Edited by: Dr. Jitendra Kumar Sahu and MANABHANJAN SAHU
(Faculty:Professor, HOD Mech, Dept. SMIT Berhampur & Dept.of Humanities, PMEC & Research Scholar: Berhampur University)

Module II (10 hours)
Market Segmentation, Targeting and Positioning: Definition, Bases of segmenting consumer and Industrial markets.
Target Market strategies: Market Positioning.
Market Demand Forecasting: Key Terms,
Forecasting Tools: Short term tools (Moving average and Exponential smoothing methods) Long-term forecasting Tools (Time series analysis, Econometrics methods) Qualitative tools (Buying Intention Survey, Sales Force Opinion and Delphi Techniques)
Product Planning: Product Life Cycle, New Product Development Process, Branding Strategy, Positioning a Brand, Brand Equity, Packaging and Labeling, Product-mix and Product Line, Planned Obsolescence.

Market Segmentation, Targeting and Positioning: Definition, Bases of segmenting consumer and Industrial markets

What is a Market - Definition and Different types of Markets

A set up where two or more parties engage in exchange of goods, services and information is called a market. Ideally a market is a place where two or more parties are involved in buying and selling.

The two parties involved in a transaction are called **seller and buyer**.

The seller sells goods and services to the buyer in exchange of money. There has to be more than one buyer and seller for the market to be competitive.

Monopoly - Monopoly is a condition where there is a single seller and many buyers at the market place. In such a condition, the seller has a monopoly with no competition from others and has complete control over the products and services.

In a monopoly market, the seller decides the price of the product or service and can change it on his own.

Monopsony - A market form where there are many sellers but a single buyer is called monopsony. In such a set up, since there is a single buyer against many sellers; the buyer can exert his control on the sellers. The buyer in such a form has an upper edge over the sellers.

Types of Markets

1. **Physical Markets -** Physical market is a set up where buyers can physically meet the sellers and purchase the desired merchandise from them in exchange of money. Shopping malls, department stores, retail stores are examples of physical markets.
2. **Non Physical Markets/Virtual markets -** In such markets, buyers purchase goods and services through internet. In such a market the buyers and sellers do not meet or interact physically, instead the transaction is done through internet. Examples - Rediff shopping, eBay etc.
3. **Auction Market -** In an auction market the seller sells his goods to one who is the highest bidder.

4. **Market for Intermediate Goods -** Such markets sell raw materials (goods) required for the final production of other goods.
5. **Black Market -** A black market is a setup where illegal goods like drugs and weapons are sold.
6. **Knowledge Market -** Knowledge market is a set up which deals in the exchange of information and knowledge based products.
7. **Financial Market -** Market dealing with the exchange of liquid assets (money) is called a financial market.

Financial markets are of following types:

1. **Stock Market -** A form of market where sellers and buyers exchange shares is called a stock market.
2. **Bond Market -** A market place where buyers and sellers are engaged in the exchange of debt securities, usually in the form of bonds is called a bond market. A bond is a contract signed by both the parties where one party promises to return money with interest at fixed intervals.
3. **Foreign Exchange Market -** In such type of market, parties are involved in trading of currency. In a foreign exchange market (also called currency market), one party exchanges one country's currency with equivalent quantity of another currency.
4. **Predictive Markets -** Predictive market is a set up where exchange of good or service takes place for future. The buyer benefits when the market goes up and is at a loss when the market crashes.

Market Size

The market size is directly proportional to two factors:

- Number of sellers and Buyers
- Total money involved annually

Market Segmentation - Meaning, Basis and Types of Segmentation

What is Segmentation ?

Segmentation refers to a process of bifurcating or dividing a large unit into various small units which have more or less similar or related characteristics.

Market Segmentation

- Market segmentation is a marketing concept which divides the complete market set up into smaller subsets comprising of consumers with a similar taste, demand and preference.
- A market segment is a small unit within a large market comprising of like minded individuals.
- One market segment is totally distinct from the other segment.
- A market segment comprises of individuals who think on the same lines and have similar interests.
- The individuals from the same segment respond in a similar way to the fluctuations in the market.

Basis of Market Segmentation

- **Gender**

The marketers divide the market into smaller segments based on gender. Both men and women have different interests and preferences, and thus the need for segmentation.

Organizations need to have different marketing strategies for men which would obviously not work in case of females.

A woman would not purchase a product meant for males and vice a versa.

The segmentation of the market as per the gender is important in many industries like cosmetics, footwear, jewellery and apparel industries.

- **Age Group**

Division on the basis of age group of the target audience is also one of the ways of market segmentation.

The products and marketing strategies for teenagers would obviously be different than kids.

Age group (0 - 10 years) - Toys, Nappies, Baby Food, Prams
Age Group (10 - 20 years) - Toys, Apparels, Books, School Bags
Age group (20 years and above) - Cosmetics, Anti-Ageing Products, Magazines, apparels and so on

- **Income**

Marketers divide the consumers into small segments as per their income. Individuals are classified into segments according to their monthly earnings.

The three categories are:

High income Group
Mid Income Group
Low Income Group

Stores catering to the higher income group would have different range of products and strategies as compared to stores which target the lower income group.

Pantaloon, Carrefour, Shopper's stop target the high income group as compared to Vishal Retail, Reliance Retail or Big bazaar who cater to the individuals belonging to the lower income segment.

- **Marital Status**

Market segmentation can also be as per the marital status of the individuals. Travel agencies would not have similar holiday packages for bachelors and married couples.

- **Occupation**

Office goers would have different needs as compared to school / college students.

A beach house shirt or a funky T Shirt would have no takers in a Zodiac Store as it caters specifically to the professionals.

Types of Market Segmentation

- **Psychographic segmentation**

  The basis of such segmentation is the lifestyle of the individuals. The individual's attitude, interest, value help the marketers to classify them into small groups.

- **Behaviouralistic Segmentation**

  The loyalties of the customers towards a particular brand help the marketers to classify them into smaller groups, each group comprising of individuals loyal towards a particular brand.

- **Geographic Segmentation**

  Geographic segmentation refers to the classification of market into various geographical areas. A marketer can't have similar strategies for individuals living at different places.

  Nestle promotes Nescafe all through the year in cold states of the country as compared to places which have well defined summer and winter season.

  McDonald's in India does not sell beef products as it is strictly against the religious beliefs of the countrymen, whereas McDonald's in US freely sells and promotes beef products.

Need for Market Segmentation - Why Market Segmentation ?

A set-up where two or more parties (also called buyers and sellers) are engaged in transaction of goods and services in exchange of money is called a market.

At the market place the sellers sell their goods to the consumers (buyers) in exchange of money.

Let us go through the following examples:

Nokia offers wide range of handsets for both males as well as females.

The handset for females would be sleeker and more colourful as compared to sturdy handsets for males. Males generally do not prefer stylish handsets.

The organizations can't have similar products for all individuals.

Perfumes and deodorants for females have a sweet fragrance whereas perfumes for males have a strong fragrance.

A marketer can't have similar strategies for all consumers.

The process of creating small segments comprising of like minded individuals within a broad market refers to market segmentation. Market segmentation helps in the division of market into small segments including individuals who show inclination towards identical brands and have similar interests, attitudes and perception.

Need for Market Segmentation (Why Market Segmentation?)

Not all individuals have similar needs. A male and a female would have varied interests and liking towards different products. A kid would not require something which an adult needs. A school kid would have a different requirement than an office goer. Market Segmentation helps the marketers to bring together individuals with similar choices and interests on a common platform.

- Market Segmentation helps the marketers to devise appropriate marketing strategies and promotional schemes according to the tastes of the individuals of a particular market segment. A male model would look out of place in an advertisement promoting female products. The marketers must be able to relate their products to the target segments.
- Market segmentation helps the marketers to understand the needs of the target audience and adopt specific marketing plans accordingly. Organizations can adopt a more focussed approach as a result of market segmentation.
- Market segmentation also gives the customers a clear view of what to buy and what not to buy. A Rado or Omega watch would have no takers amongst the lower income group as they cater to the premium segment. College students seldom go to a Zodiac or Van Heusen store as the merchandise offered by these stores are meant mostly for the professionals. Individuals from the lower income group never use a Blackberry. In simpler words, the segmentation process goes a long way in influencing the buying decision of the consumers.

  An individual with low income would obviously prefer a Nano or Alto instead of Mercedes or BMW.

- Market segmentation helps the organizations to target the right product to the right customers at the right time. Geographical segmentation classifies consumers according to their locations. A grocery store in colder states of the country would stock coffee all through the year as compared to places which have defined winter and summer seasons.
- Segmentation helps the organizations to know and understand their customers better. Organizations can now reach a wider audience and promote their products more effectively. It helps the organizations to concentrate their hard work on the target audience and get suitable results.

Steps in Market Segmentation

Segmentation refers to the process of creating small segments within a broad market to select the right target market for various brands. Market segmentation helps the marketers to devise and implement relevant strategies to promote their products amongst the target market.

A market segment consists of individuals who have similar choices, interests and preferences. They generally think on the same lines and are inclined towards similar products. Once the organizations decide on their target market, they can easily formulate strategies and plans to make their brands popular amongst the consumers.

Steps in Market Segmentation

1. Identify the target market

The first and foremost step is to identify the target market. The marketers must be very clear about who all should be included in a common segment. Make sure the individuals have something in common. A male and a female can’t be included in one segment as they have different needs and expectations.

Burberry stocks separate merchandise for both men and women. The management is very clear on the target market and has separate strategies for product promotion amongst both the segments.

A Garnier men's deodorant would obviously not sell if the company uses a female model to create awareness.

Segmentation helps the organizations decide on the marketing strategies and promotional schemes.

Maruti Suzuki has adopted a focused approach and wisely created segments within a large market to promote their cars.

Lower Income Group - Maruti 800, Alto
Middle Income Group - Wagon R, Swift, Swift Dzire, Ritz
High Income Group - Maruti Suzuki Kizashi, Suzuki Grand Vitara

Suzuki Grand Vitara would obviously have no takers amongst the lower income group.

The target market for Rado, Omega or Tag Heuer is the premium segment as compared to Maxima or a Sonata watch.

2. Identify expectations of Target Audience

Once the target market is decided, it is essential to find out the needs of the target audience. The product must meet the expectations of the individuals. The marketer must interact with the target audience to know more about their interests and demands.

Kellogg's K special was launched specifically for the individuals who wanted to cut down on their calorie intake.

Marketing professionals or individuals exposed to sun rays for a long duration need something which would protect their skin from the harmful effects of sun rays. Keeping this in mind, many organizations came with the concept of sunscreen lotions and creams with a sun protection factor especially for men.

3. Create Subgroups

The organizations should ensure their target market is well defined. Create subgroups within groups for effective results.

Cosmetics for females now come in various categories.

- Creams and Lotions for girls between 20-25 years would focus more on fairness.
- Creams and lotions for girls between 25 to 35 years promise to reduce the signs of ageing.

4. Review the needs of the target audience

It is essential for the marketer to review the needs and preferences of individuals belonging to each segment and sub-segment. The consumers of a particular segment must respond to similar fluctuations in the market and similar marketing strategies.

5. Name your market Segment

Give an appropriate name to each segment. It makes implementation of strategies easier.

A kids section can have various segments namely new born, infants, toddlers and so on.

6. Marketing Strategies

Devise relevant strategies to promote brands amongst each segment. Remember you can't afford to have same strategies for all the segments. Make sure there is a connect between the product and the target audience. Advertisements promoting female toiletries can't afford to have a male model, else the purpose gets nullified.

A model promoting a sunscreen lotion has to be shown roaming or working in sun for the desired impact.

7. Review the behavior

Review the behavior of the target audience frequently. It is not necessary individuals would have the same requirement (demand) all through the year. Demands vary, perceptions change and interests differ. A detailed study of the target audience is essential.

8. Size of the Target Market

It is essential to know the target market size. Collect necessary data for the same. It helps in sales planning and forecasting.

Marketing Mix - Meaning and its Elements

Neil Borden in the year 1953 introduced the term Marketing mix, an extension of the work done by one of his associates James Culliton in 1948.

Marketing Mix - A mixture of several ideas and plans followed by a marketing representative to promote a particular product or brand is called marketing mix. Several concepts and ideas combined together to formulate final strategies helpful in making a brand popular amongst the masses form marketing mix.

Elements of Marketing Mix

The elements of marketing mix are often called the four P's of marketing.

1. **Product**

   Goods manufactured by organizations for the end-users are called products.

   Products can be of two types - Tangible Product and Intangible Product (Services)

   An individual can see, touch and feel tangible products as compared to intangible products.

   A product in a market place is something which a seller sells to the buyers in exchange of money.

2. **Price**

The money which a buyer pays for a product is called as price of the product. The price of a product is indirectly proportional to its availability in the market. Lesser its availability, more would be its price and vice a versa.

Retail stores which stock unique products (not available at any other store) quote a higher price from the buyers.

3. **Place**

   Place refers to the location where the products are available and can be sold or purchased. Buyers can purchase products either from physical markets or from virtual markets. In a physical market, buyers and sellers can physically meet and interact with each other whereas in a virtual market buyers and sellers meet through internet.

4. **Promotion**

   Promotion refers to the various strategies and ideas implemented by the marketers to make the end - users aware of their brand. Promotion includes various techniques employed to promote and make a brand popular amongst the masses.

   Promotion can be through any of the following ways:

   - **Advertising**

     Print media, Television, radio are effective ways to entice customers and make them aware of the brand's existence.

     Billboards, hoardings, banners installed intelligently at strategic locations like heavy traffic areas, crossings, railway stations, bus stands attract the passing individuals towards a particular brand.

     Taglines also increase the recall value of the brand amongst the customers.

   - **Word of mouth**

     One satisfied customer brings ten more customers along with him whereas one dis-satisfied customer takes away ten more customers. That's the importance of word of mouth. Positive word of mouth goes a long way in promoting brands amongst the customers.

Lately three more P's have been added to the marketing mix. They are as follows:

- **People -** The individuals involved in the sale and purchase of products or services come under people.
- **Process -** Process includes the various mechanisms and procedures which help the product to finally reach its target market
- **Physical Evidence -** With the help of physical evidence, a marketer tries to communicate the USP's and benefits of a product to the end users

Four C's of Marketing Mix

Now a days, organizations treat their customers like kings. In the current scenario, the four C's has thus replaced the four P's of marketing making it a more customer oriented model. Koichi Shimizu in the year 1973 proposed a four C's classification.

- **Commodity -** (Replaces Products)
- **Cost -** (Replaces Price) involves manufacturing cost, buying cost and selling cost
- **Channel -** The various channels which help the product reach the target market.
- **Communication -** (Replaces Promotion)

Robert F. Lauterborn gave a modernized version of the four C's model in the year 1993. According to him the four C's of marketing are:

Consumer
Cost
Convenience
Communication

Target Marketing - Meaning, Basis and its Need

It is not possible for a marketer to have similar strategies for product promotion amongst all individuals. Kids do not get attracted towards products meant for adults and vice a versa. Every segment has a different need, interest and perception. No two segments can have the same ideologies or require a similar product.

Target Marketing refers to a concept in marketing which helps the marketers to divide the market into small units comprising of like minded people. Such segmentation helps the marketers to design specific strategies and techniques to promote a product amongst its target market. A target market refers to a group of individuals who are inclined towards similar products and respond to similar marketing techniques and promotional schemes.

Kellogg's K Special mainly targets individuals who want to cut down on their calorie intake. The target market in such a case would be individuals who are obese. The strategies designed to promote K Special would not be the same in case of any other brand say Complan or Boost which majorly cater to teenagers and kids to help them in their overall development. The target market for Kellogg's K Special would absolutely be different from Boost or Complan.

Jordan, a college student went to a nearby retail store to purchase a shirt for himself. The retailer tried hard to sell a nice formal shirt to him, but somehow could not convince Jordan. Jordan left the store sad and empty handed.

Where do you think is the problem ?

The problem is neither with Jordon nor the shirt. The retailer in this case failed to understand that Jordan, being a college student, was not the target audience for the formal shirt. No amount of convincing helped as the retailer was targeting the wrong audience. The target market for a formal shirt would be office goers or professionals. Funky T shirts, casual shirts would have worked better for Jordon.

The target market for Zodiac Clothing Company Limited or Louis Philippe would be the office goers whereas the target market for Levi's would be the school and college kids.

The target market for Cat moss or Giny and Jony would be kids.

In simpler words, target market consists of like-minded individuals for whom an organization can afford to have similar strategies, promotional schemes and advertisements to entice them and prompt them to purchase the product. Once a company decides on its target audience, it implements various promotional strategies to make a brand popular amongst them.

Basis of Target Marketing

- Age
- Gender
- Interests
- Geographic location
- Need
- Occupation

Why target marketing? (Need of Target Marketing)

- Organizations can use similar kind of strategies to promote their products within a target market.
- They can adopt a more focussed approach in case of target marketing. They know their customers well and thus can reach out to their target audience in the most effective way.

