**CHAPTER III**

**PURCHASING**

**INTRODUCTION**

Purchasing is a managerial activity that goes beyond the simple act of buying, and it includes the planning and policy activities covering a wide range of related and complementary activities. Included in such activities are the research and development required for the proper selection of materials and sources; the follow-up to ensure proper delivery; the inspection of incoming shipments to ensure both quantity and quality compliance with order; the development of proper procedures, methods, and forms to enable the purchasing department to carry out established polices; the co-ordination of the activities of the purchasing department with such other external divisions of the concern such as traffic, receiving, storekeeping, and accounting, so as to facilitate smooth operations; and the development of a technique of effective communication with top management of the company so that a true picture of the performance of the purchasing function is presented.

* 1. **MEANING AND ROLE**

1. **Meaning of Purchasing**

Many authors have defined purchasing in different ways and there is no single definition accepted by everyone. Some of these definitions are:

1. *Purchasing is the process of acquiring goods or services in exchange for funds*. *The term purchasing most often refers to the day-to-day management of material flows and information*.
2. *Purchasing is obtaining from external sources all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company's primary and support activities at the most favorable conditions*
3. *The purchasing function comprises the essential activities associated with the acquisition of materials, services, and equipment used in the operation of an organization.*
4. *Purchasing is the function of buying machinery, tools, general supplies, raw materials etc required by an organization.*

From the above definitions it can concluded that purchasing is the process of obtaining material input, machineries, tools, supplies and services for the smooth running of any organization be it business, non-for- profit, large or small from outside sources. In other words, purchasing is a common function in almost all organizations.

1. **Role of Purchasing In Business**

To see the role of purchasing, the function will be observed from three points of view.

* 1. **As A Function of Business**

Purchasing is one of the basic functions common to all type of business enterprise. These functions are basic because no business can operate without them. All businesses are managed by coordinating and integrating six functions namely:

* **Creation** : the idea or design function usually based on research
* **Finance** : the capital acquisition and financial planning and control function
* **Personn**el : the human resource and labor relation function
* **Purchasin**g : the acquisition of required materials, service and equipment
* **Conversion** : the transformation of material in to economic goods and services
* **Distribution** : the marketing and selling of goods and services produced

By its very nature, purchasing is a basic and integral part of business management. For a business to be successful, all its individual parts must be successful.

* 1. **As Elements Required For Productive Work**

The basic goal of any individual activity is the development and manufacturer of products that can be marketed at a profit. This goal is accomplished by the appropriate blending of what management authorities historically have called the five M’S: Machine, Manpower, Materials Money and Management.

Materials today are the life blood of industry. Materials of the appropriate quality must be available at the right time, in the proper quantity, at the needed location and at an acceptable total cost. Failure to fulfill any of these responsibilities concerning materials management adds to company’s cost and decrease company profit just as surely do out mode production methods, inefficient personnel and ineffective marketing activity.

* 1. **As the Manager for Outside Manufacturing**

The materials that go in to a typical company’s product can originate from either of two sources. The company’s production department is the first source. This department converts raw material in to processed parts; the company’s purchasing department is the second source. This department not only purchase raw material which the production department converts in to processed parts but also purchases finished parts and components. The percentage of industrial components being purchased externally is constantly increasing compared with the percentage being manufactured internally. This is because of the increasing cost of high volume specialty machines.

* 1. **Objectives Of Good Purchasing**

The objectives of purchasing can be viewed from three levels: (1) a very general managerial level, (2) a more specific functional or operational level, and (3) a detailed level at which precise strategic buying plans are formulated.

1. From a top managerial perspective, the general objectives have traditionally been expressed as the five rights which management expects the department to achieve the acquisition of materials:
2. **Right Quality**

Cost and quality are critical dimensions. The interaction between the two is very complex. A right quality is not necessarily best quality. To a large degree manufactures determine the quality of goods by the desired quality of a product to make. The considerations are basic materials, grades, size, design, colors, patterns and durability. The quality of a product is measured in terms of its design, materials, chemical composition, heat treatment, surface treatment, manufacturing processes, mechanical and electrical properties, workmanship, etc.

