

**TOWARDS  
AN  
INTEGRATED THEORY OF PURCHASING**

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**DISSERTATION**

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## CHAPTER - I

### INTRODUCTION

#### 1.1. Purchasing : A Crucial Function of the Organization :

Purchasing is an essential function to carry out the activities of any organization. Especially, in the industrial context where the environmental conditions and the internal problem of an organization are subject to a high degree of uncertainty, purchasing becomes one of the major cost saving activities. Even though purchasing in anticipation of future consumption very often leads to idle resources for a certain period of time, it is important to note that, on the other hand, bottlenecks may be created in business activities, if adequate purchases are not made at the right time.

Again, in the context of price fluctuation coupled with trend and cycle, the cost of production may be high if adequate purchases are not made at right prices. The cost of production may be high also if right quality of materials are not purchased. As such, identification of vendors and development of these vendors become one of the major peripheral activities not only for the purchasing department; but also for the organization as a whole, where policy implications may be involved.

In addition, since purchasing involved use of working capital, the amount spent towards purchasing must have conformity with financial and production goals of the organization. Thus purchasing function is an integral part of the overall operations of the organization. This function may have its own tactical objectives for carrying out day to day activities



but it must have goals which are common with the goals of other functions and these must be understood by everybody in the organization.

In order to be more explicit about the statements we have made above it is probably advisable to review the essential characteristics of an organization. According to Ackoff [2] an organization is a purposeful system with four essential characteristics. These are<sup>as</sup> follows :

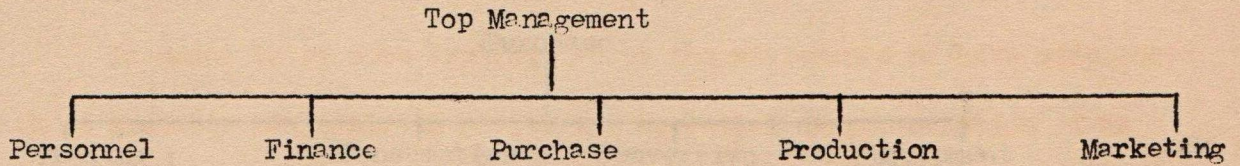
- a) The major components of an Organization are human beings who deal§ with materials, money, and machine.
- b) Responsibility for choices from the set of activities is divided among two or more individuals and/or groups of individuals.
- c) The functionally distinct subgroups are aware of each other's choices through communication or observation.
- d) A subgroup (or total group) of individuals in the system has a control function; it compares achieved outcomes with desired outcomes and makes adjustment in the system intended to reduce the observed difference.

The control function is normally exercised by an executive body which operates on a feedback principle.

For the sake of convenience in operation following the traditional classifications, the classes of activities and (hence) the subgroups may be



divided into functional department like personnel, finance, purchase, production and marketing.