How to create Target Market

- The organization must first decide who all individuals would fit into a particular segment. A male and a female can't be kept in the same segment. The first and the foremost step is to decide on the target market.
- The next step is to identify need and preference of the target market. It is essential to find out what the target market expects from the product.
- Once the target market is decided, organizations can decide on the various strategies helpful to promote their product.

Target Market Selection

Target market represents a group of individuals who have similar needs, perceptions and interests. They show inclination towards similar brands and respond equally to market fluctuations.

Individuals who think on the same lines and have similar preferences form the target audience. Target market includes individuals who have almost similar expectations from the organizations or marketers.

Obese individuals all across the globe look forward to cutting down their calorie intake. Marketers understood their need and came up with Kellogg's K Special which promises to reduce weight in just two weeks. The target market for Kellogg's K Special diet would include obese individuals.

Individuals who sweat more would be more interested in buying perfumes and deodorants with a strong and lasting fragrance.

How to select the Target Market ?

It is essential for the organizations or marketers to identify the set of people whom they want to target ?. Marketers must understand the needs and expectations of the individuals to create its target market.

The target audience must have similar needs, interests and expectations.

Similar products and brands should entice the individuals comprising the target market.

Same taglines and advertisements attract the attention of the target audience and prompt them to buy.

To select a target market, it is essential for the organizations to study the following factors:

- Understand the lifestyle of the consumers
- Age group of the individuals
- Income of the consumers
- Spending capacity of the consumers
- Education and Profession of the people
- Gender
- Mentality and thought process of the consumers
- Social Status
- Kind of environment individuals are exposed to

Always remember you would never be successful if you try to impress everyone. Be specific

Identify individuals who show similar characteristics. Put them in one group to create target market within a broad market.

Let us go through the below example:

Why do people use soaps ?

Some would use it against body odour
Some would use it to fight germs and infections
Some for a fair and spotless skin

In the above case the product is same but the needs of the individuals are different. Consumers have different reasons as to why they use soaps.

Target Audience 1

Against body odour - Soaps with a strong and lasting fragrance.

- Marketing professionals
- Sales Representatives
- People exposed to sun for a longer duration
- Individuals travelling by public transport

Target Audience 2

To fight germs and infections - Soaps with medicinal properties

- Individuals working in hospitals, nursing homes and research centres
- Individuals working in unhygienic conditions

Target Audience 3

For a whiter skin - Soaps which improve the skin tone of individuals.

- Teenagers
- College students

Target Audience 4

For a younger looking skin - Soaps which help get rid of wrinkles and fine lines of ageing

- Individuals between age group 30 – 50 years or above

Individuals with identical requirements form the target audience. A 20 year old girl can't be targeted along with someone who is 50 years old.

Online matrimony sites target young individuals aspiring to get married. The organizations strive hard to fulfil their expectations by providing suitable matches.

Other important factors like climatic conditions and geographical locations also play an important role in deciding the target market.

Deodorants and perfumes sell like hot cakes in humid and warm places.

Target Market for Beverages

Bournvita, Complan, Maltova, Boost - Growing kids
Soft drinks (Pepsi, Coke) - Teenagers
Fruit Juice (Real, Tropicana) - Health conscious individuals
Energy Drinks(Red bull) - Professionals, Office goers

Product Positioning Process - Steps in Product Positioning

The process of creating an image of a product in the minds of the consumers is called as positioning. Positioning helps to create first impression of brands in the minds of target audience. In simpler words positioning helps in creating a perception of a product or service amongst the consumers.

Example

The brand "Bisleri" stands for purity.

The brand "Ceat Tyre" stands for better grip.

Steps to product Positioning

Marketers with the positioning process try to create a unique identity of a product amongst the customers.

1. **Know your target audience well**

   It is essential for the marketers to first identify the target audience and then understand their needs and preferences. Every individual has varied interests, needs and preferences. No two individuals can think on the same lines.

   Know what your customers expect out of you.

   The products must fulfill the demands of the individuals.

2. **Identify the product features**

The marketers themselves must be well aware of the features and benefits of the products. It is rightly said you can't sell something unless and until you yourself are convinced of it.

A marketer selling Nokia phones should himself also use a Nokia handset for the customers to believe him.

3. **Unique selling Propositions**

Every product should have USPs; at least some features which are unique. The organizations must create USPs of their brands and effectively communicate the same to the target audience.

The marketers must themselves know what best their product can do.

Find out how the products can be useful to the end-users ?

Why do people use "Anti Dandruff Shampoo?"

Anti Dandruff Shampoos are meant to get rid of dandruff. This is how the product is positioned in the minds of the individuals.

Individuals purchase "Dabur Chyawanprash "to strengthen their body's internal defense mechanism and fight against germs, infections and stress. That's the image of Dabur Chyawanprash in the minds of consumers.

USP of a Nokia Handset - Better battery backup.

USP of Horlicks Foodles - Healthy snack

Communicate the USPs to the target audience through effective ways of advertising. Use banners, slogans, inserts and hoardings.

Let individuals know what your brand offers for them to decide what is best for them.

4. **Know your competitors**
   - A marketer must be aware of the competitor's offerings. Let the individuals know how your product is better than the competitors?
   - Never underestimate your competitors.
   - Let the target audience know how your product is better than others.
   - The marketers must always strive hard to have an edge over their competitors.
5. **Ways to promote brands**
   - Choose the right theme for the advertisement.
   - Use catchy taglines.
   - The advertisement must not confuse people.
   - The marketer must highlight the benefits of the products.
6. **Maintain the position of the brand**
   - For an effective positioning it is essential for the marketers to continue to live up to the expectations of the end - users.
   - Never compromise on quality.
   - Don't drastically reduce the price of your products.
   - A Mercedes car would not be the same if its price is reduced below a certain level.
   - A Rado watch would lose its charm if its price is equal to a Sonata or a Maxima Watch.

Difference between Market Segmentation, Targeting and Positioning

A market refers to a set up where two or more parties are involved in transaction of goods and services in exchange of money. The two parties here are known as sellers and buyers.

It is the responsibility of the marketers to create awareness of their products amongst the consumers. It is essential for the individuals to be aware of the brand's existence. The USPs of the brands must be communicated well to the end-users.

An organization can't afford to have similar strategies for product promotion amongst all individuals. Not every individual has the same requirement and demand.

The marketers thus came with the concept of **STP**.

STP stands for:

S - Segmentation
T - Targeting
P - Positioning

The first step in the process of product promotion is **Segmentation**

The division of a broad market into small segments comprising of individuals who think on the same lines and show inclination towards similar products and brands is called Market Segmentation.

Market Segmentation refers to the process of creation of small groups (segments) within a large market to bring together consumers who have similar requirements, needs and interests.

The individuals in a particular segment respond to similar market fluctuations and require identical products.

In simpler words market segmentation can also be called as Grouping.

Kids form one segment; males can be part of a similar segment while females form another segment. Students belong to a particular segment whereas professionals and office goers can be kept in one segment.

Targeting

Once the marketer creates different segments within the market, he then devises various marketing strategies and promotional schemes according to the tastes of the individuals of particular segment. This process is called targeting. Once market segments are created, organization then targets them.

Targeting is the second stage and is done once the markets have been segmented.

Organizations with the help of various marketing plans and schemes target their products amongst the various segments.

Nokia offers handsets for almost all the segments. They understand their target audience well and each of their handsets fulfils the needs and expectations of the target market.

Tata Motors launched Tata Nano especially for the lower income group.

Positioning

Positioning is the last stage in the Segmentation Targeting Positioning Cycle.

Once the organization decides on its target market, it strives hard to create an image of its product in the minds of the consumers. The marketers create a first impression of the product in the minds of consumers through positioning.

Positioning helps organizations to create a perception of the products in the minds of target audience.

Ray Ban and Police Sunglasses cater to the premium segment while Vintage or Fastrack sunglasses target the middle income group. Ray Ban sunglasses have no takers amongst the lower income group.

Garnier offers wide range of merchandise for both men and women.

Each of their brands has been targeted well amongst the specific market segments. (Men, women, teenagers as well as older generation)

Men - Sunscreen lotions, Deodorant
Women - Daily skin care products, hair care products
Teenagers - Hair colour products, Garnier Light (Fairness cream)
Older Generation - Cream to fight signs of ageing, wrinkles

A female would never purchase a sunscreen lotion meant for men and vice a versa. That's brand positioning.

Market Demand Forecasting: Key Terms,

Forecasts are becoming the lifetime of business in a world, where the tidal waves of change are sweeping the most established of structures, inherited by human society. Commerce just happens to the one of the first casualties. Survival in this age of economic predators, requires the tact, talent and technique of predicting the future.

Forecast is becoming the sign of survival and the language of business. All requirements of the business sector need the technique of accurate and practical reading into the future. Forecasts are, therefore, very essential requirement for the survival of business. Management requires forecasting information when making a wide range of decisions.

The sales forecast is particularly important as it is the foundation upon which all company plans are built in terms of markets and revenue. Management would be a simple matter if business was not in a continual state of change, the pace of which has quickened in recent years.

It is becoming increasingly important and necessary for business to predict their future prospects in terms of sales, cost and profits. The value of future sales is crucial as it affects costs profits, so the prediction of future sales is the logical starting point of all business planning.

A forecast is a prediction or estimation of future situation. It is an objective assessment of future course of action. Since future is uncertain, no forecast can be percent correct. Forecasts can be both physical as well as financial in nature. The more realistic the forecasts, the more effective decisions can be taken for tomorrow.

In the words of Cundiff and Still, "Demand forecasting is an estimate of sales during a specified future period which is tied to a proposed marketing plan and which assumes a particular set of uncontrollable and competitive forces". Therefore, demand forecasting is a projection of firm's expected level of sales based on a chosen marketing plan and environment.

Forecast is different from prediction. Forecast is an estimate of future events and trends and is arrived at by systematically combining past data and projecting it forward in a predetermine a manner. Prediction is a similar, but more general term. Prediction is an estimate of future events and trends in a subjective manner without taking into account the past data. The subjective considerations may not emerge from any predetermined analysis or approach.

Projection is of two types – forward and backward. It is a forward projection of data variables, which is named forecasting. By contrast, the backward projection of data may be named 'back casting', a tool used by the new economic historians. For practical managers concerned with futurology, what is relevant is forecasting, the forward projection of data, which supports the production of an event.

Thus, if a marketing manager fears demand recession, he must establish its basis in terms of trends in sales data; he can estimate such trends through extrapolation of his available sales data. This trend estimation is an exercise in forecasting.

Time Horizon of Demand Forecasting

Market and demand analysis of various types are undertaken to meet specific requirements of planning and decision making. For example, short-term decisions in production planning, distribution etc and selling individual products would require short-term forecast, up-to one year time horizon, which must he fairly accurate for specific product items. For long-term planning, time horizon being four to five years, information required from demand analysis would be for broad product groups for facilitating choice of technology, machine tools and other hardware's and their location. Longer-term forecasting is also undertaken to determine trends in technology development so as to choose the technology for backing up and funding its research and development.

Levels of Demand Forecasting

Demand forecasting in managerial economics can be at the level of a firm or an industry or at the national or national or international level:

1. **Firm Level:** If the exercise aims at forecasting demand of firm' s products locally at state, region or national level, it is a micro-level of demand forecasting. Sometimes, forecasts are required for company' s products in specific industry or market segment.
2. **Industry Level:** Such a demand forecasting exercise focuses on an industry as a whole for the region and/or national level. These forecasts may be undertaken by a group of companies or by industry/trade associations.
3. **National Level:** Demand forecasts at national level include parameters like national income, expenditure, index of industrial and/or agricultural production etc. Estimating aggregate demand of products at national level facilitates governmental decisions for imports, exports, pricing policy etc.
4. **International Level:** Companies operating in multinational markets would require similar forecasting of demands for its products, trends in consumption etc at international level Managerial Economists play a leading role in masterminding these forecasts at firm, industry, national and international levels. Time horizon of these demand forecasts usually varies from 1 to S years and in rare instances upto 10 years.

Need for Demand Forecasting

Business managers, depending upon their functional area, need various forecasts. They need to forecast demand, supply, price, profit, costs and returns from investments.

The question may arise: Why have we chosen demand forecasting as a model? What is the use of demand forecasting?

The significance of demand or sales forecasting in the context of business policy decisions can hardly be overemphasized. Sales constitute the primary source of revenue for the corporate unit and reduction for sales gives rise to most of the costs incurred by the firm.

Demand forecasting is essential for a firm because it must plan its output to meet the forecasted demand according to the quantities demanded and the time at which these are demanded. The forecasting demand helps a firm to arrange for the supplies of the necessary inputs without any wastage of materials and time and also helps a firm to diversify its output to stabilize its income overtime.

The purpose of demand forecasting differs according to the type of forecasting.

1. The Purpose of the Short Term Forecasting

It is difficult to define short run for a firm because its duration may differ according to the nature of the commodity. For a highly sophisticated automatic plant 3 months time may be considered as short run, while for another plant duration may extend to 6 months or one year. Time duration may be set for demand forecasting depending upon how frequent the fluctuations in demand are, short- term forecasting can be undertaken by affirm for the following purpose;

- Appropriate scheduling of production to avoid problems of over production and under-production.
- Proper management of inventories
- Evolving suitable price strategy to maintain consistent sales
- Formulating a suitable sales strategy in accordance with the changing pattern of demand and extent of competition among the firms.
- Forecasting financial requirements for the short period.

2. The Purpose of Long Term Forecasting

The concept of demand forecasting is more relevant to the long-run that the short-run. It is comparatively easy to forecast the immediate future than to forecast the distant future. Fluctuations of a larger magnitude may take place in the distant future. In fast developing economy the duration may go up to 5 or 10 years, while in stagnant economy it may go up to 20 years. More over the time duration also depends upon the nature of the product for which demand forecasting is to be made. The purposes are;

- Planning for a new project, expansion and modernization of an existing unit, diversification and technological up gradation.
- Assessing long term financial needs. It takes time to raise financial resources.
- Arranging suitable manpower. It can help a firm to arrange for specialized labour force and personnel.
- Evolving a suitable strategy for changing pattern of consumption.

Importance of Demand Forecasting

Why demand forecasting is needed in a business? Forecasting product demand is crucial to any supplier, manufacturer, or retailer. Forecasts of future demand will determine the quantities that should be purchased, produced, and shipped. Demand forecasts are necessary since the basic operations process, moving from the suppliers' raw materials to finished goods in the customers' hands, takes time. Most firms cannot simply wait for demand to emerge and then react to it. Instead, they must anticipate and plan for future demand so that they can react immediately to customer orders as they occur. In other words, most manufacturers "make to stock" rather than "make to order" – they plan ahead and then deploy inventories of finished goods into field locations. Thus, once a customer order materializes, it can be fulfilled immediately – since most customers are not willing to wait the time it would take to actually process their order throughout the supply chain and make the product based on their order. An order cycle could take weeks or months to go back through part suppliers and sub-assemblers, through manufacture of the product, and through to the eventual shipment of the order to the customer.

Firms that offer rapid delivery to their customers will tend to force all competitors in the market to keep finished good inventories in order to provide fast order cycle times. As a result, virtually every organization involved needs to manufacture or at least order parts based on a forecast of future demand. The ability to accurately forecast demand also affords the firm opportunities to control costs through leveling its production quantities, rationalizing its transportation, and generally planning for efficient logistics operations.

In general practice, accurate demand forecasts lead to efficient operations and high levels of customer service, while inaccurate forecasts will inevitably lead to inefficient, high cost operations and/or poor levels of customer service. In many supply chains, the most important action we can take to improve the efficiency and effectiveness of the logistics process is to improve the quality of the demand forecasts.

Procedure to Prepare Sales Forecast:

Companies commonly use a three-stage procedure to prepare a sales forecast. They make an environmental forecast, followed by an industry forecast, and followed by a company's sales forecast, the environmental forecast calls for projecting inflation, unemployment, interest rate, consumer spending, and saving, business investment, government expenditure, net exports and other environmental magnitudes and events of importance to the company.

The industry forecast is based on surveys of consumers' intention and analysis of statistical trends is made available by trade associations or chamber of commerce. It can give indication to a firm regarding tine direction in which the whole industry will be moving. The company derives its sales forecast by assuming that it will win a certain market share.

All forecasts are built on one of the three information bases:

What people say?

What people do?

What people have done?

Types of Forecasting:

Forecasts can be broadly classified into:

(i) Passive Forecast and

(ii) Active Forecast. Under passive forecast prediction about future is based on the assumption that the firm does not change the course of its action. Under active forecast, prediction is done under the condition of likely future changes in the actions by the firms.

