late which creates problems, pressure and irritation.
13. **Assurance of verifying right materials**: In the integrated approach the vice-president materials gets opportunity to see what is being supplied against his orders and to assure that he receives the right material for the money paid.

14. **Better focus on urgent materials**: In an integrated set-up, a single executive is the head of both the stores and purchase. This enables him to understand the urgency of various purchases. From daily reports, he gets first hand information regarding materials which have arrived, and therefore he is in a position to expedite issue of urgent materials.

15. **Quick return of defective**: The integrated set-up monitors quicker return and replacement of rejected materials and takes action accordingly.

16. **Better utilization of stores space**: Although bulk purchases may be an advantage for better price, it may create storage difficulties. If Stores and purchase are separate, such a factor is likely to be overlooked.

17. **Reduced paperwork**: In a combined set-up, the inventory control will be adjacent to the purchase section. This enables the purchase section to utilize the information available on the Inventory for the purchase work. In a separate set-up, the inventory control goes with the stores. This means dual records and added cost.

18. **Reduced Correspondence**: Correspondence between stores, purchase and inventory control is reduced in the integrated set-up. Reduced paperwork improves office efficiency.

19. **Ease for accounting department**: The work of accounts is easier in the integrated set-up. Otherwise, accounts department has to shuttle between the stores, purchase and traffic for settling and reconciling issues.

20. **Miscellaneous advantages**: Under a central materials manager, a team spirit is inculcated. This boosts morale and enhances cooperation. The opportunities for growth and development are better in an integrated set-up. An individual under such a set-up is not confined to any one function alone,
and he gets, over a period of time, exposed to broader aspects of the materials function.

2.7. RELATIVE STATUS OF THE MATERIALS MANAGERS AND ORGANISATION OF MATERIALS MANAGEMENT

In the integrated approach to materials management there is independent materials department. Design, sales, finance and personnel departments, etc. also work as separate departments and their heads derive authority directly from the CEO. This position enables the materials manager to formulate policies and procedures in a manner which will benefit the organization as a whole instead of any particular department. This results in a proper fixing of the accountability in materials as well as other departments.

An effective organization is one which achieves its objectives in the most cost efficient manner. This deceptively simple sounding statement masks what is a most complex topic. The search for most effective organization has exercised some of the best brains in the academic world. Government and business and is a major aspect of work of management consultants.

An organization needs to be developed to meet specific requirements of the enterprise concerned. Those specific requirements include careful consideration of objectives strategies, resources, the style of top management, the function performed within the organization and their inter-relationships with respect to the achievement of the stated objectives.

The inter-related functions of material management are normally looked after by individuals. As activities expand, the function of individuals become more and more specialized, the integrated material management concept requires central co-ordination of all the inter-related activities. The material management function ought to be headed by a competent professional who must be a member of top
management team as managing materials is a critical function. It has been recognized that material management is a top management function.

It is emphasized that an organization structure should be developed to meet the specific needs. By the nature of things, those needs will differ from organization to organization. Because material management has been successfully applied in one company does not follow that the same version will be suitable for another company, nor indeed, the approach would provide suitable in the later environment. Thus the executive charged with the task of developing an effective and efficient procurement organization will need to do so in the light of environment within which that organization is to function and the objectives and strategies which have been specified for it. This necessitates appreciation of its proper relationship with other functions in the business and the need to develop and support staff of necessary caliber to achieve the objectives which have been set.

2.8 DESIRABLE QUALITIES OF PURCHASING AND MATERIALS MANAGER

Since purchase department is virtually the custodian of the Firm’s money, it is essential that the department is manned by persons with requisite qualifications and qualities. Purchase staff, particularly the purchase personnel (e.g. purchase manager, purchase executives, buyers, etc), must be honest, dependable, competent, and product specialist. The following qualities must be considered while recruiting purchase manager/purchase executive/buyers.

1. Materials specialist: A good buyer must have thorough expertise of the company’s products, components and functional aspects of each component so that he can be authentic while discussing his requirements with the suppliers and with users of purchased materials. With new and exotic
materials coming on the scene, a materials specialist would be an asset in
the purchase/materials department.

2. **Educational background**: The person selected should be well qualified. Engineering degree/diploma is preferable though not necessary. The knowledge of commercial and mercantile law is a must.

3. **Dependability**: The buyers have the responsibility to provide materials of the right quality, in the right quantity, at the right time and at the right price so that production activity is smooth and uninterrupted. To ensure this, the reliability of the persons handling such responsibility is essential. The other departments should have trust that timely delivery will be ensured.

4. **Farsightedness**: Purchase function is full of unpredictable situations. The buyer should have farsightedness to handle various situations in his day-to-day work. This calls for acumen and alertness.

5. **Adaptability**: Purchase personnel have to deal with different departments of the company while discharging their duties. Therefore, they should adapt themselves to get along with people well to secure their cooperation, guidance and help. This requires understanding of human psychology.

6. **Tact**: Dealing with suppliers both in the private and public sectors requires tact on the part of the buyers.

7. **Honesty and integrity**: Purchase involves money transactions and suppliers do try to bribe buyers to influence their decisions. Purchase personnel therefore should be persons of integrity to avoid temptation of various types.

8. **Good communication skills**: Purchase personnel need to talk to the supplier's representatives while negotiating, placing oral orders, doing follow-up, etc. clearly and convincingly. This will avoid confusion and chaos.

9. **Stickler for details**: Purchase transactions involve short and long-term financial commitments and therefore these transactions must be made after
detailed investigations of economic and other data. This necessitates the buyer to be a stickler for details.

2.9. INTERDEPARTMENTAL RELATIONSHIP

The various sections of the materials department, viz. inventory manager, purchase, stores and traffic are connected with other departments in one way or the other. When making new designs, discussions take place between product design and purchase regarding availability of various materials.

Similarly, when developing sources of supply for components to be subcontracted, consultation between purchasing and design will be necessary. Also, when selecting suppliers of capital equipment, production and maintenance department comes into the picture.

The major portion of the purchases in a manufacturing concern is based on the requisitions raised from the production and maintenance departments. The materials department has the responsibility to see that sufficient materials are always available for production and maintenance. In many organizations, the inspection of incoming materials is done by the quality section (staff of inspection).

Further, the materials department (stores) is the custodian of tools, operational supplies, raw materials, finished components, etc. and the production and maintenance departments are the user departments.