1. **Right Quantity**

Quantity to be purchased varies with the production strategy and planning. Right quantity is the level of quantity which is not too much or too few. This can be made possible through the techniques of E.O.Q (Economic Order Quantity), which saves the producer from the danger of stock outs as well as carrying cost of surplus inventory. Other strategically considerations in determining quantities are combination of items to reduce transportation costs, anticipation of market conditions both of raw materials/spares as well as the minimum quantity of finished goods.

1. **Right Source**

Only the right source can give goods of the right quality, in the right quantities, at the right price and at the right time. Right source aspect requires decisions regarding the classification items to be purchased directly from the manufacturers, items to be brought from dealers and items to be purchased in the open market.

1. **Right Price**

The right price is the worth in terms of quality, time and adequacy of supply of an item obtained. It is no doubt easy and safe to go for standard products at a higher price but one has to keep in mind the utility of item in the ultimate worth of product. Right price is the price that must be paid to the supplier to obtain the goods of the right quality at the right time.

**Factors Influencing Price**; factors that have a bearing on determination of the right price of an item are;

* **Quantity requirements**; A higher price is usually charged when the quantity required is small. Bigger quantities, on the other hand, give the buyer a leverage to negotiate for a better price.
* **Job life**; A higher price is normally charged for one time requirement since development, engineering and tool cost are recovered from one batch.
* **Delivery time;** A higher price is generally charged/paid when a buyer has limited time to wait and he has to create an urge in the supplier to supply or when the buyer has no time to locate other sources who can supply at a lower price.
* **Demand and supply condition**; the price charged by the supplier is generally competitive when supply of the commodity is more than its demand.
* **Extent of competition**; Limited competition is associated with higher price, while wider competition enables buying at competitive rates.
* **Standard or non-standard materials**; Standard parts - those produced to commercial standards cost less to buy than those produced to buyer's design.
* **Buyer-seller relationships**; Good buyer-seller relations provide a good ground for negotiation, while strained to relations make the supplier quote higher.
* **Government restrictions**; Prices of certain commodities may be fixed by the Government, thereby putting a restriction on both the buyer and the seller.
  + - * 1. **Right Time**

The ideal time of purchase period would be the minimum time for which the goods remain unconsumed. This could be achieved if the stockiest or manufacturer of raw materials supplies the day-to-day requirements in regular installments. This would save the storage. But the geographical and market conditions do not permit and it is where the ordering system comes into existence. The timing policies will depend up on fluctuating prices as well as problems arising out of monopolistic trade and sellers’ maturity.

1. From an operating or functional perspective there are eight basic objectives of purchasing and materials management are identified and discussed briefly below.

* **To support company operations with an uninterrupted flow of materials and services**; in a logistical sense this is a key reason for the existence of the department.
* **To buy competitively:** Buying competitively involves keeping abreast of the forces of supply and demand that regulate prices and availability of materials in the market place.
* **To buy wisely:** Buying wisely involves a continual search for better values that yield the best combination of price, quality, and service, relative to the buyer’s needs.
* **To keep inventory investment and inventory losses at a practical minimum.** The materials management job is to achieve a reasonable balance between the level of inventory required to support operation and the cost of carrying the inventory.
* **To develop reliable and effective sources of supply**. Cooperative suppliers that are willing to work with a buyer to help solve the buying firm are problems and to minimize its materials-related costs are an invaluable resource**.**
* **To develop good relationships with the vendor community and good continuing relationships with suppliers.**
* **To achieve maximum integration with the other departments of the firm.** It is essential for buyers to understand the major needs of their using departments, so that these needs can be translated into materials support actions
* **To administer the purchasing and materials management function in a professional, & cost-effective manner.**

1. **Detailed objectives** that are developed when precise buying plans are made (usually annually) for each of the major categories of materials the firm uses in its operations.

These objectives are spawned from the functional-level objectives just discussed, and are applied to fulfill the specific needs associated with each type of purchase. The precise set of objective for each material typically varies because the usage requirements, the operating conditions, and the markets in which each material is purchased usually are different.

**2.3. Purchasing policies**

The term policy includes “all the directives, both explicit and implied, that designate the aims and ends of an organization and the appropriate means used in their accomplishment. In brief, policy refers to the set of purposes, principles, and rules of action that guide an organization in realizing its objectives”.