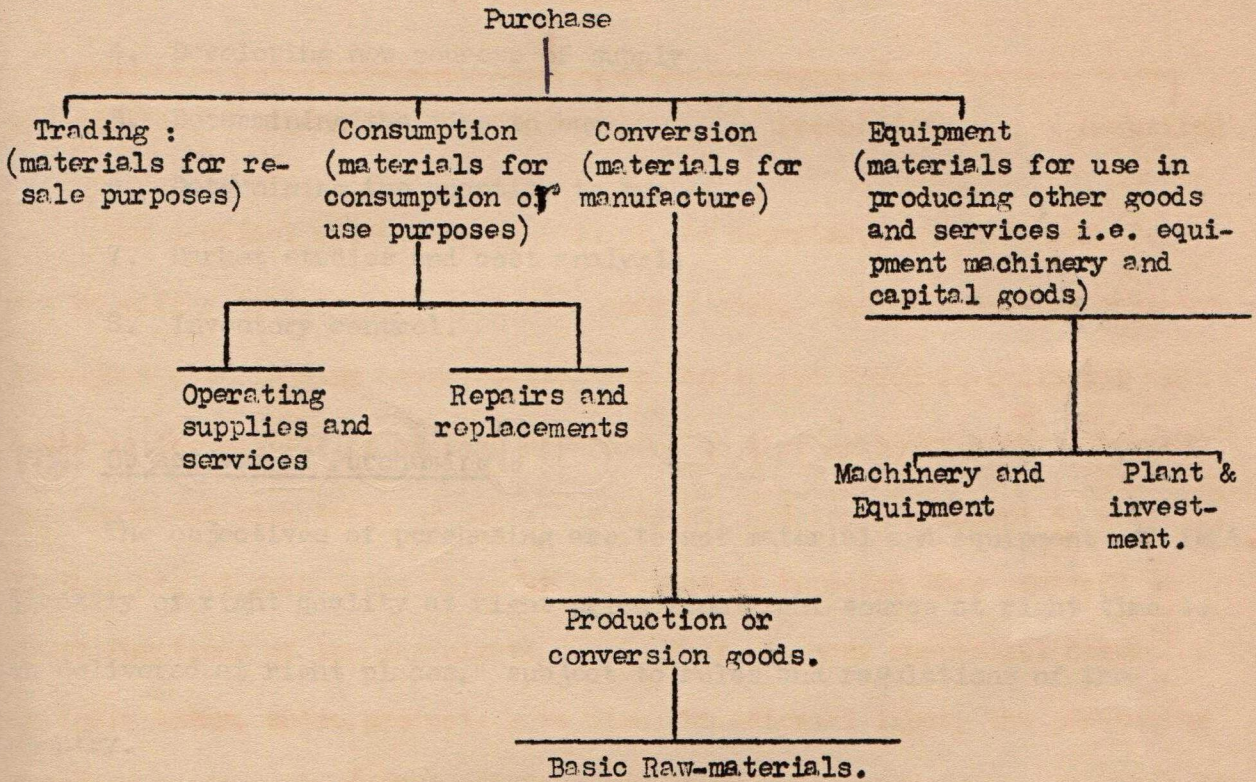


The tactical objectives of each of the departments, taken separately may be different but there must be a common goal. And this must be achieved through a coordinating agency called Top Management which Co-ordinates and controls the activities of each department so that goals of each department are congruent with goals of other departments and top management as a whole. In this regard purchasing is no less an important function when compared to other functions of the organization. In fact, in many successful companies in India today; whose products have high raw material input, the purchasing function is directly looked after by top management.



1.2. The Purchasing Activities of an Organization :

The purchasing activities can be broadly classified as follows: [28]



Purchase department has two functions, ————service function and management auxiliary function. The service function includes procuring the goods and services that are needed by various department of the organization without injecting personal ideas or choices. As a management auxiliary function, the purchasing department looks after the material phase of the organization, just as personnel department looks after man. The duties of a purchasing department in an organization are many. It is best described in [35]. Some of the important duties of a purchasing department are :



1. Issuing Purchase Order
2. Negotiating and Selecting vendors
3. Analysing bids and prices.
4. Developing new sources of supply
5. Determining the time to buy
6. Determining the quantity to buy
7. Market studies and cost analysis
8. Inventory control.

1.3. Objectives of Purchasing :

The objectives of purchasing are to get material and equipment of "right quantity of right quality at right price from right source at right time to be delivered at right places," subject to rules and regulations of the country.

To be more specific the purchasing function in order to contribute to the reduction of cost of production should be so performed as to minimize disruptions in production resulting from lack of materials, equipment or supplies with minimum investment in ~~reserve~~ inventories. Purchasing department must also maintain standards of quality for the items purchased, minimize waste, duplications and obsolescence with respect to various items purchased. A final objective of sound purchasing is <sup>as</sup> the development of internal relationships that lead to harmony among various functional areas of the organization.