The relationship with sales depends upon the type of the set-up. If the dispatch section comes under the materials department, contacts with sales will be greater. The sales can also assist materials department (Purchase) in expediting supplies from certain suppliers because of its spread-out nature.
The extent of contact with accounts includes preparation of budgets, programming delivery of expensive raw materials and capital equipment in such a way as to avoid strain on the company’s finance, selection of suppliers and price determination through tender committees, opening of letters of credit, payment of supplier’s bills often involving clarification from purchase or stores, accounting of petty cash.

It is essential that the various forms used in the materials department (purchase orders, requisitions, delivery notes and so on) are also sent to the accounting department so that essential accounting data can be collected without any difficulty.

The relationship with the personnel department hardly needs a mention. Everything connected with staff matters such as recruitment, promotion, disciplinary action, etc. has to be handled through this department.

The efficiency of a company’s overall operations depends to a great extent on the amount of cooperation and understanding among various departments. The materials department must, therefore, maintain good relations with other departments. Without their cooperation or without cooperating with them, the various departments cannot function efficiently. Procedures and policies affecting other departments should be introduced in consultation with them. Approach to other departments should be constructive and their suggestions should be given due consideration. Finally, personnel prejudices, ill-feeling and psychological aspect of conflict should not be allowed to hamper the working of the organizations.

As the materials management, with in its ambit, includes materials inventory control, purchasing, store keeping etc, as the major activities, the researcher feels
it necessary to give some more details of these major activities. The discussion is presented in the following pages.

2.10. CLASSIFICATION OF MATERIALS

As the materials management, with in its ambit, materials inventory includes materials planning, inventory control, purchasing, store keeping etc, as the major activities, the researcher feels it necessary to give some more details of these major activities. The discussion is presented in the following pages:

2.10.1. Need for Classification and Identification of Materials

Every organization stores a large number of items which are generally kept in the stores. If proper arrangement is not made for their identification, confusion is bound to arise in locating them. This confusion will delay the delivery of materials and consume time and the entire operation of the store room, and consequently, the shop productivity will be adversely affected. Without proper identification, it will not be possible for a material controller to place a purchase requisition to the purchase department with all the accurate details. The materials manager is also responsible for classifying the materials before they are sent for inspection, entered into the ledger of the stores and binned. Therefore, a broad classification of materials according to their nature, use and service becomes a vital issue.

2.10.2: Classification of Materials –General Classification

The general classification of materials is as under:

1. **Raw materials:** Raw materials are purchased from the original producer or manufacturers and are used directly or subjected to a conversion process in producing the firm’s product. For example, plastic granules are the raw materials which are converted into plastic products through conversion processes such as plastic moulding. The moulded plastic part shall be a raw material for some assembly along the supply chain.
2. **Purchase components:** Nowadays, most of the industries purchase finished components from the vendors and assemble them within their plant to obtain the finished product. Usually 95 per cent purchased components are those which do not represent the core competency of the buying firm. But 5 per cent of in-house components which represent the core competency of that industry go into the final finished product. These 5 per cent are critical high value parts.

3. **Work-in-progress:** This category represents the materials in the semi-finished state as a result of operation being performed on raw materials purchased from outside. These constitute a large proportion of inventory blocked as capital. Lean manufacturing or low inventory manufacturing has the objective of minimizing the WIP (Work-in-Progress) through speeding up the operation by using a pull system on the downstream side.

4. **Finished goods:** The finally produced goods are termed finished goods. They are ready for sale and function as a buffer between production and marketing departments.

5. **Spares:** Spares are important inventories and usually represent the standby for important components of production equipment which convert the raw material to finished product. Spares are classified into three categories: vital, essential and desirable.

6. **Consumables:** These materials are used in the manufacturing process and cannot be reused for the same purpose. Coal, mineral oil, lubricants, cotton waste, paints, oxygen, stationery items like pencil, paper, ink, etc represent some of the consumable stores.

7. **Machinery and equipment:** All the machinery, power and hand-driven equipment such as presses, lathe machines, typewriters, electric motors and other machines used in production in other departments is classified as stated above. A complete record of these machines during their lifetime in terms of repair, replacement and renewal is usually kept on a history card.
8. **Inflammables:** Due to their hazardous nature, inflammables are generally stored as far as possible from the main building, with fire-fighting arrangement nearby. Materials such as petrol, kerosene, paints and films fall into this category.

9. **Chemicals:** Chemicals should be stored, preserved and issued very cautiously after a careful scrutiny and proper analysis since their use could put even life to risk. Items such as carbides acids and nitrous gases belong to this class.

10. **Furniture:** Moveable contents of a house like chairs, tables and almirahs are furniture items. Their maintenance is quite important and a record should be maintained, since they are loaned at times.

11. **Scrap materials:** Scrap represents the waste material produced in the process of production. Scrap is sold to secondary markets so as to fetch some value out of it.

12. **Packaging materials:** These include all kinds of wrapping materials such as paper, sawdust, straw and containers like boxes, drums, bottles as well as protective coating such as wax, grease, etc.

13. **Fuel stock:** These are also consumable store items. But there is a slight difference between the two in terms of their use. A fuel stock is directly used for production as a fuel for furnace, oven, etc. Sometimes it may be taken as raw materials. Coal is fuel stock but is also raw material for iron and steel industry.

14. **General stores:** In large undertakings a general stores section is separate from other stores under an independent in-charge to cover a large number of items not directly linked with production process. However, they are required for efficient running of the enterprise. For example, soap, brasso, brooms, stationery, etc. Belong to this class.
2.10.3. Classification According to Condition of Materials

Classification according to the condition and usability of materials is as under:

1. **Serviceable, unserviceable and obsolete store**: Serviceable stores are those which go temporarily out of order. After repairing and replacement they again become functional. Unsuitable stores are those items which have outlived their life. They are thus fit only for disposal as scrap. Obsolete stores are those items which are out of date because of the new inventions in design, use, etc. These also need a quick disposal.

2. **Finished and semi-finished stores**: Whereas finished stores items are ready for sale, the semi-finished goods need further processing by production department before they are ready for sale.

3. **Dead stock items**: Equipment and machinery which have some definite life but cannot be written off before the expiry date are classed as dead stock item.

4. **Unusable stock**: This category of items cannot be used in production unit because they are defective and damaged beyond use.