Policies are developed to serve as general guidelines in making operating decision that channel action towards achievement of objectives. They are one of the administrative tools of the executing unit and reflection of top management philosophy. They can be used by auditors who check purchasing adherence to corporate policies. The following are major policy examples:

1. **Centralized/Decentralized Purchasing Policy**

**Centralized purchasing policy**

Centralization exists when the entire purchasing function is made the responsibility of a single person. This person is held accountable by top management for the proper performance of purchasing activity. If it functions properly, centralized purchasing has the following benefits:

* uniform policy and procedure at all level and companywide uniform quality standards
* minimize duplication of efforts in purchasing
* volume discounts from bulk purchase of the same and similar materials
* transportation saving by consolidating orders and delivery schedule
* centralization develops purchase specialists whose primary concern is purchasing
* minimizes ordering costs

**Decentralized purchasing policy**

Decentralization of purchasing occurs when personnel from other functional area decide on source of supply or negotiate with suppliers directly for major purchase.

Complete centralized purchasing policy is neither possible nor always desirable. Thus, decentralized purchasing policy is necessary. Under decentralized purchasing majority of purchasing decision are made at the plant or operational level.

1. **Policies affecting external relationship and image**

Good supplier relations contribute to the formation of good public image. The business organization may need to establish policies that promote relationship with suppliers to receive good treatment and service.

1. **Policies on pricing and supply source**

Competitive bidding and the use of negotiation, the size of sourcing firms, local firms, international firms, distributors and manufacturers selection criteria etc

1. **policies on purchase orders and contracts**

Identifies person authorized to sign purchase order and contracts, specifying the dollar amount that a person is authorized to sign.

1. **policies on internal relationship**

Policies should define the scope and responsibility of the purchasing function. These are related to line of authorities, channel or procedure, and department’s relationship.

1. **policies on rush order**

Rush orders are made under emergency situation. These orders should be received only when the user departments have justifiable reason to make the request because the rush orders cost more than if they were handled through the normal purchasing system. Higher price may be paid and thorough investigation may not be made on purchases. Rush orders result from poor planning by user department so that it should be discouraged.

1. **Policies on small orders**

Small orders are permanent problems in most organizations. They are costly to the buyer and the seller alike. The following methods can minimize small order problems:

* 1. **Centralized store system:** when the same supplies are ordered in small quantity repeatedly, the solution is to order these items in large quantity and place them in a centralized inventory for with drawl as needed. However carrying cost and inventory investment cost should be considered.
  2. **Blanket order system:** a blanket order system helps solve the problem for the thousands of items a firm can’t carry inventory or can carry it. Base on the analysis of the past purchase a buyer determines which materials should be handled in a blanket order. After bidding or negotiation, a buyer selects a supplier for each items or family of items and issue a blanket order to each supplier the order include the description of each item, a unit price for each item, when possible and other customary contract provision.

**Benefits of blanket order**

* + 1. Minimize the number of purchase orders and reduce clerical work in purchasing, accounting and receiving
    2. Release buyers form routine works
    3. Permit volume pricing by consolidating and grouping requirements
    4. Improves the flow of feedback information because of the grouping of materials and suppliers
    5. Because some suppliers will stock materials for prompt delivery, this system can reduce the buyer’s lead time and inventory level
    6. Develop long term and improved buyer seller relationship.

# What Makes for an Effective Policy?

Several characteristics of a policy render it effective.

1. Effective policies are action-oriented guidelines that provide guidance. They provide enough detail to direct behavior toward a specific goal or objective but are not so detailed that they discourage personnel from following the policy.
2. An effective policy is relevant (avoiding trivial or unimportant issues) and concise (stating a position with a minimum number of words).
3. An effective policy is unambiguous, allowing personnel little doubt as to how to interpret the policy’s intent and direction.
4. Another characteristic of effective policies is that they are timely and current, which assumes that they are periodically reviewed for clarity and conformance. A policy is ineffective or counterproductive if it is confusing, ignored, or outdated.
   1. **General Purchasing Producers**

A purchasing department buys many different types of materials and service and the procedures used in completing a total transaction normally vary among the different types of purchasing. However, the general procedures followed in a sound purchasing system are:

1. ***Recognition of needs***: - any purchase originates with the recognition of a need by someone /department/ in the organization.

