

Once that a preferred bidder is selected on a technical and management basis, the customer and bidding firm will proceed toward negotiating a contract. Negotiation may not only become an extensive undertaking relative to the contract type established, but may also involve some haggling in the areas of scope and work and the proposed price/cost figures.

## 5.8. PRODUCT CLASSIFICATION

Products may be classified as :

(1) **Convenience goods** such as cigarettes, candy bars, blades, magazines etc. All these items are found clustered around the checkout stand of food stores, and food, of course, is usually a convenience good. Convenience goods are placed so that they can remind consumers that they are available when needed.

(2) **Shopping goods** are more expensive items that people buy less frequently. A key factor in the purchasing of shopping goods is the customer's desire to make comparisons among an assortment of similar items, and as a result, retailers who handle shopping goods tend to cluster.

– Examples of shopping goods are ready-made garments, clothes (for shirts, pants, or suiting), automobile scooters and cars etc.

– The role of sales people at the retail level assumes critical proportions in marketing shopping goods. Their blandishments and skills are not needed to sell cigarettes at retail, but they are certainly necessary in the case of clothing and automobiles.

(3) **Specialty goods** are those for which buyers will take extra ordinary pains to obtain.

– The hobbyist, whose numbers are growing rapidly, is a typical specialty goods shopper. The mountain-climber who absolutely must have a certain down-filled sleeping bag provides another typical example.

(4) **Industrial goods**

– Industrial goods comprise of raw materials, semifinished goods which must be converted into more finished products, machinery, equipment, supplies, containers and packaging materials, etc.

– People involved in the sale and purchase of industrial goods behave remarkably unlike other consumers in some significant ways. Industrial goods purchases are intended to become part of the manufacture of a product which is later sold to consumers. To explain, an automobile manufacturer has no personal need for steel; he buys steel only because consumers will later buy the automobile it makes from steel. On the other hand convenience or shopping goods are bought for *personal* use, therefore in such goods, a consumer is likely to be subjective in his purchases.

## 5.9. PRODUCT DEVELOPMENT

### 5.9.1. Introduction

– A Product is an article obtained by the transformation of raw material and is marketed/sold by the manufacturer, *i.e.*, a product is a salable item.

– It may be a *consumer product* such as cigarettes, televisions or an *Industrial product*, *e.g.*, a lathe, an overhead bridge crane, etc.

– Development is carried out after *applied research* which follows *pure research*.

– Development concerns the most economically feasible method for applying the principles identified through Research.

– Development involves design/redesign and fabrication of new or modified product and then testing it to find its usefulness.

– Product Research and Development are concerned with all aspects of the product design and applications including its,

(i) Functional efficiency,

(ii) Quality,

(iii) Unexplored uses,

(iv) Investigation of materials and possible substitutes,

(v) Utilization of waste products, and

(vi) Standardization and customer satisfaction.

– Product development is *essential* in order to,

(i) Meet changing consumer needs.

(ii) Manufacture improved and low cost products.

(iii) Maintain (one's) sales position and profit margin.

– Products can be developed by :

(i) *Imitation*, *i.e.*, marketing another product similar to one in the market, *e.g.*, when one concern introduced a refrigerator with automatic defrosting unit, others imitated and marketed their own refrigerators having such a unit.

(ii) *Adaptation*, *i.e.*, developing an improved product for an already existing in the market, *e.g.*, the introduction of electronic and atomic clocks (against mechanically spring wound clocks).

(iii) *Invention*, *e.g.*, synthetic fibres, nylon, etc., for making garments and other items of use.

– Product development may involve a

(i) Small refinement, or

(ii) A major redesign.

Frequently a completely new design results, *e.g.*, the development of more reliable rotary, fuel injection pumps for diesel engines in place of old reciprocating types of pumps.

– Product development generally involves considerable expenditure; but a concern has to meet it if it has to survive when competition is hard.

### 5.9.2. Product Development Procedure

The various steps involved in developing a product are discussed below ;

(a) Get new ideas,

(b) Separate the good and feasible ideas,

(c) Evaluate ideas technically,

(d) Evaluate ideas from market's point of view,

(e) Take the final decision,

(f) Get into production, and

(g) Introduce product into the market.