From the view point of 'time span', forecasting may be classified into two, viz.,:

(i) Short term demand forecasting and (ii) long term demand forecasting. In a short run forecast, seasonal patterns are of much importance. It may cover a period of three months, six months or one year. It is one which provides information for tactical decisions.

Which period is chosen depends upon the nature of business. Such a forecast helps in preparing suitable sales policy. Long term forecasts are helpful in suitable capital planning. It is one which provides information for major strategic decisions. It helps in saving the wastages in material, man hours, machine time and capacity. Planning of a new unit must start with an analysis of the long term demand potential of the products of the firm.

There are basically two types of forecast, viz.,:

(i) External or national group of forecast, and (ii) Internal or company group forecast. External forecast deals with trends in general business. It is usually prepared by a company's research wing or by outside consultants. Internal forecast includes all those that are related to the operation of a particular enterprise such as sales group, production group, and financial group. The structure of internal forecast includes forecast of annual sales, forecast of products cost, forecast of operating profit, forecast of taxable income, forecast of cash resources, forecast of the number of employees, etc.

At different levels forecasting may be classified into:

(i) Macro-level forecasting,

(ii) Industry- level forecasting,

(iii) Firm- level forecasting and

(iv) Product-line forecasting.

Macro-level forecasting is concerned with business conditions over the whole economy. It is measured by an appropriate index of industrial production, national income or expenditure. Industry-level forecasting is prepared by different trade associations.

This is based on survey of consumers' intention and analysis of statistical trends. Firm-level forecasting is related to an individual firm. It is most important from managerial view point. Product-line forecasting helps the firm to decide which of the product or products should have priority in the allocation of firm's limited resources.

Forecast may be classified into (i) general and (ii) specific. The general forecast may generally be useful to the firm. Many firms require separate forecasts for specific products and specific areas, for this general forecast is broken down into specific forecasts.

There are different forecasts for different types of products like:

(i) Forecasting demand for nondurable consumer goods,

(ii) Forecasting demand for durable consumer goods,

(iii) Forecasting demand for capital goods, and

(iv) Forecasting demand for new-products.

Non-Durable Consumer Goods:

These are also known as 'single-use consumer goods' or perishable consumer goods. These vanish after a single act of consumption. These include goods like food, milk, medicine, fruits, etc. Demand for these goods depends upon household disposable income, price of the commodity and the related goods and population and characteristics. Symbolically,

$Dc = f(y, s, p, p_r)$ where

Dc = the demand for commodity c

y = the household disposable income

s = population

p = price of the commodity c

p_r = price of its related goods

(i) Disposable income expressed as Dc = f (y) i.e. other things being equal, the demand for commodity c depends upon the disposable income of the household. Disposable income of the household is estimated after the deduction of personal taxes from the personal income. Disposable income gives an idea about the purchasing power of the household.

(ii) Price, expressed as $Dc = f (p, p_r)$ i.e. other things being equal, demand for commodity c depends upon its own price and the price of related goods. While the demand for a commodity is inversely related to its own price of its complements. It is positively related to its substitutes.' Price elasticities and cross elasticities of non-durable consumer goods help in their demand forecasting.

(iii) Population, expressed as Dc= f (5) i.e. other things being equal, demand for commodity c depends upon the size of population and its composition. Besides, population can also be classified on the basis of sex, income, literacy and social status. Demand for non-durable consumer goods is influenced by all these factors. For the general demand forecasting population as a whole is considered, but for specific demand forecasting division of population according to different characteristics proves to be more useful.

Durable Consumer Goods:

These goods can be consumed a number of times or repeatedly used without much loss to their utility. These include goods like car, T.V., air-conditioners, furniture etc. After their long use, consumers have a choice either these could be consumed in future or could be disposed of.

The choice depends upon the following factors:

(i) Whether a consumer will go for the replacement of a durable good or keep on using it after necessary repairs depends upon his social status, level of money income, taste and fashion, etc. Replacement demand tends to grow with increase in the stock of the commodity with the consumers. The firm can estimate the average replacement cost with the help of life expectancy table.

(ii) Most consumer durables are consumed in common by the members of a family. For instance, T.V., refrigerator, etc. are used in common by households. Demand forecasts for goods commonly used should take into account the number of households rather than the total size of population. While estimating the number of households, the income of the household, the number of children and sex- composition, etc. should be taken into account.

(iii) Demand for consumer durables depends upon the availability of allied facilities. For example, the use of T.V., refrigerator needs regular supply of power, the use of car needs availability of fuel, etc. While forecasting demand for consumer durables, the provision of allied services and their cost should also be taken into account.

(iv) Demand for consumer durables is very much influenced by their prices and their credit facilities. Consumer durables are very much sensitive to price changes. A small fall in their price may bring large increase in demand.

Forecasting Demand for Capital Goods:

Capital goods are used for further production. The demand for capital good is a derived one. It will depend upon the profitability of industries. The demand for capital goods is a case of derived demand. In the case of particular capital goods, demand will depend on the specific markets they serve and the end uses for which they are bought.

The demand for textile machinery will, for instance, be determined by the expansion of textile industry in terms of new units and replacement of existing machinery. Estimation of new demand as well as replacement demand is thus necessary.

Three types of data are required in estimating the demand for capital goods:

(a) The growth prospects of the user industries must be known,

(b) the norm of consumption of the capital goods per unit of each end-use product must be known, and

(c) the velocity of their use.

Forecasting Demand for New Products:

The methods of forecasting demand for new products are in many ways different from those for established products. Since the product is new to the consumers, an intensive study of the

product and its likely impact upon other products of the same group provides a key to an intelligent projection of demand.

Joel Dean has classified a number of possible approaches as follows:

(a) Evolutionary Approach:

It consists of projecting the demand for a new product as an outgrowth and evolution of an existing old product.

(b) Substitute Approach:

According to this approach the new product is treated as a substitute for the existing product or service.

(c) Growth Curve Approach:

It estimates the rate of growth and potential demand for the new product as the basis of some growth pattern of an established product.

(d) Opinion-Poll Approach:

Under this approach the demand is estimated by direct enquiries from the ultimate consumers.

(e) Sales Experience Approach:

According to this method the demand for the new product is estimated by offering the new product for sale in a sample market.

(f) Vicarious Approach:

By this method, the consumers' reactions for a new product are found out indirectly through the specialised dealers who are able to judge the consumers' needs, tastes and preferences.

The various steps involved in forecasting the demand for non-durable consumer goods are the following:

(a) First identify the variables affecting the demand for the product and express them in appropriate forms, (b) gather relevant data or approximation to relevant data to represent the variables, and (c) use methods of statistical analysis to determine the most probable relationship between the dependent and independent variables.

Forecasting Techniques:

Demand forecasting is a difficult exercise. Making estimates for future under the changing conditions is a Herculean task. Consumers' behaviour is the most unpredictable one because it is motivated and influenced by a multiplicity of forces. There is no easy method or a simple formula which enables the manager to predict the future.

Economists and statisticians have developed several methods of demand forecasting. Each of these methods has its relative advantages and disadvantages. Selection of the right method is essential to make demand forecasting accurate. In demand forecasting, a judicious combination of statistical skill and rational judgement is needed.

Mathematical and statistical techniques are essential in classifying relationships and providing techniques of analysis, but they are in no way an alternative for sound judgement. Sound judgement is a prime requisite for good forecast.

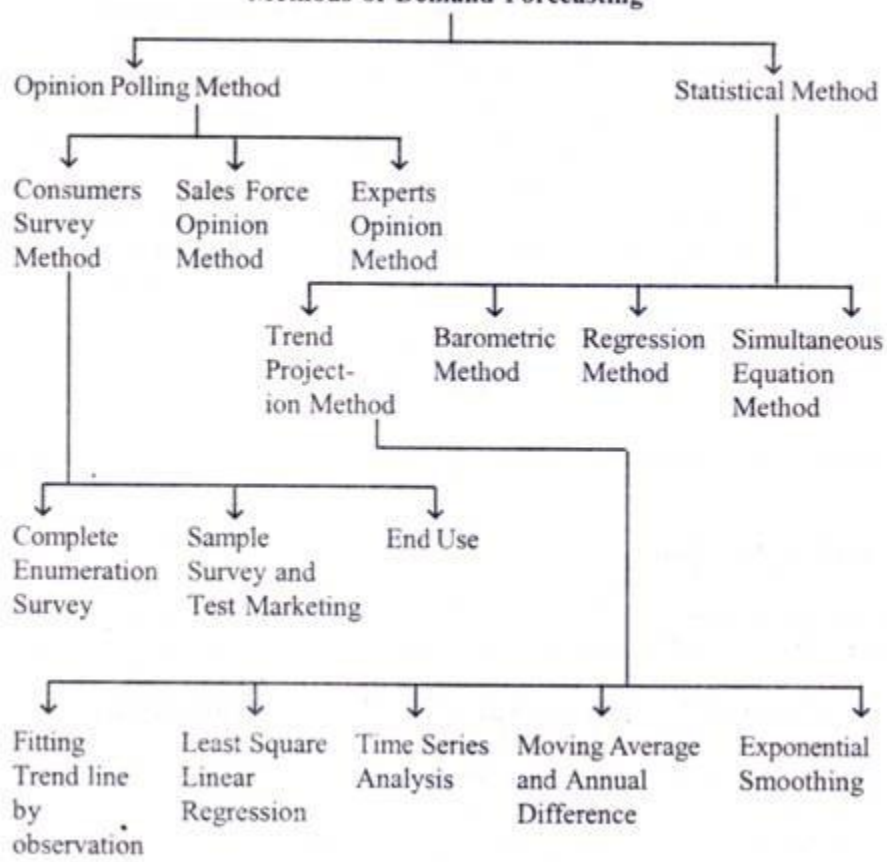
The judgment should be based upon facts and the personal bias of the forecaster should not prevail upon the facts. Therefore, a mid way should be followed between mathematical techniques and sound judgment or pure guess work.

The more commonly used methods of demand forecasting are discussed below:

The various methods of demand forecasting can be summarised in the form of a chart as shown in Table 1.

Table 1.

Methods of Demand Forecasting



1. Opinion Polling Method:

In this method, the opinion of the buyers, sales force and experts could be gathered to determine the emerging trend in the market.

The opinion polling methods of demand forecasting are of three kinds:

(a) Consumer's Survey Method or Survey of Buyer's Intentions:

In this method, the consumers are directly approached to disclose their future purchase plans. I his is done by interviewing all consumers or a selected group of consumers out of the relevant population. This is the direct method of estimating demand in the short run. Here the burden of forecasting is shifted to the buyer. The firm may go in for complete enumeration or for sample

surveys. If the commodity under consideration is an intermediate product then the industries using it as an end product are surveyed.

(i) Complete Enumeration Survey:

Under the Complete Enumeration Survey, the firm has to go for a door to door survey for the forecast period by contacting all the households in the area. This method has an advantage of first hand, unbiased information, yet it has its share of disadvantages also. The major limitation of this method is that it requires lot of resources, manpower and time.

In this method, consumers may be reluctant to reveal their purchase plans due to personal privacy or commercial secrecy. Moreover, at times the consumers may not express their opinion properly or may deliberately misguide the investigators.

(ii) Sample Survey and Test Marketing:

Under this method some representative households are selected on random basis as samples and their opinion is taken as the generalised opinion. This method is based on the basic assumption that the sample truly represents the population. If the sample is the true representative, there is likely to be no significant difference in the results obtained by the survey. Apart from that, this method is less tedious and less costly.

A variant of sample survey technique is test marketing. Product testing essentially involves placing the product with a number of users for a set period. Their reactions to the product are noted after a period of time and an estimate of likely demand is made from the result. These are suitable for new products or for radically modified old products for which no prior data exists. It is a more scientific method of estimating likely demand because it stimulates a national launch in a closely defined geographical area.

(iii) End Use Method or Input-Output Method:

This method is quite useful for industries which are mainly producer's goods. In this method, the sale of the product under consideration is projected as the basis of demand survey of the industries using this product as an intermediate product, that is, the demand for the final product is the end user demand of the intermediate product used in the production of this final product.

The end user demand estimation of an intermediate product may involve many final good industries using this product at home and abroad. It helps us to understand inter-industry' relations. In input-output accounting two matrices used are the transaction matrix and the input co-efficient matrix. The major efforts required by this type are not in its operation but in the collection and presentation of data.

(b) Sales Force Opinion Method:

This is also known as collective opinion method. In this method, instead of consumers, the opinion of the salesmen is sought. It is sometimes referred as the "grass roots approach" as it is a bottom-up method that requires each sales person in the company to make an individual forecast for his or her particular sales territory.

These individual forecasts are discussed and agreed with the sales manager. The composite of all forecasts then constitutes the sales forecast for the organisation. The advantages of this method are that it is easy and cheap. It does not involve any elaborate statistical treatment. The main merit of this method lies in the collective wisdom of salesmen. This method is more useful in forecasting sales of new products.

(c) Experts Opinion Method:

This method is also known as "Delphi Technique" of investigation. The Delphi method requires a panel of experts, who are interrogated through a sequence of questionnaires in which the responses to one questionnaire are used to produce the next questionnaire. Thus any information available to some experts and not to others is passed on, enabling all the experts to have access to all the information for forecasting.

The method is used for long term forecasting to estimate potential sales for new products. This method presumes two conditions: Firstly, the panellists must be rich in their expertise, possess wide range of knowledge and experience. Secondly, its conductors are objective in their job. This method has some exclusive advantages of saving time and other resources.

2. Statistical Method:

Statistical methods have proved to be immensely useful in demand forecasting. In order to maintain objectivity, that is, by consideration of all implications and viewing the problem from an external point of view, the statistical methods are used.

The important statistical methods are:

(i) Trend Projection Method:

A firm existing for a long time will have its own data regarding sales for past years. Such data when arranged chronologically yield what is referred to as 'time series'. Time series shows the past sales with effective demand for a particular product under normal conditions. Such data can be given in a tabular or graphic form for further analysis. This is the most popular method among business firms, partly because it is simple and inexpensive and partly because time series data often exhibit a persistent growth trend.

Time series has got four types of components namely, Secular Trend (T), Secular Variation (S), Cyclical Element (C), and an Irregular or Random Variation (I). These elements are expressed by the equation O = TSCI. Secular trend refers to the long run changes that occur as a result of general tendency.

Seasonal variations refer to changes in the short run weather pattern or social habits. Cyclical variations refer to the changes that occur in industry during depression and boom. Random variation refers to the factors which are generally able such as wars, strikes, flood, famine and so on.

When a forecast is made the seasonal, cyclical and random variations are removed from the observed data. Thus only the secular trend is left. This trend is then projected. Trend projection fits a trend line to a mathematical equation.

The trend can be estimated by using any one of the following methods:

(a) The Graphical Method,

(b) The Least Square Method.

a) Graphical Method:

This is the most simple technique to determine the trend. All values of output or sale for different years are plotted on a graph and a smooth free hand curve is drawn passing through as many

points as possible. The direction of this free hand curve—upward or downward— shows the trend. A simple illustration of this method is given in Table 2.

Table 2: Sales of Firm

Year	**Sales (Rs. Crore)**
1995	40
1996	50
1997	44
1998	60
1999	54
2000	62

In Fig. 1, AB is the trend line which has been drawn as free hand curve passing through the various points representing actual sale values.

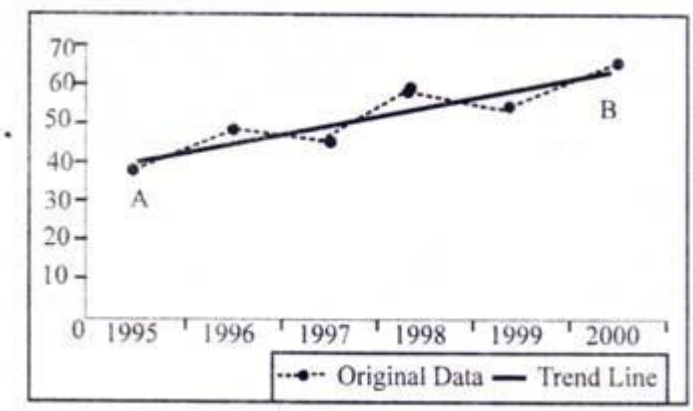


Fig. 1

(b) Least Square Method:

Under the least square method, a trend line can be fitted to the time series data with the help of statistical techniques such as least square regression. When the trend in sales over time is given by straight line, the equation of this line is of the form: y = a + bx. Where 'a' is the intercept and 'b' shows the impact of the independent variable. We have two variables—the independent variable x and the dependent variable y. The line of best fit establishes a kind of mathematical relationship between the two variables .v and y. This is expressed by the regression y on x.