* The recognitions of needs refers to the means by which the needed materials are formally accepted by requesting individual/ department
* The person who is responsible for a particular activity of need recognitions should know what, how much when materials are needed for the unit.
* The purchasing department is responsible for helping to anticipate the needs of using department.

1. ***Description of needs***

* No purchase can be expected to buy without knowing exactly what the using department wants. For this reason, it is essential to have an accurate description of requested goods and service.
* Inaccurate description may result in some loss of time, serious financial loss consequences and loss of suppliers respect and truest
* Any question regarding the accuracy of the requisition should be referred back to the requisitioner
* The basic document on which needing department can describe their need is purchase requisition. Purchase requisition is an internal document which is prepared by needing department and sent to purchasing department.

1. ***Flow of purchase requisition/ need transition***

* Purchase requisition should have prepared in two copies; the original to be sent for purchasing department and the duplicate retained by requester.
* Purchase requisition (PR) formats vary widely because each company design its own format to simplify its own particular communication problems
* Under no circumstance should the purchasing department accept requisition from anyone other than those specifically authorized and all requisitions should be checked carefully before any action is taken.
* The requested quantity should be based on the anticipated needs and should be compared to economic purchasing quantity. The delivery date should allow sufficient time to secure quotation and sample, if necessary, and to execute the purchaser order and obtain delivery.
* The information that should be include in purchase requisition are date, Identification number, originating department, account to be charged, complete description of materials and quantity, date at which materials needed, any special shipping instruction, signature of authorized requisitioner.

1. ***Determination and analysis of possible source of supply***

* Supplier selection constitutes an important part of the purchasing function, and involves the location of qualified vendors and assessing the probability that a purchase agreement would result in one time delivery of satisfactory product and needed service before and after the sales
* Selecting the source is the process of narrowing down a large list of potential supplier to a relatively a few and the final choice is made from this short list
* The purchase of a new or high value item may require a length investigation of potential suppliers. After selecting a preliminary group of potential source, the buyer may employee the technique of competitive bidding or negotiation.
* Bidding is one of the basic methods by which price can be determined. It is more often used by government organizations. Under competitive bidding, industrial buyers, but not always, give the order to the lowest bidder. By law, government buyers are routinely required to give the order to the lowest bidder.
* The proper use of competitive bidding, as the best method, is subject to the following five basic criteria:

1. The money value of specific purchase is large enough to justify the expense
2. The market consists of an adequate number of sellers
3. The market consists of sellers that are technically qualified and actively want the contract
4. The time available is sufficient for using this method of pricing i.e the time required for preparing mailing, opening, and evaluating bids and obtaining the best price
5. The specification of the materials or services to be purchased is explicitly clear to both buyer and seller so that the seller knows the cost of producing the items or rendering the service

**Selecting Suppliers**

The objective of purchasing is to get all the right things together: quality, quantity, delivery, and price. Once the decision is made about what to buy, the selection of the right supplier is the next most important purchasing decision. A good supplier is one that has the technology to make the product to the required quality, has the capacity to make the quantities needed, and can run the business well enough to make a profit and still sell a product competitively.

One major responsibility of the purchasing department is to continue to research all available sources of supply. Some aids for identifying sources of supply follow: *Salespersons of the supplier company, Internet, Catalogues, Trade magazines, Trade directories, Information obtained by the salespeople of the buyer firm and others*

**Sourcing**

There are three types of sourcing: sole, multiple, and single.

* 1. Sole sourcing implies that only one supplier is available because of patents, technical specifications, raw material, location, and so forth.
  2. Multiple sourcing is the use of more than one supplier for an item. The potential advantages of multiple sourcing are that competition will result in lower price and better service and that there will be a continuity of supply. In practice there is a tendency toward an adversarial relationship between supplier and customer.
  3. Single sourcing is a planned decision by the organization to select one supplier for an item when several sources are available. It is intended to produce a long-term partnership.