2.11. MATERIALS PLANNING

Materials planning is the scientific way of determining the requirements of raw materials, components, spares and other items that go into meeting the production needs within economic investment policies. Materials planning is a sub-set of the overall production planning and control system which has a broad perspective. Materials budgeting is an estimate of expenses to be incurred in the procurement of materials and it helps effective execution and control of materials plans.

2.11.1. Definition of Materials Planning

Materials’ planning is the scientific way of determining the requirements of raw materials, components, spars and other items that go into meeting production
needs within the economic investment policies. Thus, by definition, it follows that the materials planning function is a sub-system in the overall planning activity. This too, is evidence by fig.2.3. The factors which affect materials planning can be classified in two categories –macro factors and micro factors.

- **Macro factors:**

Some of the macro factors which affect materials planning are price trends, business cycles, government import policy, credit policy, etc. The recent credit squeeze followed by the interim reports submitted by the study group to frame guidelines for follow-up of bank credit is an excellent case in point. This study group headed by Mr. P.L. Tandon of the Reserve Bank of India has already given guidelines for inventory levels of raw materials, stock in process, finished goods as well as for receivables and bills purchased and discounted. Industry wise details are furnished. Which is an extract of the famous Tandon committee reports of 1975. No materials planner can afford to ignore these guidelines, as banks extend credit only as per these guidelines. Such macro-level policy changes are bound to take place in future as well should be considered while evolving the materials plan. Macro factors are also known as external factors. Some of the macro factors are discussed below:

I) **National economy:** This is measured by gross domestic production in which production of all sectors is added up by central statistical organization. It is one of the indicators of the health of the economy.

II) **Price trend:** This follows law of demand and supply.

III) Monetary and fiscal policies of government: A) credit regulation, B) guidelines, imported comes under the open general license or a need for license, thought, with liberalization, this constraint is relaxed to some extent.

IV) **Business cycles:** These are the of recession or inflation in world economy.
Micro factors:-

The materials planner also has to take various factors into account at micro-level. They include corporate objectives, plant capacity utilization, rejection rates, lead times, inventory levels, working capital, seasonality, delegation of powers, and communication system.

2.11.2. Importance of materials planning:-

Planning and control forms the core managerial function. Hence, materials planning and budgeting is given a prominent place in the integrated materials managements set-up. This is so because planning for materials and working out a realistic not only help motivate people but also serve as a control device. Planning is done at all levels of the organization. This is illustrated in Fig. 2.2:

![Diagram of planning and levels of organization]

In the context of materials management, planning has to be done for highly non-programmed decisions such as import policy, foreign exchange availability and credit squeeze. Similarly, planning has also to be done for highly programmed decisions such as inventory for working capital, out delivery schedules, etc. the relationship between materials planning and other major function is shown in Fig.2.3.
2.11.3. Flow chart for Materials Planning:

FIGURE 2.4 Flow process of material planning

Materials planning can be used to assess the “firm” s requirements “for different planning horizons. As the planning horizon exceeds one year, the forecast becomes less reliable, normally, planning is done on a quarterly basis. This is because the materials planner, at the beginning of every quarter, will find that some materials are in short supply and some in excess, owing to errors in forecasting. Thus, operating on a quarterly basis helps to rectify errors. At the same time, since quarterly period is sufficient long enough in most cases, realistic ordering can be done with the suppliers, this technique is ideally suited for engineering industries.
2.12. INVENTORY CONTROL AND STORE KEEPING

2.12.1 Introduction to Inventory Control:

Inventory management is one of the most important operations management responsibilities as inventory involves a great deal of capital and delivery of goods to customers. Inventory management has an impact on all business functions, particularly operations, marketing, accounting, and finance.

It is perhaps best to begin our discussion with the definition of inventory. In financial parlance, inventory is defined as 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. The operational definition of inventory would be: the amount of raw materials, fuel and lubricants, spare parts and semi-processed material to be stocked for the smooth functioning of the plant. Since these resources are idle when kept in the stores, inventory is defined as an idle resource of any kind having an economic value. An inventory is a stock of materials used to facilitate production or to satisfy customer demands. Inventories typically include raw materials, work-in-progress, and finished goods. This definition fits nicely when operation is seen as a transformation process. In Fig 2.5, an operation is shown as a materials-flow process with raw materials inventories waiting to enter the productive process, work-in-process inventories in some intermediate stage of transformation, and finished goods inventories already completely transformed by the production system.

![FIGURE 2.5 Material flow process](image-url)
The definition of inventory as a stock of materials is narrower in scope. Some authors define inventory as an idle resource of any kind that has potential economic value. This definition allows one to consider equipment or idle workers as inventory, but we consider all idle resources other than materials as capacity. From a management and accounting perspective, it is important to distinguish between inventory and capacity. Capacity provides the potential to produce, while inventory, as defined here, is the product at some point in the conversion and distribution process.

Inventory stocks are located at various points in the production process, with flows connecting one stock point to another. The rate at which a stock can be replenished is the supply capacity, and the rate of stock depletion is demand. Inventory acts as a buffer between the different demand and supply rates.

2.12.2. Importance and Scope of Inventory Control

The primary purpose of inventories is to 'uncouple the various phases of operations'. Raw materials inventory uncouples a manufacturer from its vendors; work-in-process inventory uncouples the various stages of manufacturing from each other; and finished goods inventory uncouples manufacturer from its customers. Within the overall uncoupling purpose, there are four reasons to carry inventory:

(i) **To protect against uncertainties:** In inventory systems, there are uncertainties in supply, demand, and lead time. Safety stocks are maintained in inventory to protect against those uncertainties. If customer demands were known, it would be feasible—although not necessarily economical to produce at the same rate as consumption. In this case, no finished goods inventory would be needed; however, every change in demand would be immediately transmitted to the production system in order to maintain customer service. Instead of such tight coupling, safety stocks of finished goods are maintained
to absorb changes in demand without immediately changing production. In a similar way, safety stock of raw materials are maintained to absorb uncertainties in delivery by vendors, and safety stocks of in-process inventories are maintained to allow for poor maintenance, unreliable workers, or fast schedule changes. These safety stocks, however, can often be reduced by better coordination of suppliers and customers in the supply chain.