In order to solve the equation v = a + bx, we have to make use of the following normal equations:

$\Sigma y = na + b \Sigma_X$

$\Sigma^{xy = a} \Sigma^{x+b} \Sigma^{x2}$

(ii) Barometric Technique:

A barometer is an instrument of measuring change. This method is based on the notion that "the future can be predicted from certain happenings in the present." In other words, barometric techniques are based on the idea that certain events of the present can be used to predict the directions of change in the future. This is accomplished by the use of economic and statistical indicators which serve as barometers of economic change.

Generally forecasters correlate a firm's sales with three series: Leading Series, Coincident or Concurrent Series and Lagging Series:

(a) The Leading Series:

The leading series comprise those factors which move up or down before the recession or recovery starts. They tend to reflect future market changes. For example, baby powder sales can be forecasted by examining the birth rate pattern five years earlier, because there is a correlation between the baby powder sales and children of five years of age and since baby powder sales today are correlated with birth rate five years earlier, it is called lagged correlation. Thus we can say that births lead to baby soaps sales.

(b) Coincident or Concurrent Series:

The coincident or concurrent series are those which move up or down simultaneously with the level of the economy. They are used in confirming or refuting the validity of the leading indicator used a few months afterwards. Common examples of coinciding indicators are G.N.P itself, industrial production, trading and the retail sector.

(c) The Lagging Series:

The lagging series are those which take place after some time lag with respect to the business cycle. Examples of lagging series are, labour cost per unit of the manufacturing output, loans outstanding, leading rate of short term loans, etc.

(iii) Regression Analysis:

It attempts to assess the relationship between at least two variables (one or more independent and one dependent), the purpose being to predict the value of the dependent variable from the specific value of the independent variable. The basis of this prediction generally is historical data. This method starts from the assumption that a basic relationship exists between two variables. An interactive statistical analysis computer package is used to formulate the mathematical relationship which exists.

For example, one may build up the sales model as:

Quantum of Sales = a. price + b. advertising + c. price of the rival products + d. personal disposable income +u

Where a, b, c, d are the constants which show the effect of corresponding variables as sales. The constant u represents the effect of all the variables which have been left out in the equation but having effect on sales. In the above equation, quantum of sales is the dependent variable and the variables on the right hand side of the equation are independent variables. If the expected values of the independent variables are substituted in the equation, the quantum of sales will then be forecasted.

The regression equation can also be written in a multiplicative form as given below:

Quantum of Sales = $(\text{Price})^a$ + $(\text{Advertising})^b$+ (Price of the rival products) ^{c} + (Personal disposable income Y + u

In the above case, the exponent of each variable indicates the elasticities of the corresponding variable. Stating the independent variables in terms of notation, the equation form is $QS = P^{o8}$. A^{o42} . $R^{o.83}$. $Y_2^{o.68}$. 40

Then we can say that 1 per cent increase in price leads to 0.8 per cent change in quantum of sales and so on.

If we take logarithmic form of the multiple equation, we can write the equation in an additive form as follows:

$$\log QS = a \log P + b \log A + c \log R + d \log Y_d + \log u$$

In the above equation, the coefficients a, b, c, and d represent the elasticities of variables P, A, R and Y_d respectively.

The co-efficient in the logarithmic regression equation are very useful in policy decision making by the management.

(iv) Econometric Models:

Econometric models are an extension of the regression technique whereby a system of independent regression equation is solved. The requirement for satisfactory use of the econometric model in forecasting is under three heads: variables, equations and data.

The appropriate procedure in forecasting by econometric methods is model building. Econometrics attempts to express economic theories in mathematical terms in such a way that they can be verified by statistical methods and to measure the impact of one economic variable upon another so as to be able to predict future events.

Utility of Forecasting:

Forecasting reduces the risk associated with business fluctuations which generally produce harmful effects in business, create unemployment, induce speculation, discourage capital formation and reduce the profit margin. Forecasting is indispensable and it plays a very important part in the determination of various policies. In modem times forecasting has been put on scientific footing so that the risks associated with it have been considerably minimised and the chances of precision increased.

Forecasts in India:

In most of the advanced countries there are specialised agencies. In India businessmen are not at all interested in making scientific forecasts. They depend more on chance, luck and astrology. They are highly superstitious and hence their forecasts are not correct. Sufficient data are not available to make reliable forescasts. However, statistics alone do not forecast future conditions. Judgment, experience and knowledge of the particular trade are also necessary to make proper analysis and interpretation and to arrive at sound conclusions.

Conclusion:

Decision support systems consist of three elements: decision, prediction and control. It is, of course, with prediction that marketing forecasting is concerned. The forecasting of sales can be regarded as a system, having inputs apprises and an output.

This simplistic view serves as a useful measure for the analysis of the true worth of sales forecasting as an aid to management. In spite of all these no one can predict future economic activity with certainty. Forecasts are estimates about which no one can be sure.

Criteria of a Good Forecasting Method:

There are thus, a good many ways to make a guess about future sales. They show contrast in cost, flexibility and the adequate skills and sophistication. Therefore, there is a problem of choosing the best method for a particular demand situation.

There are certain economic criteria of broader applicability. They are:

(i) Accuracy, (ii) Plausibility, (iii) Durability, (iv) Flexibility, (v) Availability, (vi) Economy, (vii) Simplicity and (viii) Consistency.

(i) Accuracy:

The forecast obtained must be accurate. How is an accurate forecast possible? To obtain an accurate forecast, it is essential to check the accuracy of past forecasts against present performance and of present forecasts against future performance. Accuracy cannot be tested by precise measurement but buy judgment.

(ii) Plausibility:

The executive should have good understanding of the technique chosen and they should have confidence in the techniques used. Understanding is also needed for a proper interpretation of results. Plausibility requirements can often improve the accuracy of results.

(iii) Durability:

Unfortunately, a demand function fitted to past experience may back cost very greatly and still fall apart in a short time as a forecaster. The durability of the forecasting power of a demand function depends partly on the reasonableness and simplicity of functions fitted, but primarily on the stability of the understanding relationships measured in the past. Of course, the importance of durability determines the allowable cost of the forecast.

(iv) Flexibility:

Flexibility can be viewed as an alternative to generality. A long lasting function could be set up in terms of basic natural forces and human motives. Even though fundamental, it would nevertheless be hard to measure and thus not very useful. A set of variables whose co-efficient could be adjusted from time to time to meet changing conditions in more practical way to maintain intact the routine procedure of forecasting.

(v) Availability:

Immediate availability of data is a vital requirement and the search for reasonable approximations to relevance in late data is a constant strain on the forecasters patience. The techniques employed should be able to produce meaningful results quickly. Delay in result will adversely affect the managerial decisions.

(vi) Economy:

Cost is a primary consideration which should be weighted against the importance of the forecasts to the business operations. A question may arise: How much money and managerial effort should be allocated to obtain a high level of forecasting accuracy? The criterion here is the economic consideration.

(vii) Simplicity:

Statistical and econometric models are certainly useful but they are intolerably complex. To those executives who have a fear of mathematics, these methods would appear to be Latin or Greek. The procedure should, therefore, be simple and easy so that the management may appreciate and understand why it has been adopted by the forecaster.

(viii) Consistency:

The forecaster has to deal with various components which are independent. If he does not make an adjustment in one component to bring it in line with a forecast of another, he would achieve a whole which would appear consistent.

Conclusion:

In fine, the ideal forecasting method is one that yields returns over cost with accuracy, seems reasonable, can be formalised for reasonably long periods, can meet new circumstances adeptly and can give up-to-date results. The method of forecasting is not the same for all products.

There is no unique method for forecasting the sale of any commodity. The forecaster may try one or the other method depending upon his objective, data availability, the urgency with which forecasts are needed, resources he intends to devote to this work and type of commodity whose demand he wants to forecast.

Forecasting Tools: Short term tools (Moving average and Exponential smoothing methods) Long-term forecasting Tools (Time series analysis, Econometrics methods) Qualitative tools (Buying Intention Survey, Sales Force Opinion and Delphi Techniques)

Demand Forecasting

Provided by SME.com.ph

What is a demand forecast?

Demand forecasting is the method of projecting customer demand for a good or service. This process is a continual one where managers use historical data to calculate what they expect the sales demand for a good or service to be. Bob uses information from the company's past and adds it to economic data from the marketplace to see if sales will grow or decline. Bob uses the results of demand forecasting to set goals for the sales department, while trying to keep in line with company goals. Bob will be able to evaluate the results of the sales department next year to determine how his forecast came out.

Bob can use different techniques that are both qualitative and quantitative to determine the growth or decline of sales. Examples of qualitative techniques include:

- Educated guesses
- Prediction market
- Game theory
- Delphi technique

Examples of quantitative techniques include:

- Extrapolation
- Data mining
- Causal models
- Box-Jenkins models

The above listed examples of demand forecasting techniques are only a short list of the possibilities available to Bob as he practices demand forecasting. This lesson will focus on two additional quantitative techniques that are simple to use and provide an objective, accurate forecast.

A demand forecast is the prediction of what will happen to your company's existing product sales. It would be best to determine the demand forecast using a multi-functional approach. The inputs from sales and marketing, finance, and production should be considered. The final demand forecast is the consensus of all participating managers. You may also want to put up a Sales and Operations Planning group composed of representatives from the different departments that will be tasked to prepare the demand forecast.

Determination of the demand forecasts is done through the following steps:

- Determine the use of the forecast
- Select the items to be forecast
- Determine the time horizon of the forecast
- Select the forecasting model(s)
- Gather the data
- Make the forecast
- Validate and implement results

The time horizon of the forecast is classified as follows:

Description	**Forecast Horizon**		
Short-range	**Medium-range**	**Long-range**	
Duration	Usually less than 3 months, maximum of 1 year	3 months to 3 years	More than 3 years
Applicability	Job scheduling, worker assignments	Sales and production planning, budgeting	New product development, facilities planning

How is demand forecast determined?

There are two approaches to determine demand forecast – (1) the qualitative approach, (2) the quantitative approach. The comparison of these two approaches is shown below:

Description	Qualitative Approach	Quantitative Approach
Applicability	Used when situation is vague & little data exist (e.g., new products and technologies)	Used when situation is stable & historical data exist (e.g. existing products, current technology)
Considerations	Involves intuition and experience	Involves mathematical techniques
Techniques	Jury of executive opinion Sales force composite Delphi method Consumer market survey	Time series models Causal models

Qualitative Forecasting Methods

Your company may wish to try any of the qualitative forecasting methods below if you do not have historical data on your products' sales.

Qualitative Method	Description
Jury of executive opinion	The opinions of a small group of high-level managers are pooled and together they estimate demand. The group uses their managerial experience, and in some cases, combines the results of statistical models.
Sales force composite	Each salesperson (for example for a territorial coverage) is asked to project their sales. Since the salesperson is the one closest to the marketplace, he has the capacity to know what the customer wants. These projections are then combined at the municipal, provincial and regional levels.
Delphi method	A panel of experts is identified where an expert could be a decision maker, an ordinary employee, or an industry expert. Each of them will be asked individually for their estimate of the demand. An iterative process is conducted until the experts have reached a consensus.
Consumer market survey	The customers are asked about their purchasing plans and their projected buying behavior. A large number of respondents is needed here to be able to generalize certain results.

Quantitative Forecasting Methods

There are two forecasting models here – (1) the time series model and (2) the causal model. A time series is a s et of evenly spaced numerical data and is o btained by observing responses at regular time periods. In the **time series model** , the forecast is based only on past values and assumes that factors that influence the past, the present and the future sales of your products will continue.

On the other hand, t he **causal model** uses a mathematical technique known as the regression analysis that relates a dependent variable (for example, demand) to an independent variable (for example, price, advertisement, etc.) in the form of a linear equation. The time series forecasting methods are described below:

Time Series Forecasting Method	**Description**
Naïve Approach	Assumes that demand in the ***next*** period is the same as demand in ***most recent*** period; demand pattern may not always be that stable For example: **If July sales were 50, then Augusts sales will also be 50**

Time Series Forecasting Method	**Description**
Moving Averages (MA)	MA is a series of arithmetic means and is used if little or no trend is present in the data; provides an overall impression of data over time A **simple moving average** uses average demand for a fixed sequence of periods and is good for stable demand with no pronounced behavioral patterns. Equation: **F 4 = [D 1 + D2 + D3] / 4** F – forecast, D – Demand, No. – Period **(see illustrative example – simple moving average)** A **weighted moving average** adjusts the moving average method to reflect fluctuations more closely by assigning weights to the most recent data, meaning, that the older data is usually less important. The weights are based on intuition and lie between 0 and 1 for a total of 1.0 Equation: **WMA 4 = (W) (D3) + (W) (D2) + (W) (D1)** WMA – Weighted moving average, W – Weight, D – Demand, No. – Period

	(see illustrative example – weighted moving average)
Exponential Smoothing	The **exponential smoothing** is an averaging method that reacts more strongly to recent changes in demand by assigning a smoothing constant to the most recent data more strongly; useful if recent changes in data are the results of actual change (e.g., seasonal pattern) instead of just random fluctuations F t + 1 = a D t + (1 - a) F t Where F t + 1 = the forecast for the next period D t = actual demand in the present period F t = the previously determined forecast for the present period • = a weighting factor referred to as the **smoothing constant** **(see illustrative example – exponential smoothing)**
Time Series Decomposition	The **time series decomposition** adjusts the seasonality by multiplying the normal forecast by a seasonal factor **(see illustrative example – time series decomposition)**

QUALITATIVE ANALYSIS

Qualitative analysis, an intuitive judgmental approach to forecasting, can be useful if it allows for the systematic collection and organization of data derived from unbiased, informed opinion. However, qualitative methods can produce biased results when specific individuals dominate the forecasting process through reputation, force of personality, or strategic position within the organization.

Expert Opinion

The most basic form of qualitative analysis forecasting is **personal insight**, in which an informed individual uses personal or company experience as a basis for developing future expectations. Although this approach is subjective, the reasoned judgment of informed individuals often provides valuable insight. When the informed opinion of several individuals is relied on, the approach is called forecasting through **panel consensus**. The panel consensus method assumes that several experts can arrive at forecasts that are superior to those that individuals generate. Direct interaction among experts can help ensure that resulting forecasts embody all available objective and subjective information.

Although the panel consensus method often results in forecasts that embody the collective wisdom of consulted experts, it can be unfavorably affected by the forceful personality of one or a few key individuals. Arelated approach, the **delphi method**, has been developed to counter this disadvantage. In the delphi method, members of a panel of experts individually receive a series of questions relating to the underlying forecasting problem. Responses are analyzed by an independent party, who then tries to elicit a consensus opinion by providing feedback to panel members in a manner that prevents direct identification of individual positions. This method helps limit the steamroller or bandwagon problems of the basic panel consensus approach.

Survey Techniques

Survey techniques that skillfully use interviews or mailed questionnaires are an important forecasting tool, especially for short-term projection. Designing surveys that provide unbiased and reliable information is a challenging task. When properly carried out, however, survey research can provide managers with valuable information that would otherwise be unobtainable. Surveys generally use interviews or mailed questionnaires that ask firms, government agencies, and individuals about their future plans. Businesses plan and budget virtually all their expenditures in advance of actual purchase or production decisions. Surveys asking about capital budgets, sales budgets, and operating budgets can thus provide useful forecast information. Government departments that prepare formal budgets also provide a wealth of information to the forecaster. Finally, because individual consumers routinely plan expenditures for such major items as automobiles, furniture, housing, vacations, and education, surveys of consumer intentions often accurately predict future spending on consumer goods.

Survey information may be all that is available in certain forecasting situations, as, for example, when a firm is attempting to project new product demand. Although surveys sometimes serve as an alternative to quantitative forecasting techniques, they frequently supplement rather than replace quantitative analysis. Their value stems from two influences. First, a nonquantifiable psychological element is inherent in most economic behavior; surveys and other qualitative methods are especially well suited to picking up this phenomenon. Second, quantitative models generally assume stable consumer tastes. If tastes are actually changing, survey data can suggest the nature and direction of such changes

Moving average and Exponential smoothing methods

Simple Moving Average Method

When demand for a product is neither growing nor declining rapidly, and if it does not have seasonal characteristics, a moving average can be useful can be useful in removing the random fluctuations for forecasting. Although moving averages are frequently centered, it is more convenient to use past data to predict the following period directly. To illustrate, a centered five-month average of January, February, March, April and May gives an average centered on March. However, all five months of data must already exist. If our objective is to forecast for June, we must project our moving average- by some means- from March to June. If the average is not centered but is at forward end, we can forecast more easily, through we may lose some accuracy. Thus, if we want to forecast June with a five-month moving average, we can take the average of January, February, March, April and May. When June passes, the forecast for July would be the average of February, March, April, May and June.

Although it is important to select the best period for the moving average, there are several conflicting effects of different period lengths. The longer the moving average period, the more the random elements are smoothed (which may be desirable in many cases). But if there is a trend in the data-either increasing or decreasing-the moving average has the adverse characteristic of lagging the trend. Therefore, while a shorter time span produces more oscillation, there is a closer following of the trend. Conversely, a longer time span gives a smoother response but lags the trend.