#### 1.4. Constraints and Difficulties of Purchasing :

Purchasing is a very complex decision process. Purchasing function in an organization comprises all the duties necessary to procure materials, services for the organization, performs its assigned tasks in concert with the efforts of the other functional department doing their part in the overall organized efforts. This function has to be performed under various constraints and difficulties.

The availability of working capital is the most important constraint which must be considered before developing any purchasing policy for the organization. The various component of working capital are inventories of raw material, semifinished product, finished product and spare parts; Cash, debtors and creditors. Top management has a role to play here. It must make careful assessment of the availability of working capital and determines its share to be allocated to purchasing.

The selection of the source of supply is another difficulty faced by purchase manager. The process by no means is a simple one. Its complexity depends upon the nature of the purchase. Among the many suppliers of the product, the purchaser must choose one who can furnish him with optimum combination of quality, quantity, price and supply. Once a good source is found, the succeeding orders can be placed economically and with confidence. The selection of satisfactory source of supply is also important to the intracompany relationships between the purchasing department and using



departments that it serves. If goods supplied are of inferior quality, using department usually want to specify the source of supply, although choice of the source of supply is usually left to the purchasing department. As a result, friction develops and morale of the purchasing department suffers serious harm. Apart from these, other points that need to be considered while selecting the supplier are (a) geographical location of the supplier, (b) provision of discount, gift by supplier, (c) sample inspection procedure.

In India many materials are not available when they are required. Some of the materials have to be imported from outside. These points must be carefully considered and insurance stock should be maintained for such items whose supply position is uncertain. The purchase manager must understand and should be able to forecast the trade cycles so that appropriate action may be taken at the beginning.

Purchasing in economic lot sizes while taking into account the ups and downs of price movements and subject to Government regulations is another difficulty which the purchase manager must consider while developing his policy. To take account of the price movements while developing a purchasing policy, it is necessary to forecast price movements. This is a very difficult task as prices depend on so many factors which are very difficult to foresee in advance. Forecasting prices on the basis of past data often becomes misleading.



The difficulties of purchasing is further accentuated by fact that purchasing department is related to other departments of the organization. For example, purchasing is closely related to production planning and inventory control. None can ~~survive~~ <sup>Support</sup> without from the other. The relative importance of these functions to the organization varies from company to company. In a sense inventory control is a link between production planning and purchasing. It may be closely connected with one or other or it may be remain as a separate function. Similar interdependence exist between purchasing and other department of the organization.

#### 1.5. A Brief Review of Current Purchasing Practices :

The generally followed purchasing practices are (a) Hand to mouth buying (b) Forward buying (c) Hedging (d) Rupee-Averaging [13], [28], [40], [32]. These are **reviewed in** chapter - 2 in full details. However, here we present a brief discussions about these practices in order to show that the difficulties in purchasing as outlined above are not removed by following any of these practices and to establish the need for an integrated system of purchasing.

##### (a) Hand to Mouth buying :

The policy of meeting organization's minimum need is termed as hand to mouth buying. Under this policy there will be no reserve stock for such emergency situations like slow delivery, transportation delay or strikes in supplier's plant. This policy has a



great appeal to the purchasing managers. Under this policy the supplier has to bear all the storage and handling costs and ~~obsolescence risks~~. It is a good policy when price is decreasing or when new production methods or new models are going to be introduced.

(b) Forward buying :

This policy includes all purchasing in excess of minimum stock to keep the plant running on the basis of normal output and average delivery times. This does not include purchases for speculative purpose. Some of the common objectives of forward buying are :

1. To provide a margin of insurance against interrupted operations.
2. To purchase in large enough quantities to earn quantity discounts.
3. To purchase in economical transportation units.
4. To protect the company against the risks of shortages of materials.
5. To secure materials of desired qualities when they are available.

There are three types of forward buying. These are (i) Purchases that are made to supply only a definite production schedule, usually based on sales forecast and sound inventory policy.



(ii) Purchases that are made in anticipation of future unscheduled production.

(iii) Speculation on commodity markets.