(a) New ideas can be obtained :

(i) By Imitation.

(ii) By Adaptation.

(iii) By Invention (*i.e.*, R and D).

(iv) From dealers and customers

(v) By advertising -- asking people to send their ideas and announcing prizes for the best idea.

(b) Separate the good, meritorious and feasible ideas from amongst the many, received in step

(a) above.

Screening of ideas may be done by a committee consisting of managers of R and D, Production, sales and other departments related with the product development.

- (c) The selected ideas are evaluated technically as regards,
  - The method of manufacture,
  - Labour and equipment requirements,
  - Performance characteristics of the product,
  - Cost of manufacture, etc.
- (d) Selected ideas are evaluated as regards their acceptability by the customers.
  - The first evaluation is simply a cursory survey by salesmen.
- If the idea looks promising a nation wide market survey can be conducted.
- (e) Based on the information collected on technical and market aspects of the new product, it is decided finally as whether to go ahead for production or to forget the idea.
  - (f) If it is decided to take up the idea,
    - The product is designed,
    - Equipments are ordered,
    - Materials are procured.
    - Workers are selected and trained,
    - Control systems etc., are established, and it is decided whether to manufacture the product on mass scale or job-lot basis.
  - (g) While the product is under manufacture, preparations are done to introduce the product into the market and to impress the market with the developed product. The following aspects are explored :
    - (i) Size, location and characteristics of market,
    - (ii) Advertisement policies,
    - (iii) Appealing packaging,
    - (iv) Channels of distribution,
    - (v) Price, discount and guarantees,
    - (vi) Service after sale, etc.

The three principles, namely *standardization, simplification and specialization*, which are basic and integral part of product development are discussed below :

## 5.10. STANDARDIZATION

### 5.10.1 Introduction

- *Standards* are at the base of all mass production. They make possible thousands of different articles to be placed within the reach of everybody.
- When one purchases a new spark plug for a scooter or car, he knows that it will screw into the engine head all right. Why? Because spark plug threads are *standardized*.
- *Standards* convey the sense that there are only certain specific sizes made and sold.
- Standards are carefully established specifications for products, materials, etc.
- *Standardization* means producing maximum variety of products from the minimum variety of (i.e., *standardized*) materials, parts, tools and processes.
- *Standardization* is one way which leads to economical products. Standardization usually means

that non-standard products will not be produced—except when a customer orders them to be made.

- Standardization is the process of establishing standards or units of measure by which extent, quality, quantity, value, performance, etc., may be compared and measured.

### 5.10.2 Standardization Procedure

*Steps involved :*

- (a) With the help of market research, sales statistics, etc. decide what to sell in future.
- (b) Then, define a standard range of products.
- (c) From the range, ask the designer to develop minimum variety of components to match the range. Introduce new materials, components, etc. if necessary.

An approach to standardization necessitates the classification of materials and component parts.

### Classification

- 'Classification' is of great value in material and component standardization.
- Classification aims at, systematically, grouping items, together by their common features and subdividing them by their special features.
- A system of *classification and coding* is necessary for the design of new products within the range defined.

Such a system should readily :

- (i) Identify and locate identical items.
- (ii) Facilitate the use of standard items in new designs.
- (iii) Identify substitutes in case of *stock outs*.
- (iv) Help developing Group Technology.
- (v) Aid to improve parts location in the store.

- *Classification procedure* involves the following steps :

- (i) Define all items.
  - (ii) Classify each item according to its basic characteristics.
  - (iii) Identify each item by allocating to it some meaningful code number.
- A code consists of letters and numbers. The aim is to classify from general to particular.

- Taking an example of *grinding wheels* for classification and coding purposes, various wheel features are denoted by letters and numbers. A code is marked on the grinding wheel.

According to Indian Standard Specifications, for example, a grinding wheel is specified as follows :

G	C	54	G	6	V	BE
Green (Prefix)	Silicon carbide abrasive	Medium grain size	Soft grade	Dense structure	Vitrified bond	Suffix (Trade secret) Depends upon the process and type of manufacture.

### 5.10.3. Advantages of Standardization

All sections of a company benefit to some degree from standardization.

1. *Design department*
  - Fewer specifications, drawings and part lists have to be prepared and issued.