The formula for a *simple moving average is* $= (n1 + n2 + n3 + ...) / n$

Characteristics of moving averages

a. The different moving averages produce different forecasts.

b. The greater the number of periods in the moving average, the greater the smoothing effect.

c. If the underlying trend of the past data is thought to be fairly constant with substantial randomness, then a greater number of periods should be chosen.

d. Alternatively, if there is though to be some change in the underlying state of the data, more responsiveness is needed, therefore fewer periods should be included in the moving average.

Limitations of moving averages

a. Equal weighting is given to each of the values used in the moving average calculation, whereas it is reasonable to suppose that the most recent data is more relevant to current conditions.

b. An n period moving average requires the storage of $n - 1$ values to which is added the latest observation. This may not seem much of a limitation when only a few items are considered, but it becomes a significant factor when , for example, a company carries 25,000 stock items each of which requires a moving average calculation involving say 6 months usage data to be recorded.

c. The moving average calculation takes no account of data outside the period of average, so full use is not made of all the data available.

d. The use of the unadjusted moving average as a forecast can cause misleading results when there is an underlying seasonal variation

Exponential Smoothing

In the previous methods of forecasting (simple and weighted moving average), the major drawback is the need to continually carry a large amount of historical data. (This is also true for regression analysis techniques, which we soon will cover) As each new piece of data is added in these methods, the oldest observation is dropped, and the new forecast is calculated. In many applications (perhaps in most), the most recent occurrences are more indicative of the future than those in the more distant past. If this premise is valid – "that the importance of data diminishes as the past becomes more distant" - then exponential smoothing may be the most logical and easiest method to use.

The reason this is called exponential smoothing is that each increment in the past is decreased by (1-α). If α is 0.05 for example, weights for various period would be as follows (α is defined below):

Weighting at α = 0.05

Most recent weighting = $\alpha (1-\alpha)^0$ 0.0500

Data one time period older = $\alpha (1-\alpha)^1$ 0.0475

Data two time periods older = $\alpha (1-\alpha)^2$ 0.0451

Data three time periods older = $\alpha (1-\alpha)^3$ 0.0429

Therefore, the exponents 0, 1, 2, 3 and so on give it its name.

The method involves the automatic weighting of past data with weights that decrease exponentially with time, i.e. the most current values receive a decreasing weighting.

The exponential smoothing technique is a weighted moving average system and the underlying principle is that the

New Forecast = Old Forecast + a proportion of the forecast error

The simplest formula is

New forecast = Old forecast + α (Latest Observation – Old Forecast)

where α (alpha) is the smoothing constant.

Or more mathematically,

$$F_t = F_{t-1} + \alpha (A_{t-1} - F_{t-1})$$

i.e $F_t = \alpha A_{t-1} + (1-\alpha) F_{t-1}$

Where

F_t = The exponentially smoothed forecast for period t

F_{t-1} = The exponentially smoothed forecast made for the prior period

A_{t-1} = The actual demand in the prior period

α = The desired response rate, or smoothing constant

The smoothing constant

The value of α can be between 0 and 1. The higher value of α (i.e. the nearer to 1), the more sensitive the forecast becomes to current conditions, whereas the lower the value, the more stable the forecast will be, i.e. it will react less sensitively to current conditions. An approximate equivalent of alpha values to the number of periods' moving average is given below:

α value	*Approximate periods in equivalent Moving average*
0.1	19
0.25	7
0.33	5
0.5	3

The total of the weights of observations contributing to the new forecast is 1 and the weight reduces exponentially progressively from the alpha value for the latest observation to smaller value for the older observations. For example, if the alpha value was 0.3 and June's sales were being forecast, then June's forecast is produced from averaging past sales weighted as follows.

0.3 (May's Sales) + 0.21 (April's Sales) + 0.147 (March's Sales)
+ 0.1029 (February Sales) + 0.072 (January Sales)
+ 0.050 (December Sales), etc.

In the above calculation, the reader will observe that $\alpha(1-\alpha)^0 = 0.3$, $\alpha(1-\alpha)^1 = 0.21$, $\alpha(1-\alpha)^2 = 0.147$
$\alpha(1-\alpha)^3 = 0.1029$ and so on.

From this it will be noted that the weightings calculated approach a total of 1.

Exponential smoothing is the most used of all forecasting techniques. It is an integral part of virtually all computerized forecasting programs, and it is widely used in ordering inventory in retail firms, wholesale companies, and service agencies.

Exponential smoothing techniques have become well accepted for six major reasons:

1. Exponential models are surprisingly accurate
2. Formulating an exponential model is relatively easy
3. The user can understand how the model works
4. Little computation is required to use the model
5. Computer storage requirement are small because of the limited use of historical data
6. Tests for accuracy as to how well the model is performing are easy to compute

In the exponential smoothing method, only three pieces of data are needed to forecast the future: the most recent forecast, the actual demand that occurred for that forecast period and a **smoothing constant alpha (α).** This smoothing constant determines the level of smoothing and the speed of reaction to differences between forecasts and actual occurrences. The value for the constant is determined both by the nature of the product and by the manager's sense of what constitutes a good response rate. For example, if a firm produced a standard item with relatively stable demand, the reaction rate to difference between actual and forecast demand would tend to be
small, perhaps just 5 or 10 percentage points. However, if the firm were experiencing growth, it would be desirable to have a higher reaction rate, perhaps 15 to 30 percentage points, to give greater importance to recent growth experience. The more rapid the growth, the higher the reaction rate should be. Sometimes users of the simple moving average switch to exponential smoothing but like to keep the forecasts about the same as the simple moving average. In this case, α is approximated by 2 ÷ (n+1), where n is the number of time periods.

To demonstrate the method once again, assume that the long-run demand for the product under study is relatively stable and a smoothing constant (α) of 0.05 is considered appropriate. If the exponential method were used as a continuing policy, forecast would have been made for last month. Assume that last month's forecast (F_{t-1}) was 1,050 units. If 1,000 actually were demanded, rather than 1,050, the forecast for this month would be

$F_t = F_{t-1} + a(A_{t-1} - F_{t-1})$
= 1,050 + 0.05 (1,000 – 1,050)
= 1,050 + 0.05 (-50)
= 1,047.5 units

Because the smoothing coefficient is small, the reaction of the new forecast to an error of 50 units is to decrease the next month's forecast by only 2.5 units.

Extensions of exponential smoothing

The basic principle of exponential smoothing has been outlined above, but to cope with various problem such as seasonal factors strongly, rising or failing demand, etc many developments to the basic model have been made. These include double and triple exponential smoothing and correction for trend and delay factors, etc. These are outside the scope of the present book, so are not covered.

Characteristics of exponential smoothing

a) Greater weight is given to more recent data

b) All past data are incorporated there is no cut-off point as with moving averages

c) Less data needs to be stored than with the longer period moving averages.

d) Like moving averages it is an adaptive forecasting system. That is, it adapts continually as new data becomes available and so it is frequently incorporated as an integral part of stock control and production control systems.

e) To cope with various problems (trend, seasonal factors, etc) the basic model needs to be modified

f) Whatever form of exponential smoothing is adopted, changes to the model to suit changing conditions can simply be made by altering the α value.

g) The selection of the smoothing constant α is done through trial-error by the researcher/analyst. It is done by testing several values of α (within the range 0 to 1) and selecting one which gives a forecast with the least error (one can take standard error). It has been found that values in the range 0.1 to 0.3 provide a good starting point

Moving Average Formula

A **moving average** is a technique that calculates the overall trend in a data set. In operations management, the data set is sales volume from historical data of the company. This technique is very useful for forecasting short-term trends. It is simply the average of a select set of time periods. It's called 'moving' because as a new demand number is calculated for an upcoming time period, the oldest number in the set falls off, keeping the time period locked. Let's look at an example of how the sales manager at ABC Inc. will forecast demand using the moving average formula. The formula is illustrated as follows:

Moving Average = (n1 + n2 + n3 + ...) / n

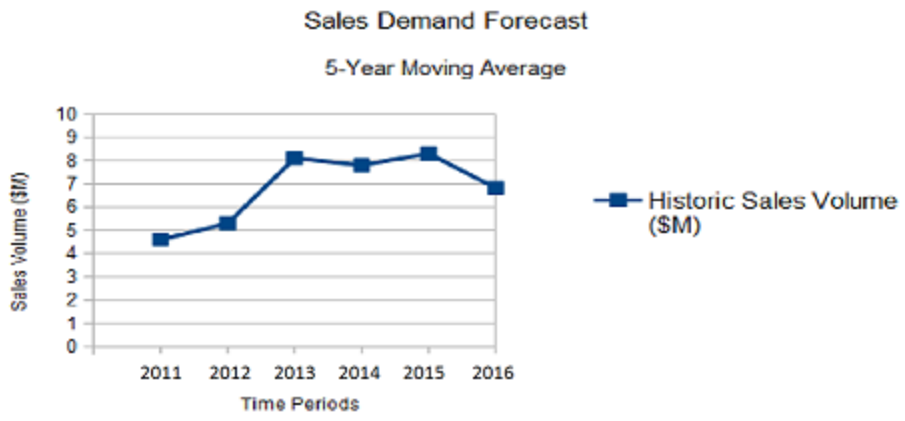
Where n = the number of time periods in the data set. The sum of the first time period and all additional time periods chosen is divided by the number of time periods. Bob decides to create his demand forecast based on a 5-year moving average. This means that he will use the sales volume data from the past 5 years as the data for the calculation.

Year	Sales Volume ($M)
2011	4.6
2012	5.3
2013	8.1
2014	7.8
2015	8.3

Moving Average n=5 = (4.6 + 5.3 + 8.1 + 7.8 + 8.3) / 5	6.82

The sales manager forecasts the sales demand for 2016 to be approximately $6.82 million. To forecast the sales demand for 2017 still using the 5-year moving average, simply drop off 2011 and add 2016.

Year	Sales Volume ($M)
2012	5.3
2013	8.1
2014	7.8
2015	8.3
2016	6.82



Short term tools (Moving average and Exponential smoothing methods)

EXPONENTIAL SMOOTHING TECHNIQUES

Awide variety of statistical forecasting techniques can be used to predict unit sales growth, revenue, costs, and profit performance. These techniques range from quite simple to very sophisticated.

Exponential Smoothing Concept

Exponential smoothing is a method for forecasting trends in unit sales, unit costs, wage expenses, and so on. The technique identifies historical patterns of trend or seasonality in the data and then extrapolates these patterns forward into the forecast period. Its accuracy depends

on the degree to which established patterns of change are apparent and constant over time. The more regular the pattern of change in any given data series, the easier it is to forecast. Exponential smoothing (or “averaging”) techniques are among the most widely used forecasting methods in business.

All leading methods of exponential smoothing involve the same essential process of data averaging. The data series to be forecast is assumed to be modeled by one, two, or three essential components. Key components represent the level, trend, or seasonality of the data being forecast. The level of the time series to be forecast is the average about which it fluctuates. This level may be constant or slowly changing. Trend is any systematic change in the level of the time series of data. If a given forecast model includes a trend, then that trend is either projected as a straight line into the future or as a gradually diminishing amount that eventually dies out. The seasonality of a time series is a pattern of change tied to weather, custom, or tradition. Retail sales typically exhibit a strong seasonal trend over the course of the year. Many stores book 30 percent or more of annual sales during the busy Christmas selling season. Seasonal components can be additive, meaning that seasonal patterns remain constant over time, or multiplicative, meaning that seasonal patterns grow with the average level of the series. Figure shows nine common profiles of data that can be forecast by using popular exponential smoothing techniques. They range in complexity from the constant level of data shown in Figure to the more complex dampened trend with a multiplicative seasonal influence shown in Figure. To ensure that the correct exponential smoothing technique is chosen, a method with sufficient flexibility to conform to the underlying data must be used. A good first step in the exponential smoothing process is to graph the data series to be forecast and then choose the exponential smoothing method that best resembles the data.

One-Parameter (Simple) Exponential Smoothing

In **one-parameter (simple) exponential smoothing**, the sole regular component is the level of the forecast data series. It is implicitly assumed that the data consist of irregular fluctuations around a constant or very slowly changing level. Simple exponential smoothing is appropriate for forecasting sales in mature markets with stable activity; it is inappropriate for forecasting in markets that are growing rapidly or are seasonal.

In the simple exponential smoothing model, each smoothed estimate of a given level is computed as a weighted average of the current observation and past data. Each weight decreases in an exponential pattern. The rate of decrease in the influence of past levels depends on the size of the smoothing parameter that controls the model’s relative sensitivity to newer versus older data. The larger the value of the smoothing parameter, the more emphasis is placed on recent versus distant observations. However, if the smoothing parameter is very small, then a large number of data points receive nearly equal weights. In this case, the forecast model displays a long “memory” of past values.

Two-Parameter (Holt) Exponential Smoothing

Simple exponential smoothing is not appropriate for forecasting data that exhibit extended trends. In **two-parameter (Holt) exponential smoothing**, the data are assumed to consist of fluctuations about a level that is changing with some constant or slowly drifting linear trend. Two-parameter exponential smoothing is often called the Holt method, after its originator C. C. Holt.3 Two-parameter exponential smoothing is appropriate for forecasting sales in established markets with stable growth; it is inappropriate in either stable or rapidly growing markets.

Nine Common Trends in Economic Time Series Can Be Forecast by Using Exponential Smoothing Methods

Holt's exponential smoothing model uses a smoothed estimate of the trend component as well as the level component to produce forecasts. In the two-parameter exponential smoothing forecast equation, the current smoothed level is added to a linear trend to forecast future values. The updated value of the smoothed level is computed as the weighted average of new data and the best estimate of the new level based on old data. The Holt method combines old and new estimates of the one-period change of the smoothed level, thus defining the current linear or local trend.

Three-Parameter (Winters) Exponential Smoothing

The **three-parameter (Winters) exponential smoothing** method extends the two-parameter technique by including a smoothed multiplicative index to account for the seasonal behavior of the forecast series. The three-parameter exponential smoothing technique is often called the Winters method, after its originator P. R. Winters.4 Because much economic data involve both growth trend and seasonal considerations, three-parameter exponential smoothing is one of the most commonly used forecasting methods. It is best suited for forecasting problems that involve rapid and/or changing rates of growth combined with seasonal influences. Threeparameter exponential smoothing is suitable for forecasting sales in both rapidly growing markets and in rapidly decaying markets with seasonal influences.

Winters' three-parameter exponential smoothing model assumes that each observation is the product of a deseasonalized value and a seasonal index for that particular month or quarter. The deseasonalized values are assumed to be described by the Holt model. The Winters model involves three smoothing parameters to be used in level, trend, and seasonal index smoothing equations. The Winters model forecast is computed similarly to the Holt model forecast and then multiplied by the seasonal index for the current period. Smoothing in the Winters model is similar to the Holt model, except that in the Winters model the measurement of level is deseasonalized through dividing by the seasonal index calculated one year before. The trend smoothing equations of the two models are identical. The seasonal index is estimated as the ratio of the current observation to the current smoothed level, averaged with the previous value for that particular period.

Practical Use of Exponential Smoothing

The important point to remember about exponential smoothing, or any forecast method, is that the choice of an appropriate forecasting technique depends on the pattern data that is to be forecast.

As a case in point, Figure shows a typical pattern of sales for the life cycle of a product. Product life cycles often progress from the introduction point, to rapid growth and market penetration, to a mature phase of sales stability, to periods of declining market share and abandonment. Over this life cycle, different methods of sales forecasting may be appropriate.

In the initial phase, and before the generation of significant market data, qualitative analyses and market experiments are highly appropriate. Once the product has been launched and is rapidly gaining market acceptance, in phase II, three-parameter exponential smoothing methods that involve level, trend, and seasonal components become relevant. In the mature phase of sales stability, phase III, two-parameter exponential smoothing models (or econometric models) that incorporate level and seasonal components are suitable. In the fourth and final phase of declining market share and abandonment, three-parameter exponential smoothing methods that involve level, trend, and seasonal components again become relevant.

Long-term forecasting Tools (Time series analysis, Econometrics methods)

Time-Series Methods

In many forecasting situations enough historical consumption data are available. The data may relate to the past periodic sales of products, demands placed on services like transportation, electricity and telephones. There are available to the forecaster a large number of methods, popularly known as the time series methods, which carry out a statistical analysis of past data to develop forecasts for the future. The underlying assumption here is that past relationships will continue to hold in the future. The different methods differ primarily in the manner in which the past values are related to the forecasted ones.

A time series refers to the past recorded values of the variables under consideration. The values of the variables under consideration in a time-series are measured at specified intervals of time. These intervals may be minutes, hours, days, weeks, months, etc. In the analysis of a time series the following four time-related factors are important.