**Factors in Selecting Suppliers**

The previous section discussed the importance of function, quantity, service, and price specifications. These are what the supplier is expected to provide and are the basis for selection and evaluation. Considering this, there are several factors in selecting a supplier.

**Technical ability:** Does the supplier have the technical ability to make or supply the product wanted? Does the supplier have a program of product development and improvement? Can the supplier assist in improving the products? These questions are important since, often, the buyer will depend upon the supplier to provide product improvements that will enhance or reduce the cost of the buyer’s products.

**Manufacturing capability:** Manufacturing must be able to meet the specifications for the product consistently while producing as few defects as possible. This means that the supplier’s manufacturing facilities must be able to supply the quality and quantity of the products wanted.

**Reliability:** In selecting a supplier, it is desirable to pick one that is reputable, stable, and financially strong. If the relationship is to continue, there must be an atmosphere of mutual trust and assurance that the supplier is financially strong enough to stay in business.

**After-sales service:** If the product is of a technical nature or likely to need replacement parts or technical support, the supplier must have a good after-sales service. This should include a good service organization and inventory of service parts.

**Supplier location:** Sometimes it is desirable that the supplier be located near the buyer, or at least maintains an inventory locally. A close location helps shorten delivery times and means emergency shortages can be delivered quickly.

**JIT capabilities:** Buyers in a JIT environment need suppliers who value their new relationship, working in partnership to remove waste from the system. As a result, JIT suppliers need to have in place information and delivery systems that allow them to quickly ship exactly what the customer needs without increased cost or effort.

**Price:** The supplier should be able to provide competitive prices. This does not necessarily mean the lowest price. It is one that considers the ability of the supplier to provide the necessary goods in the quantity and quality wanted, at the time wanted, as well as any other services needed.

**Global Sourcing**

Global sourcing is defined as a centralized procurement strategy for a multinational company, wherein a central buying organization seeks economies of scale through corporate-wide standardization and benchmarking. A definition focused on this aspect of globalsourcing is: "proactively integrating and coordinating common items and materials, processes,designs, technologies, and suppliers across worldwide purchasing, engineering, and operatinglocations”

Global sourcing is an approach that requires supply management to view the entire world as a potential source for components, services, and finished goods. It can be used to access new markets or to gain access to the same suppliers that are helping global companies become more competitive.

Although true global sourcing is somewhat limited in most industries, more and more companies are beginning to view the world as both a market and a source of supply. The major objective of global sourcing is to provide immediate and dramatic improvements in cost and quality as determined through the commodity research process. Global sourcing is also an opportunity to gain exposure to product and process technology, increase the number of available sources, satisfy countertrade requirements, and establish a presence in foreign markets.

There are several major barriers to global sourcing that must be overcome. Some serious issues are that some firms are inexperienced with global business processes and practices, and there are few personnel qualified to develop and negotiate with global suppliers or manage long material pipelines.

Finally, organizations may not be prepared to deal with the different negotiating styles practiced by different cultures, and they may have to work through a foreign host national in order to establish contacts and an agreement. According to the study of John Stevens, several main driving reasons for global sourcing are concluded as follows:

Materials are not available domestically

Due to reasons of geography and technology, some domestic manufacturers may be unavailable to supply specific materials. Moreover, probably they are incapable of meeting the required delivery time or supplying some materials due to their limited technical capabilities.

Unsatisfactory quality of domestic products

The quality of products obtained from the domestic market may not meet the requirements of buyers. The quality of domestic goods may not be sufficient for the manufacturers to sell their products to international markets where higher standards may apply.

Price

Especially in developed countries, the materials or products supplied by domestic suppliers may be too expensive, and they can obtain the same goods with a cheaper price elsewhere around the world.

Technology

Especially in developing countries, some enterprises may have no choice but to source internationally; otherwise they cannot get access to world-class levels of technology.