(ii) **To allow economic production and purchase:** It is often economical to produce materials in lots. In this case, a lot may be produced over a short period of time, and then no further production is done until the lot is nearly depleted. This makes it possible to spread the set-up cost of the production machines over a large number of items. It also permits the use of the same production equipment for different products. A similar situation holds good for the purchase of raw materials. Owing to ordering costs, quantity discounts, and transportation costs, it is sometimes economical to purchase in large lots, even though part of the lot is then held in inventory for later use. The inventory resulting from the purchase or production of material in lots is called cycle inventory, since the lots are produced or purchased on a cyclic basis. There is a trend underway in industry today, however, to reduce set-up times and costs drastically by altering the product or process. This will result in smaller lot sizes and much lower inventories. In some cases, the set-up time can be reduced so that the economical lot size is one unit.

(iii) **To cover anticipated changes in demand or supply:** There are certain situations where changes in demand or supply may be anticipated. One case is where the price or availability of raw materials is expected to change. Companies often stockpile steel prior to an expected steel industry strike. Another source of anticipation is a planned market promotion where a large amount of finished goods may be stocked prior to a sale. Finally, companies in seasonal business often anticipate demand in order to smooth employment.
For example, a producer of air conditions may select a nearly uniform rate of production, although a great deal of the product is sold in the summer.

(iv) To provide for transit: Transit inventories consist of materials that are on their way from one point to another. These inventories are affected by plant location decisions and by the choice of carrier. Sometimes the inventory in transit is called pipeline inventory because it is in the “distribution pipeline”.

2.12.3. Objectives of Store Keeping:

In an organization, a store is mainly intended to provide staff activity in the production of goods or services. No industrial unit or public undertaking of any size can be managed efficiently without it. The basic objective of store keeping is to provide services to the operating functions in the most economical manner. Store keeping primarily includes the activities of receipt of materials, preservation of materials and issue of materials as and when required by user departments. The objectives of store keeping are as follows.

1. Minimizing cost of production through minimizing cost on materials: The primary objective of store keeping is to provide services in the most economical manner so that the production cost can be minimized. The cost of the material used in the production is the sum of total cost of material plus cost of procurement plus the cost of carrying it in the store. The store costs include the cost of preservation, cost of accounting, cost of insurance and cost of store equipment. These costs affect directly or indirectly the total cost of product which should be immixed. The final cost of product is the sum of cost of raw material plus cost on material plus conversion or processing cost in reduction shop.

2. Maintaining the value of materials: One of the objectives of store keeping is to maintain the value of materials in stock at the lowest practical level at all times in order to economize the working capital and to minimize the cost of storage. The period of stay of each stock item is kept as short as possible and
efforts are made to avoid the inventory from becoming dead because obsolete, redundant or surplus material is simply money sitting on a rack, requiring more money to be spent on its custody. Therefore, store keeping must maintain the value of store items.

3. **Services to user departments**: Another objective of store keeping is to make available efficient services to the organization. These services include taking care of raw material, work-in-progress, finished goods and scrap control.

   - To make available a smooth flow of raw materials, components, tools, equipment and any other commodities necessary to meet production requirements.
   - To provide maintenance materials, spare parts and general store as required.
   - To receive and feed work in progress (items in the process of manufacture).
   - To accept and stores are and other discarded material.
   - To account for all receipts, issues and goods in stock.

4. **Estimating coordinates with other departments**: Coordinates is the essence of an effective management. Although the main objective of store department is to keep the materials in order to remain in touch with the material inventory control section, it does not mean that all other departments of the organization are to be ignored. To discharge its responsibilities adequately and efficiently, the stores department must actively cooperative with other departments not only to provide service but to have information and maintain connectively. 'S' that the service is efficient. Other departments like production department, inspection department, finance and accounting departments, like production department, inspection department, finance and accounting department, purchase department and sales department are fully attached with stores department and stores department cannot function effectively without their
cooperation. Thus the store department should try to improve coordination with all these departments.

5. **Advising materials manager:** Store keeping is an important part of materials management. That is why management has to rely heavily on the store department for formulating its investment policies. Product costs have 50 to 60 per cent contribution due to a major portion of material costs. The suggestions given by the storekeeper regarding the purchase, preservation and consumption of materials may be of great use for the management. This objective can be achieved only if the store manager is fully conversant with the store and store items. He can give useful advice to the materials manager regarding the various stock levels and quality and quantity of materials to be purchased.

2.12.4. **Functions of Storekeeper**

The storekeeper occupies an important place in the organization. He is the person who keeps the stores in order and handles them efficiently. He should have a sound knowledge of routine activates of store and experience of running a store, in addition to the technical knowledge required for the job. He is the person who maintains the stores and keeps a watchful eye on the movement of both men and materials with a view to keeping the whole organization moving. The following functions can be included in the scope of his duties.

1. **Identification of materials:** Identification is the process of systematically defining and describing all items of stock. It includes preparation of stores code or vocabulary, adoption of material specifications and introduction of a degree of standardization. This essentially is the job of design, planning or standards department, besides the purchasing department. Thus it is the duty of the storekeeper to give different codes, symbols or colours to the items in the store so that difficulty in identifying the different items of material is overcome. Moreover,
it will also make the task easier for the person running the affairs of the store in
the absence of the storekeeper.

2. **Receipt of materials**: Receipt of materials is the primary function of a
storekeeper. Receipt is the process of accepting from all sources materials.
Equipment and spare parts used in the organization, including supplies for
manufacturing or operating processes, plant maintenance, offices, capital
installations and finished products. He must ascertain at the time of receipt of
material that it is according to the purchase order and inspection note to become
fully conversant with the materials.

3. **Storage**: This function involves the management of storehouses, namely
faultless working of material handling and storage equipment, and the safe custody
and protection of stock. Storage implies the act of storing the materials the
material items should be kept at proper places so that these can be easily found as
and when required without any delay. The layout of the store should be made in
such a style that there should be “place for everything and everything should be in
its place”.

4. **Inspection**: Inspection means the examination of incoming materials for
quantity and quality. Stores department takes the help of inspection personnel
from quality control department to have the goods inspected. Sometimes even
some stores personnel skilled in inspection do this work. Whatever the system of
inspection may be in force, it is the duty of the storekeeper to see to it that the
inspection is done before the items are accepted into stock.

5. **Material verification and stock taking**: It is an important duty of the
storekeeper to take stock of the materials and to conduct stock taking. Stock
taking is the process of physical verification of the quantity and condition of
goods, usually on a periodic basis. Similarly, stock checking is also done on an ad
hoc basis for introducing element of surprise. Use of the computer helps in
continuous information and management. Moreover regular verifications also
ensure availability of materials intact.
6. Issue and dispatch: This is the process of receiving demands, selecting the items required and handling them over to the users. Storekeeper must ensure that the material requisition note bears the signature of the authorized person. He can stop the supply of those materials which are in short supply. This function also includes packaging of the materials and loading them in the transport to the point of use.