1) **Trends:** These relate to the long-term persistent movements/tendencies/changes in data like price increases, population growth, and decline in market shares. An example of a decreasing linear trend is shown in Fig. 6.2

(2) **Seasonal variations:** There could be periodic, repetitive variations in time-series which occur because of buying or consuming patterns and social habits, during different times of a year. The demand for products like soft drinks, woolens and refrigerators, also exhibits seasonal variations. An illustration of seasonal variations is provided in Fig. 6.3

(3) Cyclical variations: These refer to the variations in time series which arise out of the phenomenon of business cycles. The business cycle refers to the periods of expansion followed by periods of contraction.

The period of a business cycle may vary from one year to thirty years. The duration and the level of resulting demand variation due to business cycles are quite difficult to predict.

(4) Random or irregular variations: These refer to the erratic fluctuations in the data which cannot be attributed to the trend, seasonal or cyclical factors. In many cases, the root cause of these variations can be isolated only after a detailed analysis of the data and the accompanying explanations, if any. Such variations can be due to a wide variety of factors like sudden weather changes, strike or a communal clash. Since these are truly random in nature, their future occurrence and the resulting impact on demand are difficult to predict. The effect of these events can be eliminated by smoothing the time series data. A graphical example of the random variations is given in Fig. 6.4.

The historical time series, as obtained from the past records, contains all the four factors described earlier. One of the major tasks is to isolate each of the components, as elegantly as possible. This process of desegregating the time series is called ***decomposition***. The main objective here is to isolate the trend in time series by eliminating the other components. The trend line can then be used for projecting into the future. The effect of the other components on the forecast can be brought about by adding the corresponding cyclical, seasonal and irregular variations.

In most short-term forecasting situations the elimination of the cyclical component is not attempted. Also, it is assumed that the irregular variations are small and tend to cancel each other out over time. Thus, the major objective, in most cases, is to seek the removal of seasonal variations from the time series. This process is known as ***deseasonalization*** of the time series data.

There are a number of time-series-based methods. Not all of them involve explicit decomposition of the data. The methods extend from mathematically very simple to fairly complicated ones.

Let us also see some of the time series models are based on the trend lines of the data.

The *constant-level models* assume no trend at all in the data. The time series is assumed to have a relatively constant mean. The forecast for any period in the future is a horizontal line.

Linear trend models forecast a straight-line trend for any period in the future. Refer Fig. 6.2

Exponential trends forecast that the amount of growth will increase continuously. At long horizons, these trends become unrealistic. Thus models with a damped trend have been developed for longer-range forecasting. The amount of trend extrapolated declines each period in a damped trend model. Eventually, the trend dies out and the forecasts become a horizontal line. Refer Fig 6.2

The additive seasonal pattern assumes that the seasonal fluctuations are of constant size.

Time

Demand

150

***The multiplicative pattern* assumes that the seasonal fluctuations are proportional to the data. As the trend increases, the seasonal fluctuations get larger. Refer Fig 6.3**

What is Time Series Forecasting?

Time series forecasting methods produce forecasts based solely on historical values. Time series forecasting methods are widely used in business situations where forecasts of a year or less are required. The time series techniques used in ezForecaster are particularly suited to Sales, Marketing, Finance, and Production planning. Time series methods have the advantage of relative simplicity, but certain factors need to be considered:

Time series methods are better suited to short-term forecasts (i.e., less than a year).

Time series forecasting relies on sufficient past data being available and that the data is of a high quality and truly representative.

Time series methods are best suited to relatively stable situations. Where substantial fluctuations are common and underlying conditions are subject to extreme change, then time series methods may give relatively poor results.

Classically, researchers approach the problem of modeling a time series by identifying four kinds of change. These four components are known as the Trend, Cyclical Fluctuation, Seasonality and Residual Effect.

The **Trend** is the increase or decrease in the series over a long period of time. For this reason is also known as the long-term trend.

The **Cyclical Fluctuation** or (**Cyclicity**) is the wavelike up and down fluctuations about the trend that is attributable to economic or business conditions. This fluctuation is also known as business cycle. During economic expansion, the cycle lies above the trend; during a downturn, beneath it.

The **Seasonality** or (**Seasonal Variation**) in a time series is the fluctuation that occurs each month, each year etc. Seasonal variations tend to be repeated from year to year.

Lastly, the **Residual Effect** is what remains, having removed the Trend, Cyclical and Seasonal components of a time series. It represents the random error effect of a time series, caused by events as widespread as wars, hurricanes, strikes and randomness of human actions.

Forecasting is not an exact science. Often the four components are difficult to discern. For this reason, ezForecaster offers a variety of forecasting techniques, ranging from simple methods through sophisticated state-of-the-art techniques.

ECONOMETRIC METHODS

Econometric methods combine economic theory with statistical tools to analyze economic relations. Econometric forecasting techniques have several advantages over alternative methods.

Advantages of Econometric Methods

Econometric methods force the forecaster to make explicit assumptions about the linkages among the variables in the economic system being examined. In other words, the forecaster must deal with causal relations. This produces logical consistency in the forecast model and increases reliability.

Another advantage of econometric methods is that the forecaster can compare forecasts with actual results and use insights gained to improve the forecast model. By feeding past forecasting errors back into the model, new parameter estimates can be generated to improve future forecasting results. The type of output provided by econometric forecasts is another major advantage. Because econometric models offer estimates of actual values for forecasted variables, these models indicate both the direction and magnitude of change. Finally, perhaps the most important advantage of econometric models relates to their ability to explain economic phenomena.

The Appropriate Forecast Technique Tends to Vary over the Life Cycle of a Product

Single-Equation Models

Many managerial forecasting problems can be adequately addressed with single-equation econometric models. The first step in developing an econometric model is to express relevant economic relations in the form of an equation. When constructing a model for forecasting the regional demand for portable personal computers, one might hypothesize that computer demand (C) is determined by price (P), disposable income (I), population (Pop), interest rates (i), and advertising expenditures (A). Alinear model expressing this relation is

The next step in econometric modeling is to estimate the parameters of the system, or values of the coefficients, as in Equation 6.10. The most frequently used technique for parameter estimation is the application of least squares regression analysis with either time-series or cross-section data. Once the model coefficients have been estimated, forecasting with a single-equation model consists of evaluating the equation with specific values for the independent variables. An econometric model used for forecasting purposes must contain independent or explanatory variables whose values for the forecast period can be readily obtained.

Multiple-Equation Systems

Although forecasting problems can often be analyzed with a single-equation model, complex relations among economic variables sometimes require use of multiple-equation systems. Variables whose values are determined within such a model are endogenous, meaning originating from within; those determined outside, or external to, the system are referred to as exogenous. The values of endogenous variables are determined by the model; the values of exogenous variables are given externally. Endogenous variables are equivalent to the dependent variable in a single-equation system; exogenous and predetermined variables are equivalent to the independent variables.

Multiple-equation econometric models are composed of two basic kinds of expressions, identities and behavioral equations. **Identities** express relations that are true by definition. The statement that profits (π) equal total revenue (TR) minus total cost (TC) is an example of an identity:

Profits are defined by the relation expressed in Equation.

The second group of equations encountered in econometric models, **behavioral equations**, reflects hypotheses about how variables in a system interact with each other. Behavioral equations may indicate how individuals and institutions are expected to react to various stimuli. Perhaps the easiest way to illustrate the use of multiple-equation systems is to examine a simple three-equation forecast model for equipment and related software sales for a personal computer retailer. As you recall, Equation expressed a single-equation model that might be used to forecast regional demand for personal computers. However, total revenues for a typical retailer usually include not only sales of personal computers but also sales of software programs (including computer games) and sales of peripheral equipment (e.g., monitors, printers). Although actual econometric models used to forecast total sales revenue from these items might include several equations and many variables, the simple system described in this section should suffice to provide insight into the multiple-equation approach without being overly complex. The three equations are

where S is software sales, TR is total revenue, P is peripheral sales, C is personal computer sales, t is the current time period, t – 1 is the previous time period, and u1 and u2 are error, or residual, terms.

Equations are behavioral hypotheses. Equation hypothesizes that currentperiod software sales are a function of the current level of total revenues; Equation hypothesizes that peripheral sales depend on previous-period personal computer sales. The last equation in the system, Equation, is an identity. It defines total revenue as being the sum of software, peripheral equipment, and personal computer sales. Stochastic disturbance terms in the behavioral equations, u1 and u2, are included because hypothesized relations are not exact. Other factors that can affect software and peripheral sales are not accounted for in the system. So long as these stochastic elements are random and their expected values are zero, they do not present a barrier to empirical estimation of system parameters. If error terms are not randomly distributed, parameter estimates will be biased, and the reliability of model forecasts will be questionable. Large error terms, even if they are distributed randomly, reduce forecast accuracy.

To forecast next year’s software and peripheral sales and total revenue as represented by this illustrative model, it is necessary to express S, P, and TR in terms of variables whose values are known or can be estimated at the moment the forecast is generated. In other words, each endogenous variable (St, Pt, and TRt) must be expressed in terms of the exogenous and predetermined variables (Ct-1 and Ct). Such relations are called reduced-form equations because they reduce complex simultaneous relations to their most basic and simple form. Consider the manipulations of equations in the system necessary to solve for TR via its reduced-form equation.

Substituting Equation—that is, replacing St with Equation—results in5

A similar substitution of Equation for Pt produces

Collecting terms and isolating TR in Equation gives

or, alternately,

Equation now relates current total revenues to previous-period and current-period personal computer sales. Assuming that data on previous-period personal computer sales can be obtained and that current-period personal computer sales can be estimated by using Equation, Equation provides a forecasting model that accounts for the simultaneous relations expressed in this simplified multiple-equation system. In real-world situations, it is likely that personal computer sales depend on the price, quantity, and quality of available software and peripheral equipment. Then S, P, and C, along with other important factors, may all be endogenous, involving a number of relations in a complex multiple-equation system. Disentangling the important but often subtle relations involved makes forecasting with multiple-equation systems both intriguing and challenging.

What is Exponential Smoothing?

This is a very popular scheme to produce a smoothed Time Series. Whereas in Single Moving Averages the past observations are weighted equally, Exponential Smoothing assigns *exponentially decreasing weights* as the observation get older.

In other words, *recent observations are given relatively more weight in forecasting than the older observations*.

In the case of moving averages, the weights assigned to the observations are the same and are equal to $1/N$. In exponential smoothing, however, there are one or more *smoothing parameters* to be determined (or estimated) and these choices determine the weights assigned to the observations.

Single, double and triple Exponential Smoothing will be described in this section.

Single Exponential Smoothing

Exponential smoothing weights past observations with exponentially decreasing weights to

This smoothing scheme begins by setting S_2 to y_1, where S_i stands for smoothed observation or EWMA, and y stands for the original observation. The subscripts refer to the time periods, $1,2,\ldots,n$. For the third period, $S_3=\alpha y_2+(1-\alpha)S_2$; and so on. There is no S_1; the smoothed series starts with the smoothed version of the second observation.

For any time period t, the smoothed value S_t is found by

forecast future values

computing

$$S_t=\alpha y_{t-1}+(1-\alpha)S_{t-1} 0<\alpha\leq 1 t\geq 3.$$

This is the *basic equation of exponential smoothing* and the constant or parameter α is called the *smoothing constant*.

Note: There is an alternative approach to exponential smoothing that replaces y_{t-1} in the basic equation with y_t, the current observation. That formulation, due to Roberts (1959), is described in the section on EWMA control charts. The formulation here follows Hunter (1986).

Setting the first EWMA

The first forecast is very important

The initial EWMA plays an important role in computing all the subsequent EWMAs. Setting S_2 to y_1 is one method of initialization. Another way is to set it to the target of the process.

Still another possibility would be to average the first four or five observations.

It can also be shown that the smaller the value of α, the more important is the selection of the initial EWMA. The user would be wise to try a few methods, (assuming that the software has them available) before finalizing the settings.

Why is it called "Exponential"?

Expand basic equation

Let us expand the basic equation by first substituting for S_{t-1} in the basic equation to obtain

$$S_t==\alpha y_{t-1}+(1-\alpha)[\alpha y_{t-2}+(1-\alpha)S_{t-2}]\alpha y_{t-1}+\alpha(1-\alpha)y_{t-2}+(1-\alpha)^2 S_{t-2}.$$

Summation formula for basic equation

By substituting for S_{t-2}, then for S_{t-3}, and so forth, until we reach S_2 (which is just y_1), it can be shown that the expanding equation can be written as:

$$S_t=\alpha\sum_{i=1}^{t-2}(1-\alpha)^{i-1}y_{t-i}+(1-\alpha)^{t-2}S_2, t\geq 2.$$

Expanded equation for S_5

For example, the expanded equation for the smoothed value S_5 is:

$$S_5=\alpha[(1-\alpha)^0 y_{5-1}+(1-\alpha)^1 y_{5-2}+(1-\alpha)^2 y_{5-3}]+(1-\alpha)^3 S_2.$$

Illustrates exponential

This illustrates the exponential behavior. The weights, $\alpha(1-\alpha)^t$ decrease geometrically, and their sum is unity as

behavior

shown below, using a property of geometric series:

$$\alpha\sum_{i=0}^{t-1}(1-\alpha)^i=\alpha[1-(1-\alpha)^t1-(1-\alpha)]=1-(1-\alpha)^t.$$

From the last formula we can see that the summation term shows that the contribution to the smoothed value S_t becomes <u>less</u> at each consecutive time period.

Example for $\alpha=0.3$

Let $\alpha=0.3$. Observe that the weights $\alpha(1-\alpha)^t$ decrease exponentially (geometrically) with time.

		Value weight
last	y_1	0.2100
	y_2	0.1470
	y_3	0.1029
	y_4	0.0720

What is the "best" value for α?

How do you choose the weight parameter?

The speed at which the older responses are dampened (smoothed) is a function of the value of α. When α is close to 1, dampening is quick and when α is close to 0, dampening is slow. This is illustrated in the table below.

----------> towards past observations

α	$(1-\alpha)$	$(1-\alpha)^2$	$(1-\alpha)^3$	$(1-\alpha)^4$
0.9	0.1	0.01	0.001	0.0001
0.5	0.5	0.25	0.125	0.0625
0.1	0.9	0.81	0.729	0.6561

We choose the best value for α so the value which results in the smallest MSE.

Example

Let us illustrate this principle with an example. Consider the following data set consisting of 12 observations taken over time:

Time	y_t	$S(\alpha=0.1)$	Error	Error squared
1	71			
2	70	71	-1.00	1.00
3	69	70.9	-1.90	3.61
4	68	70.71	-2.71	7.34
5	64	70.44	-6.44	41.47
6	65	69.80	-4.80	23.04
7	72	69.32	2.68	7.18
8	78	69.58	8.42	70.90
9	75	70.43	4.57	20.88
10	75	70.88	4.12	16.97
11	75	71.29	3.71	13.76
12	70	71.67	-1.67	2.79

The sum of the squared errors (SSE) = 208.94. The mean of the squared errors (MSE) is the SSE /11 = 19.0.

Calculate for different values of α

The MSE was again calculated for α=0.5 and turned out to be 16.29, so in this case we would prefer an α of 0.5. Can we do better? We could apply the proven trial-and-error method. This is an iterative procedure beginning with a range of α between 0.1 and 0.9. We determine the best initial choice for α and then search between $\alpha-\Delta$ and $\alpha+\Delta$. We could repeat this perhaps one more time to find the best α to 3 decimal places.

Nonlinear optimizers can be used

But there are better search methods, such as the Marquardt procedure. This is a nonlinear optimizer that minimizes the sum of squares of residuals. In general, most well designed statistical software programs should be able to find the value of α that minimizes the MSE.

Sample plot

showing smoothed data for 2 values of α

Double Exponential Smoothing

Double exponential smoothing uses two constants and is better at handling trends

As was previously observed, Single Smoothing does not excel in following the data when there is a trend. This situation can be improved by the introduction of a second equation with a second constant, γ, which must be chosen in conjunction with α.

Here are the two equations associated with Double Exponential Smoothing.

$$S_t b_t == \alpha y_t + (1-\alpha)(S_{t-1} + b_{t-1}) \gamma(S_t - S_{t-1}) + (1-\gamma) b_{t-1} 0 \le \alpha \le 1 0 \le \gamma \le 1$$

Note that the current value of the series is used to calculate its smoothed value replacement in double exponential smoothing.

Initial Values

Several methods to choose the initial values

As in the case for single smoothing, there are a variety of schemes to set initial values for S_t and b_t in double smoothing.

S_1 is in general set to y_1. Here are three suggestions for b_1.

$$b_1 b_1 b_1 == = y_2 - y_1 13[(y_2 - y_1) + (y_3 - y_2) + (y_4 - y_3)] y_n - y_1 n - 1$$

Comments

Meaning of the smoothing equations

The first smoothing equation adjusts S_t directly for the trend of the previous period, b_{t-1}, by adding it to the last smoothed value, S_{t-1}. This helps to eliminate the lag and brings S_t to the appropriate base of the current value.