1. **Preparation and placement of purchase order**

* The placing of an order usually involves preparation of a purchase order form and it is done after selection of the right supplier.
* Purchase order becomes a legal binding contract once accepted by the seller, it become a legal contract for the delivery of the goods according to the terms and conditions specified in a purchase agreement
* The order should include all data required to insure a satisfactory contract and it should be worded in a manner which minimize the miss interpretation by either party
* Quantity requirement, price, delivery requirement and quality specifications must be described accurately in the purchase order
* It is prepared from the purchase requisition or quotation and from any other additional information needed

1. **Follow up and expediting**

* After purchase order has been prepared and issued to a winner supplier, the responsibility of purchasing does not terminate with making a satisfactory contract.
* Purchasing bears full responsibility for an order until the material is received, inspected and accepted.
* ***Follow up***: - is the routine tracking of an order to assure that the vendor will be able to meet delivery promises. Or it is process of remind the sellers about date of delivery in order to get materials at normal garment time.
* ***Expediting***: - is the application of pressure on vendors to get materials on the original delivery promise or delivery ahead of the schedule. It may involve the threat of order cancellation or withdrawal of future business, if the supplier cannot meet the agreement
* At the time order is placed, an appropriate follow up date is often specified simultaneously with the help of the follow up cope up the purchase order. In some firms, purchasing has full time follow up and expediting personnel is assigned.
* Follow up and expediting can be implemented through;
* Writing letter / Fax
* Calling the phone
* Email
* Physical supervision

1. **Receipt and inspection of goods**

The next step in the traditional purchasing cycle is receipt and inspection of the order. When a supplier ships material, it includes in the shipping container a packing ship, which itemizes and describes the contents of the shipment. The receiving clerk uses this packing slip in conjunction with his or her copy of the purchase order to verify that the correct material has been received. After a shipment has been inspected for quality and for general condition of the material, the receiving clerk issues a receiving report. In some cases, the report is prepared on separate receiving department forms. However, the trend in most companies today is to reduce the clerical work by using an online computer based system, coupled with bar code order identification or by preparing a receiving report form during the same typing or printing operation that prepares the purchase order.

# The invoice audit and completion of the order

Occasionally, a supplier’s billing department makes an error in preparing an invoice or its shipping department makes an incorrect or incomplete shipment. To ensure that the purchased makes proper payment for the materials actually received, sound accounting practice dictates that some types of review procedure precede payment to the supplier.

# Maintaining Purchasing related Records

In the purchasing process, large number of files and documents are produced to facilitate the purchasing activity. This documents and files contain a large volume of data that flows among the participants in the purchasing process. Despite its huge volume, much of this information can be useless in daily operations unless it is organized in a manner which makes it readily accessible. Although the unique needs of each purchasing department dictate the specific structure of its records system, the following basic records are essential for the effective operation of most purchasing departments:

* A record of open and closed orders
* Purchase log
* Commodity record
* Supplier record
* Contract record
* Special tool record
  1. **Make or Buy decision**

How a make or buy decision originates? This decision may originate in any one of the following events.

* + - 1. When we are planning to produce a new product or modifying the existing product.
      2. When the current performance of supplier is unsatisfactory.
      3. Changing demand in the external environment. (Increase or decrease of demand.)

Now before buying or making the parts the costs should be evaluated. The relevant costs of buying are; purchase cost of the parts, transportation costs and receiving and inspection costs. The cost of making includes; In general,

* Delivered raw material costs
* Direct labor costs
* Incremental managerial costs
* Inventory Carrying costs
* Costs of Capital and
* Opportunity Costs.

In order to make a sound managerial decision, we should have to consider the factors specifically favoring the making or buying decisions.

* **Factors that specifically favor the making decisions**

When the cost to make is substantially lower or less than the cost to buy.

When the demand for the product is stable & at a higher value, so that the investment in equipment can be returned.

When the companies manufacturing experience & equipment are well suited to the manufacturing of the product.

When the suppliers are unable to meet specifications interms of quality & performance.

When the company has idle capacity like, idle space, skilled human resource, equipment to be utilized in manufacturing the product.

When transportation costs can be saved by gathering local materials to make the products rather than having made at a distant plant.

When research break through occurs & the company wants to maintain trade secrets concerning the product, materials in it & the process involved.