7. Record keeping and accounting: Keeping the record of incoming and outgoing materials is one of the important functions of the storekeeper. Stores accounting is the process of recording stock movement and balances in terms of financial value. It reduces the store costs. Moreover, material records make the purchase, inspection and verification easy. Accounting records must categorize materials in A,B,C. category, VED category etc.

8. Preservation and protection of materials: Storekeeper should ensure that materials are preserved and stored in such a way that there is minimum loss at the time of keeping, handling or verifying the materials. Proper protection and preservation of materials also help in maintaining the value and quality of materials.

9. Inventory control: Inventory control is the operation of continuously arranging receipts and issues in such a way that stock balances are adequate to support the current rate of consumption with due regard to the economy. It is keeping track of inventories so that items are available when required. This aim is achieved by purchasing items at economic price, at a proper time, from a proper source and in sufficient quantity. In this context, it is the duty of the storekeeper to determine the proper levels of material and to keep a check over all kinds of wastages of material. It is the proper inventory control that ensures protection against fluctuations in demand and output and better use of men, machines and material.

10. Advice to the purchase officer: The storekeeper should give proper advice to the purchase officer regarding the purchase of material from time to time. He should anticipate the quantity of materials to be purchased and at what time it
should be purchased so that there is neither over investment in materials nor any stoppage in production. For this purpose, the storekeeper must know the minimum, minimum and reorder levels of materials.

2.12.5. Features of Successful Store Keeping

The success of store keeping depends upon how it provides economy of time employees and expenses. The true yardstick of judging its success is to find how smoothly the production department runs. A scientific store keeping should have the following features:

1. **Location of Store:** A store should be centrally situated to be easily approachable by other departments. A central location makes the receipt and issue of material easy and economical. The principle of minimum movement should be observed while choosing the location of a store. By limiting the need to move materials, money is saved. This means that storehouse has to be as near to the user as possible. Locating the store in the same building would be most advantageous. Accessibility by road, rail or river transport is another consideration.

2. **Layout of the store:** A good store keeping gives the layout factor utmost importance. Store layout means preparing such a structure of store in which there will be any difficulty in keeping in or taking out the materials from racks, shelves bins or containers. Two important factors in determining the layout are: economy and efficiency. A storehouse should have optimal size. It should not waste space or be too much congested. The layout should be made in such a manner that smooth work flow can be maintained throughout the storehouse.

3. **Computerization of records:** Scientific, proper and complete records increase efficiency and eliminate wastage and misappropriation. If the records are up-to-date and stored carefully in a database, all disputes with
the creditors, debtors and insurance companies arising in the course of transactions can be settled easily and promptly. Moreover, store records ensure a strict check and vigilance on the dishonest employees, if any, and chances of theft of material are reduced.

4. **Classification and codification of materials:** Material costs affect the production costs to a great extent. Thus, it becomes necessary to use classification and codification system in order to exercise a better control over inventories. Classification is the grouping together of materials of technical similarity. Every item grouped under a classification should have a part or material code number or reference number. A code number is given in terms of what the material is and not in terms of its function. Both these systems ensure an effective management of the store department.

5. **Preservation of materials:** The chief aim of good store keeping is to protect the stores from all kinds of damage, theft, and pilferage. The quality and value of materials should not deteriorate for want of proper storage. Materials require different types of protection according to their nature. It requires airy, fireproof and well ventilated storerooms. Because preservation measures for materials vary from item to item, a good understanding of the material chemistry necessary. Personnel working in store must know the special properties of the materials which are desirable and should ensure that all measures necessary for their preservation are taken.

6. **Material handling equipment:** Material handling is a major activity in the storehouse, considerable attention needs to be paid to this aspect in order to ensure that material handling equipment contributes to the efficiency and economy. Flow of materials in the store should be carefully examined and planned to reduce the frequency of movement. Carefully selected material handling equipment such as cranes, fork lift trucks and conveyors etc, should be made available.
7. **Physical verification of stock:** Continuous verification of materials is a must for the effective functioning of stores department. Stock verification helps in verifying the accuracy of stock records exposes the possibility of fraud, theft or loss and reveals any weaknesses in the system for the custody and control of stock. Stock verification is a blessing for successful store keeping. The deficiency revealed by stock taking is a good measure of the efficiency and effectiveness of store keeping methods, controls and procedures.

8. **Management of stores:** Management is the key to effective functioning of any business activity and store keeping is no exception. There should be judicious allocation of work and duties of store keeping and these are to be properly managed. Only proper management can ensure the accomplishment of the objective of store keeping.

### 2.12.6. Relationship of Store Department with Other Departments

Stores department should not only provide services to other departments but also exchange information from them for efficient service. The relationship of store with other departments is discussed here:

1. **Stores and purchase:** Both these departments are parts of the material management and complement each other. Stores and purchase are the two wheels of materials management. Apart from routine day-to-day interaction, the other common areas between them are identification, standardization, inventory control, value analysis and salvaging operations, purchase informs store of orders placed and stores, in turn, inform purchase of receipts, rejections, shortages, breakages, theft and losses. Stores department should also inform the purchase department regarding changing production trends, slow and non-moving stock, obsolete or surplus stock and scraps.
2. **Stores department and production department:** Production department is the main customer of stores department. Stores should give satisfactory services to production department in all respects.

The stores department provides materials, tools, and other shop supplies when asked in required quantities to meet the production programmes. It advises, anticipating difficulties or failure in supply, and informs about any substitute or surplus materials available in stock. The production department sends to the stores relevant information regarding the work-in-progress and finished goods, any excess materials, tools, fixtures and equipment not currently required and notifies as soon as possible any impending changes in the production schedule.

3. **Stores and design department:** It is most desirable to have close contact between these two departments, particularly from the point of view of specifications, standards and obsolescence. Arrangements are made to see that before any new design, modification or technique is put into production, due note is taken of new materials needed in design so as to avoid obsolescence. The design department is consulted when obsolete items are listed for disposal.

4. **Stores and inspection department:** There should be proper accommodation for inspection personnel in the storehouses and they should be informed of all receipts. The stores department is responsible for holding goods received and submitting samples for inspection promptly. The inspection department in return inspects and delivers tests reports without delay.