The second smoothing equation then updates the trend, which is expressed as the difference between the last two values. The equation is similar to the basic form of single smoothing, but here applied to the updating of the trend.

Non-linear optimization techniques can be used

The values for α and γ can be obtained via non-linear optimization techniques, such as the Marquardt Algorithm.

Triple Exponential Smoothing

What happens if the data show trend **and** seasonality?

To handle seasonality, we have to add a third parameter

In this case double smoothing will not work. We now introduce a third equation to take care of seasonality (sometimes called periodicity). The resulting set of equations is called the "Holt-Winters" (HW) method after the names of the inventors.

The basic equations for their method are given by:

$$S_t = \alpha \frac{y_t}{I_{t-L}} + (1-\alpha)(S_{t-1} + b_{t-1}) \quad \text{OVERALL SMOOTHING}$$

$$b_t = \gamma(S_t - S_{t-1}) + (1-\gamma) b_{t-1} \quad \text{TREND SMOOTHING}$$

$$I_t = \beta \frac{y_t}{S_t} + (1-\beta) I_{t-L} \quad \text{SEASONAL SMOOTHING}$$

$$F_{t+m} = (S_t + m b_t) I_{t-L+m} \quad \text{FORECAST},$$

where

- y is the observation
- S is the smoothed observation
- b is the trend factor
- I is the seasonal index
- F is the forecast at m periods ahead
- t is an index denoting a time period

and α, β, and γ are constants that must be estimated in such a way that the MSE of the error is minimized. This is best left to a good software package.

Complete season needed

To initialize the HW method we need <u>at least</u> one complete season's data to determine initial estimates of the seasonal indices I_{t-L}.

L periods in a

A complete season's data consists of L periods. And we need to estimate the trend factor from one period to the next. To accomplish this, it is advisable to use two complete seasons; that is, $2L$ periods.

season

Initial values for the trend factor

How to get initial estimates for trend and seasonality parameters

The general formula to estimate the initial trend is given by

$$b=1L(y_{L+1}-y_1L+y_{L+2}-y_2L+\cdots+y_{L+L}-y_LL).$$

Initial values for the Seasonal Indices

As we will see in the example, we work with data that consist of 6 years with 4 periods (that is, 4 quarters) per year.

Step 1: compute yearly averages

Step 1: Compute the averages of each of the 6 years.

$$A_p=\sum_{i=1}^{4} y_i 4, p=1,2,\ldots,6.$$

Step 2: divide by yearly averages

Step 2: Divide the observations by the appropriate yearly mean.

1	2	3	4	5	6
y_1/A_1	y_5/A_2	y_9/A_3	y_{13}/A_4	y_{17}/A_5	y_{21}/A_6
y_2/A_1	y_6/A_2	y_{10}/A_3	y_{14}/A_4	y_{18}/A_5	y_{22}/A_6
y_3/A_1	y_7/A_2	y_{11}/A_3	y_{15}/A_4	y_{19}/A_5	y_{23}/A_6

$y_4/A_1 \quad y_8/A_2 \quad y_{12}/A_3 \quad y_{16}/A_4 \quad y_{20}/A_5 \quad y_{24}/A_6$

Step 3: form seasonal indices

Step 3: Now the seasonal indices are formed by computing the average of each row. Thus the initial seasonal indices (symbolically) are:

$$I_1 I_2 I_3 I_4 ====(y_1/A_1+y_5/A_2+y_9/A_3+y_{13}/A_4+y_{17}/A_5+y_{21}/A_6)/6(y_2/A_1+y_6/A_2+y_{10}/A_3+y_{14}/A_4+y_{18}/A_5+y_{22}/A_6)/6(y_3/A_1+y_6/A_2+y_{11}/A_3+y_{15}/A_4+y_{19}/A_5+y_{23}/A_6)/6(y_4/A_1+y_6/A_2+y_{12}/A_3+y_{16}/A_4+y_{20}/A_5+y_{24}/A_6)/6.$$

We now know the algebra behind the computation of the initial estimates.

The next page contains an example of triple exponential smoothing.

The case of the Zero Coefficients

Zero coefficients for trend and seasonality parameters

Sometimes it happens that a computer program for triple exponential smoothing outputs a final coefficient for trend (γ) or for seasonality (β) of zero. Or worse, both are outputted as zero!

Does this indicate that there is no trend and/or no seasonality?

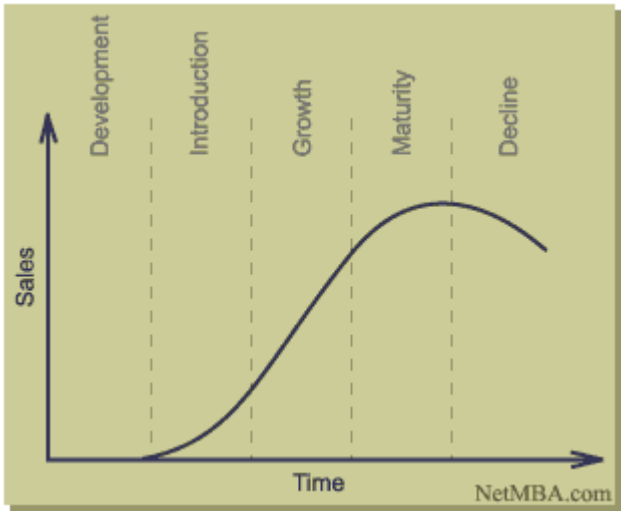
Of course not! It only means that the initial values for trend and/or seasonality were right on the money. No updating was necessary in order to arrive at the lowest possible MSE. We should inspect the updating formulas to verify this.

Product Planning: Product Life Cycle, New Product Development Process, Branding Strategy, Positioning a Brand, Brand Equity, Packaging and Labeling, Product-mix and Product Line, Planned Obsolescence

The Product Life Cycle

A product's life cycle (PLC) can be divided into several stages characterized by the revenue generated by the product. If a curve is drawn showing product revenue over time, it may take one of many different shapes, an example of which is shown below:

Product Life Cycle Curve



The life cycle concept may apply to a brand or to a category of product. Its duration may be as short as a few months for a fad item or a century or more for product categories such as the gasoline-powered automobile.

Product development is the incubation stage of the product life cycle. There are no sales and the firm prepares to introduce the product. As the product progresses through its life cycle, changes in the marketing mix usually are required in order to adjust to the evolving challenges and opportunities.

Introduction Stage

When the product is introduced, sales will be low until customers become aware of the product and its benefits. Some firms may announce their product before it is introduced, but such announcements also alert competitors and remove the element of surprise. Advertising costs typically are high during this stage in order to rapidly increase customer awareness of the product and to target the early adopters. During the introductory stage the firm is likely to incur additional costs associated with the initial distribution of the product. These higher costs coupled with a low sales volume usually make the introduction stage a period of negative profits.

During the introduction stage, the primary goal is to establish a market and build primary demand for the product class. The following are some of the marketing mix implications of the introduction stage:

- *Product* - one or few products, relatively undifferentiated
- *Price* - Generally high, assuming a skim pricing strategy for a high profit margin as the early adopters buy the product and the firm seeks to recoup development costs quickly. In

some cases a penetration pricing strategy is used and introductory prices are set low to gain market share rapidly.
- *Distribution* - Distribution is selective and scattered as the firm commences implementation of the distribution plan.
- *Promotion* - Promotion is aimed at building brand awareness. Samples or trial incentives may be directed toward early adopters. The introductory promotion also is intended to convince potential resellers to carry the product.

Growth Stage

The growth stage is a period of rapid revenue growth. Sales increase as more customers become aware of the product and its benefits and additional market segments are targeted. Once the product has been proven a success and customers begin asking for it, sales will increase further as more retailers become interested in carrying it. The marketing team may expand the distribution at this point. When competitors enter the market, often during the later part of the growth stage, there may be price competition and/or increased promotional costs in order to convince consumers that the firm's product is better than that of the competition.

During the growth stage, the goal is to gain consumer preference and increase sales. The marketing mix may be modified as follows:

- *Product* - New product features and packaging options; improvement of product quality.
- *Price* - Maintained at a high level if demand is high, or reduced to capture additional customers.
- *Distribution* - Distribution becomes more intensive. Trade discounts are minimal if resellers show a strong interest in the product.
- *Promotion* - Increased advertising to build brand preference.

Maturity Stage

The maturity stage is the most profitable. While sales continue to increase into this stage, they do so at a slower pace. Because brand awareness is strong, advertising expenditures will be reduced. Competition may result in decreased market share and/or prices. The competing products may be very similar at this point, increasing the difficulty of differentiating the product. The firm places effort into encouraging competitors' customers to switch, increasing usage per customer, and converting non-users into customers. Sales promotions may be offered to encourage retailers to give the product more shelf space over competing products.

During the maturity stage, the primary goal is to maintain market share and extend the product life cycle. Marketing mix decisions may include:

- *Product* - Modifications are made and features are added in order to differentiate the product from competing products that may have been introduced.
- *Price* - Possible price reductions in response to competition while avoiding a price war.
- *Distribution* - New distribution channels and incentives to resellers in order to avoid losing shelf space.
- *Promotion* - Emphasis on differentiation and building of brand loyalty. Incentives to get competitors' customers to switch.

Decline Stage

Eventually sales begin to decline as the market becomes saturated, the product becomes technologically obsolete, or customer tastes change. If the product has developed brand loyalty,

the profitability may be maintained longer. Unit costs may increase with the declining production volumes and eventually no more profit can be made.

During the decline phase, the firm generally has three options:

- Maintain the product in hopes that competitors will exit. Reduce costs and find new uses for the product.
- Harvest it, reducing marketing support and coasting along until no more profit can be made.
- Discontinue the product when no more profit can be made or there is a successor product.

The marketing mix may be modified as follows:

- *Product* - The number of products in the product line may be reduced. Rejuvenate surviving products to make them look new again.
- *Price* - Prices may be lowered to liquidate inventory of discontinued products. Prices may be maintained for continued products serving a niche market.
- *Distribution* - Distribution becomes more selective. Channels that no longer are profitable are phased out.
- *Promotion* - Expenditures are lower and aimed at reinforcing the brand image for continued products.

Limitations of the Product Life Cycle Concept

The term "life cycle" implies a well-defined life cycle as observed in living organisms, but products do not have such a predictable life and the specific life cycle curves followed by different products vary substantially. Consequently, the life cycle concept is not well-suited for the forecasting of product sales. Furthermore, critics have argued that the product life cycle may become self-fulfilling. For example, if sales peak and then decline, managers may conclude that the product is in the decline phase and therefore cut the advertising budget, thus precipitating a further decline.

Nonetheless, the product life cycle concept helps marketing managers to plan alternate marketing strategies to address the challenges that their products are likely to face. It also is useful for monitoring sales results over time and comparing them to those of products having a similar life cycle.

Introduction to Product Development

In this fast-changing world we are experiencing change in our daily life and at marketplace too. Customer needs, wants, and expectations are changing more rapidly. Customers are increasingly demanding advance features, appealing designs, better quality, and reliability in products. To meet the changing demands of customer, business organisations are investing heavily in research and development (R&D). Business organisations are updating existing products and developing new products to satisfy changing customer needs, wants, and expectations.

The development of competitive new products is a prerequisite for every business organisation to be successful. Samsung has outperformed Nokia in the global mobile-phone market and become the global leader. Samsung updates its existing mobile phones and brings new mobile phones more frequently at competitive low price with advance features, appealing designs, better quality and reliability. Nokia failed to satisfy changing customer needs, wants, and expectations, and lost its market position.

Definition of Product Development

In general, the Product Development can be defined as *"creating, innovating, or developing*

entirely a new product , or presenting an existing product with enhanced utility, improved features, more appealing design, better quality and reliability to satisfy the requirements of its end-users."

Meaning of Product Development

Product means a good, service, idea or object created as a result of a process and offered to serve a need or satisfy a want. **Development** means the act or process of growing, progressing, or developing.

Product Development is a process of improving the existing product or to introduce a new product in the market. It is also referred as New Product Development. The functions of product development are as follows :-

1. Creation of an entirely new product or upgrading an existing product,
2. Innovation of a new or an existing product to deliver better and enhanced services,
3. Enhancing the utility and improving the features of an existing product,
4. Continuous improvement of a product to satisfy rapidly changing customer needs and wants.

Product Development Process

Product development process is a crucial process for the success and survival of any business. Today, businesses are operating in a highly dynamic and competitive environment. Business organisations have to continuously update their products to conform to current trends. The product development process starts from idea generation and ends with product development and commercialisation. Following are the steps in the process of product development.

1. **Idea Generation** - The first step of product development is Idea Generation that is identification of new products required to be developed considering consumer needs and demands. Idea generation is done through research of market sources like consumer liking, disliking, and competitor policies. Various methods are available for idea generation like - Brain Storming, Delphi Method, or Focus Group.
2. **Idea Screening** - The second step in the process of product development is Idea Screening that is selecting the best idea among the ideas generated at the first step. As the resources are limited, so all the ideas are not converted to products. Most promising idea is kept for the next stage.
3. **Concept Development** - At this step the selected idea is moved into development process. For the selected idea different product concepts are developed. Out of several product concepts the most suitable concept is selected and introduced to a focus group of customers to understand their reaction. For **example** - in auto expos different concept cars are presented, these models are not the actual product, they are just to describe the concept say electric, hybrid, sport, fuel efficient, environment friendly, etc.
4. **Market Strategy Development** - At this step the market strategies are developed to evaluate market size, product demand, growth potential, and profit estimation for initial years. Further it includes launch of product, selection of distribution channel, budgetary requirements, etc.
5. **Business Analysis** - At this step business analysis for the new product is done. Business analysis includes - estimation of sales, frequency of purchases, nature of business, production and distribution related costs and expenses, and estimation of profit.
6. **Product Development** - At this step the concept moves to production of finalised product. Decisions are taken from operational point of view whether the product is technically and commercially feasible to produce. Here the research and development department develop a physical product.
7. **Test Marketing** - Now the product is ready to be launched in market with brand name, packaging, and pricing. Initially the product is launched in a test market. Before full scale launching the product is exposed to a carefully chosen sample of the population, called

test market. If the product is found acceptable in test market the product is ready to be launched in target market.

8. **Commertialisation** - Here the product is launched across target market with a proper market strategy and plan. This is called commercialisation phase of product development.

Defining a Brand

Before you begin reading about branding and the strategies companies can adopt when placing their mark on a product, take a few minutes to watch the following video about Starbucks, a truly global brand:

A brand is a promise: the promise of what a company or product will provide to the people who interact with it. A brand consists of all the features that distinguish the goods and services of one seller from another: name, term, design, style, symbols, customer touch-points, etc. Together, all elements of the brand work as a psychological trigger or stimulus that causes an association to all other thoughts we have about this brand. Brand encompasses visual design elements (i.e., logo, color, typography, images, tagline, etc.), distinctive product features (i.e. quality, design sensibility, etc.), and intangible aspects of customers' experience with a product or company (i.e. reputation, customer experience, etc.). Branding may take place at multiple levels: the company as a whole, individual products or product lines. Other entities that work to build consumer loyalty can also be considered brands, such as celebrities (e.g. Lady Gaga), events (e.g. Susan G. Komen Race for the Cure) and places (e.g. Las Vegas).

History

The word "brand" is derived from the Old Norse "brand" meaning "to burn," which refers to the practice of producers burning their mark (or brand) onto their products. Italians are considered among the first to use brands in the form of watermarks on paper in the 1200s. However, in mass-marketing, this concept originated in the nineteenth century with the introduction of packaged goods.

During the Industrial Revolution, the production of many household items, such as soap, was moved from local communities to centralized factories to be mass-produced and sold to the wider markets. When shipping their items, factories branded their logo or insignia on the barrels used. Eventually these "brands" became trademarks, or recognized symbols of a company or product that are established by use. These new brand marks enabled packaged-goods manufacturers to communicate that their products are distinctive and should be trusted as much as (or more than) local competitors. Campbell Soup, Coca-Cola , Juicy Fruit gum, Aunt Jemima, and Quaker Oats were among the first products to be "branded. "

Connotations

A successful brand is much more than just a name or logo. Brand is the sum of perceptions about a company or product in the minds of consumers. Effective brand-building can create and sustain a strong, positive, and lasting impression that is difficult to displace. Brands provide external cues to taste, design, performance, quality, value or other desired attributes if they are developed and managed properly. Brands convey positive or negative messages about a company, product or service. Brand perceptions are a direct result of past advertising, promotion, product reputation and customer experience.

A brand can convey multiple levels of meaning, as follows:

1. **Attributes:** specific product features. The Mercedes-Benz brand, for example, suggests expensive, well-built, well-engineered, durable vehicles.