(c) Hedging :

In simplest term hedging means entering simultaneously into two transactions of a like amount in two markets whose price move up and down together by approximately the same amounts. The two transaction are a purchase and a sale. If one can find any two commodity price-series move together, he can accomplish the objective of hedging. In practice, it is virtually impossible to find two different commodity price series that move together so closely that they can be used for price protection. For this reason traders in several commodity fields have organized future markets to serve the purpose. There are two kinds of hedging relevant to purchasing agents.

(1) A hedge against a long spot position :

In such a case the company needing price protection has actual materials in hand and will suffer a loss if the price declines before the materials are used and finished product sold. Such an inventory - or "long position" - can be protected pricewise by selling an equal quantity of the commodity in the future market. Then as the materials are processed and



finished products sold, future contracts are bought in equivalent quantities.

(2) A hedge against a short spot position :

Here the hedging company sells finished goods at a fixed price for delivery at some future date without having the required raw materials on hand. In order to protect itself against the possibility of the price of raw materials advancing before it can be bought, the company purchases future contract to the extent of its raw materials needs. Then when suitable raw materials is found, the company sells its future contracts.

(d) Rupee - Averaging :

One form of purchasing policy in which the amount purchased is a function of price is called "Rupee averaging" [ 32 ]. This policy suggest that at each purchasing opportunity a fixed amount should be spent regardless of the price. The purpose of this policy is to free the purchaser from having to make a forecast of future price movements and to average down the mean price of the stock held, as more and more purchases are made. It accomplishes the later result by leading to the purchase of relatively few units when the price is high and relatively many units when the price is low.

1.6. Relative Merits of Different Purchasing Practices :

Different purchasing policies are suitable in different situations.

When materials can be obtained readily hand to mouth buying policy is a good



one. Hand to mouth policy is also suitable when price of the commodity to be purchased is declining or when company is introducing new production methods. When price is decreasing it is profitable to purchase later and so one should not purchase more than the minimum requirement.

In normal situation, of course, there is a lead time in getting the material and forward buying is usually practiced.

Hedging can be practiced only for selected raw materials. It protects the buyer from the risks of price fluctuation.

Rupee averaging reduces the expected unit cost of purchasing. Under this policy the purchaser need not make any price forecast but spends a fixed amount towards purchasing in every period. This policy will automatically lead to buying more when price is less and less when price is more.

#### 1.7. A Conceptual Framework for an Integrated Theory of Purchasing :

As we can see none of the above methods is suitable in a situation where objectives of purchasing department are related to those of other functional departments of the organization. All the functional departments are interrelated with each other. As Forrester point<sup>s</sup> out "the behaviour of the system results from the interactions of its components parts. The interactions are often more important than the pieces taken separately". Hence, there is a need for integrated purchasing system.



The elements of an integrated purchasing system should minimally consists of the following.

- (a) Allocation of working capital for purchasing purposes.
- (b) Identification of purchasing objectives and goals.
- (c) Identification of all constraints environmental or otherwise.

These may be supply limitations, trade cycles and Government regulations.

- (d) A forecasting subsystem in order to predict the future price behaviour.

- (e) A good communication system in order to remove any behavioural problem between people belonging to various departments.

These areas are again highlighted in chapter - 6 where we discuss the implementation problem of our models.

### 1.3. Scope of this Dissertation :

In this dissertation we have critically reviewed the existing models of purchasing and tried to develop realistic <sup>Purchasing Policy</sup> specially suitable to Indian conditions. In particular, we have developed models which consider price trend and fluctuation. Also we have developed an integrated model which simultaneously determines the purchase, production and workforce requirements in the form of decision rules. One of these models has been



applied to Jute and Cotton purchasing situation (Chapter - 5). In the end we have provided a conceptual framework for an integrated purchasing system. One normally would like to validate this conceptual framework. However, because of limitation on availability of data and the complexities involved, the validation of the conceptual framework is beyond the scope of this dissertation.