5. **Stores and finance department:** There is a continuous exchange of information between these two departments. This information covers verification of records and physical stock, clearance of inward and outward invoices revision for prices and control of working capital allocated to the
financing of stock. Procedures are laid down to work together effectively to control the value of inventory and cost of materials the finance department usually provides regular periodic detailed statement of the cost of operation of the stores service. This enables timely action to be taken for cost control.

6. Stores and Sales Department: Especially in a marketing organization, sales are the chief internal customer of the finished goods. The sales department wants to ensure stocks at all times and this might be a costly affair in terms of inventory holdings. Close cooperation and an integrated approach can help in achieving the main objective of the management of increasing profitability. Any error in the information given by sales to stores might result in store of excess or shortage of materials.

7. Stores and transport department: The stores department is itself sometimes responsible for transport but where there is a separate transport department, it is essential that the two must work together harmoniously. The stores function reports details of load, pick up locations and discharge points, makes facilities available for the speedy, safe loading or unloading of goods and provides a valuable service. The transport department is responsible for the ready availability of vehicles and for providing information about the circumstances which delay deliveries or collections such as breakdowns, strikes or adverse weather conditions.

2.13. PURCHASEING OF MATERIALS

2.13.1. Introduction

Purchasing is the vital function of materials management apart from stores keeping, inventory control, traffic and waste control. After the approval of the material plan and preparation of the material budget, it is the responsibility of the purchasing department to follow strictly the scheduled production plan and procure the material of good quality, in desired quantity and on time.
Purchasing is not an end in itself. Material and supplies are purchased or procured for use in other departments and the purchasing department’s role is to meet their needs. Purchasing is deeply involved in the management of material flow from the outside sources down to production through the inventory pipeline. S.N Chari calls purchasing manager external production manager.

Material costs form the major part of the production costs. Therefore, production costs can be brought down by exercising control over the material costs which, ultimately, depends upon the purchase of material at a proper price. Material should be purchased in such a way that there is neither any overspending it nor any shortage, causing stoppage in production. Right quantity and quality purchasing will not only lead to reduction in the production costs but the quality of production will also improve. Thus a purchasing manager has a pivotal role.

2.13.2. Definition:

Alford and Banks in his book “Production Handbook” describes purchasing as the ‘procurement of material, machines and tools on payment. It is the act of exchange of goods and services for money. It is procurement of material at competitive prices. It also includes getting the quality material to facilitate the standardization and competitive marketability of the product. It is the process which includes all the functions from the time the need for the material is felt till the receipt and approval of the material so purchased. In a way, purchasing has become a very important managerial activity and requires a great deal of policy formulation and planning on the part of managers. Some other definitions of purchasing are:

“Buying comprises all those activities involved in finding a suitable source of supply, selecting the desired quantity, quality, grade, style and size
and coming to an agreement with reference to the price, delivery date and other conditions”.

--Pyle

“Scientific purchasing is the procurement by purchasing of the proper material, machinery, equipments and supplies of stores used in the manufacturing of a product, adopted to marketing in the proper quantity and quality at the proper time and lowest price consistent with the quality desired”

Dr. Walterz

“Purchasing is the business activity directed to secure the material suppliers and equipment required in the operations of an organization.”

Fine and westing

Thus, purchasing is concerned not only with the procurement of material but also all the economic issues which affect the cost of production.

2.13.3. Objectives of Purchasing

The objectives of purchasing, according to the classical definition, are to buy materials and services of the right quality, in the right quantity, at the right price, from the right source, and at the right time. In general management terms, there are eight basic objectives of purchasing:

• To ensure smooth operations with an uninterrupted flow of materials and services.

• To buy competitively and prudently, this includes two distinct considerations. To buy competitively involves keeping abreast of the forces of supply and demand that regulate prices and availability of materials. To buy prudently involves a constant search for better alternatives that give the best mix of rice, quality, and service. A buyer who pays more for a cheaper material than a competitor is not buying competitively. A buyer who purchases costly material when a cheaper material could perform the function equally well is not buying prudently at
all. It is the combination of competitive buying and prudent buying that contributes most to maximizing a company’s profits.

- To keep inventory investment losses due to deterioration, obsolescence and theft to a minimum.
- To develop reliable alternative sources of supply in consultation with other departments.
- To develop good vendor and supplier relationships. Good supplier relationships are invaluable. Under such relationships, the problems that arise between the buyer and the seller are readily solved. Suppliers also provide useful information to buyers.
- To achieve maximum integration with other departments of the firm. This needs understanding the requirements of other departments so as to translate them into materials support actions. The most common areas of support are in developing effective design and standardization programs, forecast of future prices and general business conditions, economic make-or-buy decision, and a repository of information and knowledge from suppliers regarding new materials, processes, prices, and materials availability.
- To train and develop highly competent personnel who are motivated to make the firm as well as their department succeed. Such personnel, in addition to fulfilling the responsibilities of the purchasing department, also serve as a reserve talent from which future executives of the firm can be selected.
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To develop policies and procedures which permit accomplishment of the preceding seven objectives at the lowest reasonable operating cost.

These objectives in principle apply to all categories of industrial buying activities, manufacturing concerns, governmental units, universities, hospitals, and all other types of activities that do not buy for resale.

2.13.4. Duties and Responsibilities of Purchase Department

Purchase department has to perform several duties and shoulder responsibilities. They are as follows:

1. Receiving purchase requisitions: Purchase department does not start any activity of purchase of material on its own. The department in need of a material usually presents a complete purchase requisition form. Purchase requisition is a written list of material for recoupment, sent to the purchase department. It is submitted to the head of purchase department and is generally prepared in triplicate. In other words, it is a formal request to the purchase department for the purchase of materials. Purchase department, after receiving the purchase requisition related to will decide about the material to be purchased. It is also the responsibility of the purchase department to get, information about the required material and its use. The purchase department should not make alternations the purchase requisition without consulting the department concerned.

2. Selection of sources of supply: After receiving the purchase requisition, it is the day of the purchase department to select the source of supply. This involves preparing a list of suppliers and then deciding with whom to do business. In preparing the list, the following steps should be taken to elicit information:

- Past experience with the supplier
- Interview with the salesmen
• Technical and descriptive catalogue
• Trade directories and trade journals
• Visits to trade fairs
• Consulting trade agencies
• Open and limited tenders for quotations
• Periodical advertisements in the press

If the material is to be purchased from the existing supplier, material order will be placed according to the previous terms and conditions. But, if the supplier is new, the order will be placed only after deciding upon the terms and conditions. It is also the responsibility of the purchase department to invite quotations from the new suppliers so that these can be compared with the price lists of the existing suppliers.