* **Considerations that favor buying than making.**

1. When the cost to buy is substantially lower or less than the cost to make the item.
2. When the demand for the product is fluctuating, creating production problem.
3. When the quantities of item required is small.
4. When other companies hold trade secret or patents on a required product so that it is not possible to make it.
5. When obsolescence makes machine worthless or substantially reduce their value.
6. When high scrap or spoilage rates are inherent in the manufacture of the product and when the company is assured of getting the same from suppliers.

***Illustration on Buying & Making decision***

ABC metal work company produces parts that are shipped nationwide. It has an opportunity to produce plastic packing cases which are currently purchase at 0.70 Br. each. Annual demand for the product depends largely on economic conditions & this has been estimated at 45,000 units. If the company produces the cases itself, it must re-innovate on existing area & should purchase a molding machine which will result in an annual fixed cost of 12,000 Br. Variable costs for labor, material & factory overhead are estimated at 0.65 Br. /case.

*Required:*

* + 1. Should the company Make or Buy the cases.
    2. At what volume, it is more profitable to produce in house rather than purchase from an outside suppliers.

*Solution:*

a) Expected cost of making = Total variable costs+Fixed Cost

= 0.65(45,000)+12,000

= 41,250.00 Birr

Expected Cost of buying = Unit Price x Annual Demand

= 0.70 x 45,000

=31,500.00 Birr

Since the cost of buying is less than cost of making the company should buy the cases because there is a cost saving of 9,750 Birr.

Note that the fixed cost is avoidable i.e. when we buy the item from the external supplier there will be no fixed cost of 12,000 Birr.

b) In order to calculate the quantity level that favors making we need to first compute the breakeven point.

The breakeven point is the point where total revenue equals total cost.

I.e. TR = TC

P x Q = VC (Q) + FC

P x Q – VC (Q) = FC

Q = FC

P – VC

Q = 12,000 = 240,000 units

0.70-.065

At this level of quantity cost of making is equivalent to cost of buying

0.65(240,000) + 12,000 = 0.70(240,000)

168,000 = 168,000

Therefore, it is more profitable to produce the items in house rather than purchase at any volume of greater than 240,000 units. Here you can check the answer by taking a quantity level that exceeds 240,000 units. For example the cost of making 245,000 units is 171500 but the cost of making these units is 171250 Birr.

* 1. **Value Analysis**

This is an attempt to see any material or any component can be substituted or eliminated so as to achieve the proper function at a lower cost. Value analysis is concerned with scrutiny of the design function and cost of any product, material or service with the object of reducing cost by modification of design material specification, more efficient process, change in source of supply or possibly the elimination of an item or its incorporation in to a related item without sacrificing reliability and quality.

The two basic conceptual tools in the operation of value analysis are:

1. *Design analysis of the required material* design analysis in tails a methodical step by step study of all phases of the design of a given item in relation to the function it performs. Decomposing on item to its parts so as to see and examine each part in relation to their function avoids or eliminates redundant or idle ones.

This can be examined by:

* Can any part be eliminated without impairing the operation of the other unit?
* Can the design of the part be simplified to reduce its basic cost?
* Can design of the parts be changed to permit the use of simplified and less costly production method? Can less expensive, but equally satisfactory materials be used in the part?

1. *Cost analysis of the required material* cost analysis involves the investigation of the supplier’s probable cost of producing a given materials.

To get actual selling price of a suppler.

* Construct estimated elemental cost for labor, material, manufacturing overhead and general overhead.
* Total these cost, to arrive at approximate actual costs of producing for an efficient producer.
* Make-up reasonable profit and arrive at selling price.

Possible procedure in value analysis

1. Select the material that is right for value analysis.
2. Gather information about the material which includes, drawings, costs, scrap rate etc.
3. Define the prime functions; prime function of a material can be defined using two words; verb and noun.
4. Estimate the present cost of each function.
5. Generate alternatives, using brain storming-insist people to give new ideas.
6. Evaluate alternatives in terms of cost, feasibility, undesirable consequence, etc…
7. Present proposals.
8. IF approval is secured implement the plan; translate the approved proposal to engineering change order.

In sum, the purpose of value analysis is to bring together the combined talents of purchasers and its vendors as well as engineers and other operating personnel to review the components of materials used in the making of the product with the view to improve its function and lower its cost.