3. Placing the order: After selecting the source of supply, the purchase department prepares the purchase order. The purchase order is, in a way, an agreement, between the purchaser and the supplier in which the latter is ordered to supply goods under certain conditions. Six copies of the purchase order are prepared. The following details must be included in the purchase order:

• Price and terms of payment
• Purchase order number
• Quantity of the material to be purchased
• Description of the material
• Delivery conditions
• Special remarks

4. Delivery at right time: It is the duty of the purchase department to ensure the delivery of the material at the right time. The right time for the purchase of an item is said to be the point of minimum stock, the pint at which the material is expected to arrive is the storehouse. The purchase
department should take immediate steps to replenish the stock as soon as the material touches the reorder level.

5. Inspection and passing of bills: It is also the duty of the purchase department to verify the invoices with quotations inspect the materials received and ensure that the material is received as per the conditions laid down in the purchase order. It should also get the bill passed by the accounts department within a reasonable time. The accounts department should be instructed to make the payment at the earliest.

6. Preservation of purchase records: Purchase order is a legal document. Therefore, it is to be preserved by the purchase department. Besides, the list of sources of supplies, the vendor's record, contract file and record of printed forms are also to be kept safety by the

7. Good relations: The purchase department has a responsibility to establish cordial relations with suppliers. If suppliers are good, their performance in supplying the right quality in right quantity and at the right time is outstanding. The relation between the buyer and the seller and at the right time is outstanding. The relations between the buyer and the seller are seldom spoiled if they maintain business like relations.

8. Moral and ethical standards: The buyer keeps the purse of his organizations as a custodian. The management expects him to follow an ethical approach to the problems of purchasing. An official favouring a supplier, a friend or a relative of the buyer accepting a gift, the buyer himself accepting money or gift, in exchange of granting favour to a particular supplier are a few of the unethical practices which one may come across occasionally. It is the duty of the purchase officer to maintain high ethical standards.

9. Coordination: Coordination is the essence of good management for an organization to be successful. All the departments must act as cogs of well-oiled machine. And purchase department is no exception to it. It is one of
the duties of the purchase departments to maintain coordination with other departments in order to properly assess the purchasing needs.

10. **Purchase budget:** Since purchasing activity accounts for substantial portion of the corporate finance, it assumes a great importance among various budgets such as sales budget, personnel budget and revenue budget. The purchase budget indicates the purchases to be made for achieving the complete budget plan. This represents the requirements of capital expenditure budget. The purchase budget enables the purchase department to plan its purchases and place long-term contracts after considering all relevant factors.

2.13.5. **Principles of Purchasing:**

As stated earlier, purchasing is one of the most important functions of materials management. It is impossible to achieve the desired results for which the business exists without successful purchasing. Purchasing practices may vary according to the policy of management size and type of industry. However, there are five well-recognized principles of scientific purchasing (Fig.2.6) agreed upon unanimously by most authors and research workers. They are as follows:

1) Right quality
2) Right quantity
3) Right time
4) Right price
5) Right place
Right Quality:

A very clear specification of quality should be made in the terms of contract. The acceptable quality level and method of testing should be made discrete in the contract document. There should not be any compromise on the quality of the material at the time of purchase because it will reduce the quality level of the product if it is below the specification. A particular quality of an item may be right quality for a given purpose but the same may not be right for another purpose. Quality should be measurable and understandable as far as possible. The right quality is normally that quality which is decided keeping in view the buyer's preferences and cost factors. There is a trend to specify the value which is explained in Fig. 2.7 it should be verified that the C value of the products should be such that it falls between 1.50 to 1.70
FIGURE 2.7 Process limit and specification limit.

Where
T = Tolerance provide
P = Supplier process capability

Right quantity:

The main objective of the purchase department is to ensure flow of materials to the production department without any interruption. This is the most important parameter in buying. The decision of right quantity is related to the period for which it is to be purchased and also to the minimum total cost which may prevent shortages. Excess purchases result in overstocking. Capital is unnecessarily blocked and inventory carrying cost goes high. Concepts such as economic order quantity, fixed period and fixed quantity system, etc, serve as broad guidelines. But the buyer has to use his knowledge experience and analytical ability to determine the quantity after considering factors such as price structure, discounts, availability of the item, favorable reciprocal relations
and make or buy decisions. The purchase manager should not follow the beaten path; he should be creative and his long-term objective should be to minimize the cost of ultimate product. He has to adopt separate policies and procedures for capital and consumer items. He should apply appropriate mathematical models and selective control (ABC, VED, etc) wisely.

**Right Time:**

Material should be purchased at proper time so that production costs can be kept under control. For determining the right time, the purchase manager estimates the lead time information for all components. Lead time is the total time that elapses between the recognition of the need of an item till the item arrives and is provided for use. While deciding upon the purchases, the buyer has to consider emergency situations like strikes, lock outs, etc. Which might add up to the lead time in exceptional cases. The right time for ordering of material is termed reorder level of materials, which is decided on the basis of demand during lead time plus safety stock. The responsibility for purchasing the material lies with the purchase department. The store department sends the requisition to the purchase department as soon as the material touches the reorder level. The purchase department takes immediate steps to replenish the stock in order to procure the material by the time the material reaches the minimum level.

**Right price:**

It is very difficult to determine the right price. Right price is that price which brings the best ultimate value invested in purchasing the materials. It is, therefore, a combination of varying factors which determine the right price of an item to be purchased. The quantity, quality, delivery time, demand and supply curve, competitive trend, business relationship, distance, government restrictions, after sales services, discount, terms of purchase are the important
factors which govern the determination of right price of an item. The question of rice determination demands not only market knowledge but also a clear understanding of the pricing process.

Prices are determined by preparing a comparative statement and analysis of the price lists, catalogues, quotation, tenders, etc, of the various supplies. The prevailing market prices may also be the basis of price determination. There may be negotiations between the purchase department and supplies for the determination of price. The buyer should make use of learning curve effect to negotiate for a lower price in labour-intensive products.

Right Place:

Right place means that place of supply which is appropriate, keeping in view the place/location of the store. The selection of right place affects the transportation and material handling costs. Therefore, the right place will be that place where these costs are the lowest. If a local supplier agrees to supply on the same conditions as an outside supplier, he should be given priority.
FIGURE 2.8 Purchase Parameters

The purchase parameters can be depicted elaborately with the help of fig. 2.8
2.12.6. Centralized and Decentralized Purchasing

Centralize purchasing

When the purchase department is centralized it generally means that the requirements of all the departments of the concern will be procured by this department. It is considered the best arrangement of purchasing. If the company has more than one plant, many factors must be considered before deciding the extent of centralization such as geographical separation of the plant, essential homogeneity of the products manufactured, whether items are bought in a large volume, location of the supplier and other issues. The purchasing function is under a single administrative control when there is a lack of maturity in branch offices. The vital tasks of stores such as classification and codification are done by the central office. Certain emergency purchasing can be done by branch stores under the monitoring of central head office. In some cases all item are divided broadly into two categories

(a) Vital items which are handled by the central purchasing section, and
(b) Desirable items which are directly handled by the branch/local purchase section.

Central purchase sections then ascertain the details of the periodical, usual annual requirement of the concern through the stores department, to be handled by it during the period in question.

Decentralized purchasing

The manufacturing concern which operates several plants in widely separate locations and manufactures different products, each with individual material requirements, need decentralized purchasing. In it, each plant has its own purchasing agents who are part of the local plant organization and who serve its particular needs. The purchasing agents of the respective plants are supervised by a general purchasing agent who formulates and enforces the general purchasing policies. He ensures that the mechanics of purchasing are enforced at each plant
and there is proper interchange of ideas and information. The purchasing agent has to discharge certain responsibilities which are as follows:

- To maintain the company’s standard of quality production by his advice on material to be specified.
- To organize and direct the purchasing department and act as a head of its personal.
- To be responsible for the expenditure of the company’s money.
- To represent the company in its contracts with other firms.

2.12.7. Organizing For Purchase

The present integrated approach to material opts for purchasing as a second level function. Figure 2.9 illustrates a typical structure for the overall and internal organization of a purchasing department in a typical firm.
FIGURE 2.9 A typical organization chart of a purchase department.
Approach to purchase organization structure

The nature of purchasing activity permits effective use of the functional concept. Purchasing work is divided into five distinct classifications. Each of which covers a fairly wide range of activities. In most cases, the classification can be further divided into more specialized tasks, each of which still involves working with different problems, different products, and different vendors. This desirable situation permits the achievement of a high degree of specialization, without creating motivational problems for most purchasing personnel. At a practical level, job rotation enables versatility and allows reasonable flexibility in changing the workforce to meet the operational demands.

The five classification of work found in a purchasing operation are:

1. **Administrative:** Purchasing administration involves all the tasks associated with the management process, with emphasis on the development of policies, procedures, controls, and the mechanics for coordinating purchasing operations with other departments.

2. **Buying:** This includes a wide variety of activities such as reviewing requisitions, analyzing specifications, doing informal value analysis, developing and locating vendors, interviewing sales people, studying cost and prices, and negotiating.

3. **Expediting:** This order follow-up activity involves various types of vendor liaison work such as reviewing the status of orders, writing letters, telephoning and e-mailing suppliers and occasionally visiting the supplier’s plants.

4. **Special staff work:** A well-developed purchasing operation has an unending number of special projects or studies requiring specialized knowledge and continuous effort. These projects involve formal value analysis, economic and market studies, special cost studies and special vendor investigations.
5. Clerical: Every department must write orders, maintain working files, catalogue and library materials, records for commodities, vendors, prices, and so on.

Role descriptions

1. Manager of purchasing: The chief purchasing executive assumes various titles in different companies such as manager of purchasing, director of purchasing, or occasionally, purchasing agent. In a small department, he oversees major buying activities as well as the required administrative duties. As the department grows, more of the manager’s time is devoted to administration. With the growth of the firm, it becomes totally administrative.

2. Buyers: Buyers and their assistants perform the actual buying activity. Each buyer and each assistant handles a specific group of materials.

   For buying purposes, materials can be grouped in two ways (1) Materials whose purchase requires similar buying skills and technical knowledge can be grouped together. Or (2) material that are used in the same finished product can be grouped together. The former practice is the more common. Grouping materials that have similar buying and technical characteristics permits a buyer to become a technical specialist.

3. Buying supervisors: The size of the buying staff and the completely of the purchases handled determine the need for buying supervision. In some departments eight or ten buyers can report directly to the purchasing manager. In other cases, each commodity buying group is headed by a senior buyer who reports to the chief purchasing executive. In this case, buyers are organized into larger groups on the basis of the characteristics f the commodity.

4. Expediters: The most common form of organization for the expediting activity is shown in Fig.2.9. Formation of a separate expediting department permits a high degree of specialization. In addition, it facilitates an even distribution for the work load and efficient utilization of expediting personnel. Some firms require each
buyer to do his or her own expediting. Because of the buyer’s status and intimate knowledge of the order, these firms believe that a buyer can obtain more effective results from suppliers than someone of lesser status in the organization. Moreover companies using this approach want the buyer to assume total responsibility for each of his or her orders. They feel the buyer can do this best by personally participating in all phases of the purchase. Additionally, if a buyer is responsible for all phases of an order and for all vendor contacts, it is easier to measure and control his performance. To achieve the benefits of specialization, they assign expediting work to a separate expediter. So the buyer can retain full control of his orders, through each expediter is assigned directly to one buyer. Thus, the expediter does his work as directed by the buyer and the buyer is held fully accountable for his orders. In practice, the expediter usually handles all routine follow-up inquiries and calls on the buyer for assistance with the difficult or delicate expediting problems. This form of organization clearly may also be less flexible and more costly, especially in small companies.

2.13. TRAFFIC OR CARRYING AND FORWARDING

The function of the traffic is to clear goods coming by rail, sea, air, etc, as well as to dispatch finished goods often termed inbound and outbound logistics. The documents relating to incoming goods are sent to them by the purchase section or direct by the suppliers. On receipt of the documents, the traffic section will contact the railway authorities, shipping agents, or airlines office, pay any charges due and take delivery of the goods. Certain formalities are to be observed in clearing goods that are imported. Claims for missing or damaged goods are referred to the insurance company or carriers.
REFERENCES


31. Mukherjee, S.K., "materials., “management in food corporation of India” (Lok Udyog, January), 1972


34. ‘Stores and Inventory Control in United States of America, Japan and West Germany’, National Productivity Council, New Delhi, 1961.