2. **Benefits:** attributes translate into functional and emotional benefits. Mercedes automobiles suggest prestige, luxury, wealth, reliability.
3. **Values:** company values and operational principles. The Mercedes brand evokes company values around excellence and high performance.
4. **Culture:** cultural elements of the company and brand. Mercedes represents German precision, discipline, efficiency, quality.
5. **Personality:** strong brands often project a distinctive personality. The Mercedes brand personality combines luxury and efficiency, precision and prestige.
6. **User:** brands may suggests the types of consumers who buy and use the product. Mercedes drivers might be perceived and classified differently than, for example, the drivers of Cadillacs, Corvettes or BMWs.

Types of Brands

As alluded to earlier, different types of brands include: individual products, product ranges, services, organizations, individual persons, groups, events, geographic places, private label brands, media, and e-brands.

Individual Brands. The most common type of brand is a tangible, individual product, such as a car or drink. This can be very specific, such as the Kleenex brand of tissues, or can comprise a wide range of products. Product brands can also be associated with a range, such as the Mercedes S-class cars or all varieties of Colgate toothpaste.

Service Brands. A service brand develops as companies move from manufacturing products to delivering complete solutions and intangible services. Service brands are characterized by the need to maintain a consistently high level of service delivery. This category comprises the following:

- Classic service brands (such as airlines, hotels, car rentals, and banks).
- Pure service providers (such as member associations).
- Professional service brands (such as advisors of all kinds – accountancy, management consultancy).
- Agents (such as travel agents and estate agents).
- Retail brands (such as supermarkets, fashion stores, and restaurants).

Organization Brands. Organization brands are companies and other entities that deliver products and services. Mercedes and the US Senate each possess strong organization brands, and each has qualities associated with them that constitute their brand. Organizations can also be linked closely with the brand of an individual. For example, the U.S. Democratic party is closely linked with President Barack Obama.

Personal Brands. A person can be considered a brand. It can be comprised of one, as in the case of Oprah Winfrey, or a few individuals, where the branding is associated with different personalities, such as with the American Democratic Party.

Group Brands. Group branding happens when there is a small group of branded entities that have overlapping, interconnected brand equity. For example, the OWN brand of the Oprah Winfrey Network and the brand of its known members (Oprah and her team) are strongly connected. The OWN group brand is closely linked to Oprah Winfrey herself.

OWN: The Oprah Winfrey Network

Event Brands. Events can become brands when they strive to deliver a consistent experience that attracts consumer loyalty. Examples include conferences the TED series; music festivals like Coachella or SXSW; sporting events like the Olympics or NASCAR; touring Broadway musicals like Wicked. The strength of these brands depends on the experience of people attending the event. Savvy brand managers from product, service and other types of brands realize the power of event brands and seek to have their brands associated with the event brands through sponsorships. Event sponsorship is now a thriving big business.

Geographic Place Brands. Many places or areas of the world seek to brand themselves to build awareness of the essential qualities they offer. Branded places can range from countries and states to cities, streets and even buildings. Those who govern or represent these geographies work hard to develop the brand. Geographic branding is used frequently to attract commerce and economic investment, tourism, new residents, and so forth.

Private Label Brands. Private label brands, also called own brands, or store brands, exist among retailers that possess a particularly strong identity (such as Save-A-Lot). Interestingly, private labels may denote superior, "select" quality or lower cost for a quality product.

Media Brands. Media brands include newspapers, magazines, and television channels such as CNN.

CNN Logo

E-Brands. E-Brands exist only in the virtual world. Many e-brands, such as Amazon.com have a central focus on providing an online front end for delivering physical products or services. Others provide information and intangible services to benefit consumers. Typically a common denominator for e~brands is a focus on delivering a valued service or experience in the virtual environment.

Branding Strategies

A branding strategy helps establish a product within the market and to build a brand that will grow and mature in a saturated marketplace. Making smart branding decisions up front is crucial since a company may have to live with the decision for a long time. The following are commonly used branding strategies:

"House Brand" Strategy

A "House Brand" strategy uses a a strong brand, typically the company name, as the identifying brand name for a range of products (for example, Mercedes Benz or Black & Decker) or a range of subsidiary brands (such as Cadbury Dairy Milk or Cadbury Fingers in the United States). Because the primary focus and investment is in a single, dominant "house" brand, this approach can be simpler and more cost effective in the long run when it is well-aligned with broader corporate strategy.

"House of Brands" Strategy

With the "House of Brands" strategy, a company invests in building out a variety of individual, product-level brands. Each of these brands has a separate name, and may not be associated with the parent company name at all. These brands may even be in de facto competition against other brands from the same company. For example, Kool-Aid and Tang are two powdered beverage products, both owned by Kraft Foods. The "House of Brands" strategy is well-suited to companies that operate across many product categories at the same time. It allows greater flexibility to introduce a variety of different products, of differing quality, to be sold without confusing the consumer's perception of what business the company is in or diluting brand perceptions about products that target different tiers or types of consumers within the same product category.

Competitive Multi-Brand Strategy

In a very saturated market, a supplier can deliberately launch totally new brands in apparent competition with its own existing strong brand (and often with identical product characteristics) to soak up some of the share of the market. The rationale is that having 3 out of 12 brands in such a market will give a greater overall share than having 1 out of 10. Procter & Gamble is a leading exponent of this philosophy, running as many as ten detergent brands in the U.S. market. In the hotel business, Marriott uses the name Fairfield Inns for its budget chain.

Cannibalization is a particular problem of a multi-brands strategy approach, in which the new brand takes business away from an established one which the organization also owns. This may be acceptable (indeed to be expected) if there is a net gain overall.

Attitude Branding and Iconic Brands

Attitude branding is the choice to represent a larger feeling a brand comes to represent, which transcends the specific products being consumed. Examples of companies that use this approach effectively include:

- Nike – "Just do it"
- Apple – "Think different"
- Harley Davidson – "Live to Ride"
- Starbucks – "Daily Inspiration"

Effective attitude branding can transform strong brands into iconic, "lifestyle" brands that contribute to the consumer's self-expression and personal identity.

Component Brands

Some suppliers of key components may wish to guarantee its own position by promoting that component as a brand in its own right. For example, Intel, positions itself in the PC market with the slogan (and sticker) "Intel Inside."

Private Labels

Also called own brands, or store brands, these have become increasingly popular. Where the retailer has a particularly strong identity this “own brand” may be able to compete against even the strongest brand leaders, and may outperform those products that are not otherwise strongly branded.

“No-brand” Branding

Recently a number of companies have successfully pursued “no-brand” strategies by creating packaging that imitates generic brand simplicity. “No brand” branding may be construed as a type of branding as the product is made conspicuous through the absence of a brand name. “Tapa Amarilla” or “Yellow Cap” in Venezuela during the 1980s is a prime example of no-brand strategy. It was simply recognized by the color of the cap of this cleaning products company.

Individual and Organizational Brands

These are types of branding that treat individuals and organizations as the products to be branded. Personal branding treats persons and their careers as brands. Faith branding treats religious figures and organizations as brands.

Crowdsourced Branding

These are brands that are created by the people for the business, which is opposite to the traditional method where the business creates a brand. This type of method minimizes the risk of brand failure, since the people that might reject the brand in the traditional method are the ones who are participating in the branding process. However, the business itself typically cannot fully control these brands because they are the product of crowdsourcing.

One interesting example is the Timbers Army, the independent fan organization of the Portland Timbers Major League Soccer (MLS) Team. The Timbers Army was created by fans, and it operates independently from the MLS team and the Portland Timbers management. Although the organizations coordinate in many areas, ultimately the fan organization asserts its own brand identity.

Nation Branding

Nation branding is a field of theory and practice which aims to measure, build, and manage the reputation of countries. Typically aimed at attracting investment, commerce and/or tourism, it is closely related to geographic place branding, discussed above.

Brand Extension and Brand Dilution

The existing strong brand name can be used as a vehicle for new or modified products. For example, many fashion and designer companies extended brands into fragrances, shoes and accessories, furniture, and hotels. Frequently, the product is no different than what is already on the market, except it has a brand name marking. The risk of over-extension is brand dilution, which is when the brand loses its brand associations with a market segment, product area, or quality, price, or cachet.

What makes a product like Coca-Cola an iconic brand? How is it so well known that people around the world instantly recognize and buy it? A big part of the answer is found in its brand strategy. Learn about the components of a brand strategy and how to formulate one.

Definition of a Brand Strategy

A **brand strategy** is a formal plan used by a business to create a particular image of itself in the minds of current and potential customers. When a company has created and executed a successful brand strategy, people know without being told who the company is and what they do. Companies as large and established as Coca-Cola, as well as small brands and even businesses that sell services to other companies, all benefit from a carefully created brand strategy. As a result of brand strategy, people develop a particular feeling or opinion about a company—a feeling that drives their buying decisions. This feeling equates to **brand equity**. The stronger people feel about a brand, the stronger the brand equity.

The Coca-Cola Example

Coca-Cola, or Coke as it's best known, provides a comprehensive example of an effective brand strategy. What began in 1886 as a syrup mixed with carbonated water and sold at soda-fountains in the American South is now a global, multi billion-dollar brand. It achieved this success through a carefully planned and consistently executed strategy aimed at making Coke popular, trusted, sought-after, and successful.

Shortly after the Coke formula was invented, one of the original Coke business partners suggested the name and designed the Coca-Cola logo still used today, including its distinctive font. Now that the product had a formula and a name, it needed customers. That's where the next step of the Coke brand strategy came into play—building relationships with potential new customers by handing out coupons for a free sample of Coke. This goodwill gesture of a give-away became the first Coke marketing campaign.

The next sign of success for Coke came in the form of competition. Other soft-drink makers began to try to imitate the Coke formula. It was easy to fool people in the days when sodas were sold primarily in glasses at soda fountains, with no ability to identify the product with a familiar bottle or aluminum can to ensure authenticity.

To counter the competition, Coke began its own bottling operation. At the same time, it began to build a distribution network so that Coke could be sold far outside the bounds of its native Atlanta, Georgia. But bottling operations in far-away cities used whatever bottles they had on hand, which meant that Coke was being sold in bottles of all different shapes and sizes. This inconsistency threatened the **brand integrity** of Coke—in other words, the expectations its customers had of the brand. Without a consistent appearance, a brand's ability to build loyalty is diminished. So, Coke designed its own unique bottle in 1916.

Throughout the 20th century, the evolution of the Coke brand followed a series of logical steps that, taken together, comprise a brand strategy. Not coincidentally, these steps share a lot in common with the components of a brand strategy for any product or company.

Common Components of a Brand Strategy

The answers to the following questions provide the framework for creating a brand strategy for virtually any brand. Thinking them over carefully and writing down the answers is an important exercise in creating a brand strategy.

What does your product or service do? In the case of Coke, their famous slogan explains what Coke does: 'The Pause That Refreshes.' So, Coke provides refreshment. An office supplies store might answer this question with 'we provide convenience and cost-effectiveness.'

Who is your product's target audience? It's important to narrow this down from everyone to the key groups of people who are likely to be interested in your product or service.

What is your brand's image? This question goes beyond logo and incorporates font styles, colors, types of imagery, style of language—everything perceived by the five senses that represents your brand.

How do you want your brand to make people feel? Coke might answer, 'Relaxed, happy.' An auto repair shop might answer, 'Relieved, treated fairly.' A clothing store that serves business women might answer, 'Sophisticated, confident.'

Where and when are people likely to encounter your brand? When you have a clear answer to this dual question, you have a road map to create a marketing plan that ensures your target audience sees your brand's message every time and place you want them to see it.

To unlock this lesson you must be a Study.c

Brand positioning:

Brand positioning refers to "target consumer's" reason to buy your brand in preference to others. It is ensures that all brand activity has a common aim; is guided, directed and delivered by the brand's benefits/reasons to buy; and it focusses at all points of contact with the consumer.

Brand positioning must make sure that:

- Is it unique/distinctive vs. competitors ?
- Is it significant and encouraging to the niche market ?
- Is it appropriate to all major geographic markets and businesses ?
- Is the proposition validated with unique, appropriate and original products ?
- Is it sustainable - can it be delivered constantly across all points of contact with the consumer ?
- Is it helpful for organization to achieve its financial goals ?
- Is it able to support and boost up the organization ?

In order to create a distinctive place in the market, a niche market has to be carefully chosen and a differential advantage must be created in their mind. Brand positioning is a medium through which an organization can portray it's customers what it wants to achieve for them and what it wants to mean to them. Brand positioning forms customer's views and opinions.

Brand Positioning can be defined as an activity of creating a brand offer in such a manner that it occupies a distinctive place and value in the target customer's mind. For instance-Kotak Mahindra positions itself in the customer's mind as one entity- "Kotak "- which can provide customized and one-stop solution for all their financial services needs. It has an unaided top of mind recall. It intends to stay with the proposition of "Think Investments, Think Kotak". The positioning you choose for your brand will be influenced by the competitive stance you want to adopt.

Brand Positioning involves identifying and determining points of similarity and difference to ascertain the right brand identity and to create a proper brand image. Brand Positioning is the key of marketing strategy. A strong brand positioning directs marketing strategy by explaining the brand details, the uniqueness of brand and it's similarity with the competitive brands, as well as

the reasons for buying and using that specific brand. Positioning is the base for developing and increasing the required knowledge and perceptions of the customers. It is the single feature that sets your service apart from your competitors. For instance- Kingfisher stands for youth and excitement. It represents brand in full flight.

There are various positioning errors, such as-

1. **Under positioning-** This is a scenario in which the customer's have a blurred and unclear idea of the brand.
2. **Over positioning-** This is a scenario in which the customers have too limited a awareness of the brand.
3. **Confused positioning-** This is a scenario in which the customers have a confused opinion of the brand.
4. **Double Positioning-** This is a scenario in which customers do not accept the claims of a brand.

7-Step Brand Positioning Strategy Process

In order to create a position strategy, you must first identify your brand's uniqueness and determine what differentiates you from your competition.

There are 7 key steps to effectively clarify your positioning in the marketplace:

1. Determine how your brand is currently positioning itself
2. Identify your direct competitors
3. Understand how each competitor is positioning their brand
4. Compare your positioning to your competitors to identify your uniqueness
5. Develop a distinct and value-based positioning idea
6. Craft a brand positioning statement (see below)
7. Test the efficacy of your brand positioning statement (see 15 criteria below)

What is a Brand Positioning Statement?

A positioning statement is a one or two sentence declaration that communicates your brand's unique value to your customers in relation to your main competitors.

In Crossing the Chasm, Geoffrey Moore offers one way of formulating a positioning statement: For (target customer) who (statement of the need or opportunity), the (product name) is a (product category) that (statement of key benefit; also called a compelling reason to believe). Unlike (primary competitive alternative), our product (statement of primary differentiation). However, we provide a more simplified structure for formulating a Brand Positioning Statement in the following section.

How to Create a Brand Positioning Statement

There are four essential elements of a best-in-class positioning statement:

1. **Target Customer**: What is a concise summary of the attitudinal and demographic description of the target group of customers your brand is attempting to appeal to and attract?
2. **Market Definition**: What category is your brand competing in and in what context does your brand have relevance to your customers?
3. **Brand Promise**: What is the most compelling (emotional/rational) benefit to your target customers that your brand can own relative to your competition?

4. **Reason to Believe**: What is the most compelling evidence that your brand delivers on its brand promise?

15 Criteria for Evaluating Your Brand Positioning Strategy

An intelligent and well-crafted positioning statement is a powerful tool for bring focus and clarity to your marketing strategies, advertising campaigns, and promotional tactics. If used properly, this statement can help you make effective decisions to help differentiate your brand, attract your target customers, and win market share from your competition.

Here are 15 criteria for checking your brand positioning:

1. Does it differentiate your brand?
2. Does it match customer perceptions of your brand?
3. Does it enable growth?
4. Does it identify your brand's unique value to your customers?
5. Does it produce a clear picture in your mind that's different from your competitors?
6. Is it focused on your core customers?
7. Is it memorable and motivating?
8. Is it consistent in all areas of your business?
9. Is it easy to understand?
10. Is it difficult to copy?
11. Is it positioned for long-term success?
12. Is your brand promise believable and credible?
13. Can your brand own it?
14. Will it withstand counterattacks from your competitors?
15. Will it help you make more effective marketing and branding decisions?

Brand Equity - Meaning and Measuring Brand Equity

Brand Equity is the value and strength of the Brand that decides its worth. It can also be defined as the differential impact of brand knowledge on consumers response to the Brand Marketing. **Brand Equity exists as a function of consumer choice in the market place**. The concept of Brand Equity comes into existence when consumer makes a choice of a product or a service. It occurs when the consumer is familiar with the brand and holds some favourable positive strong and distinctive brand associations in the memory.

Brand Equity can be determined by measuring:

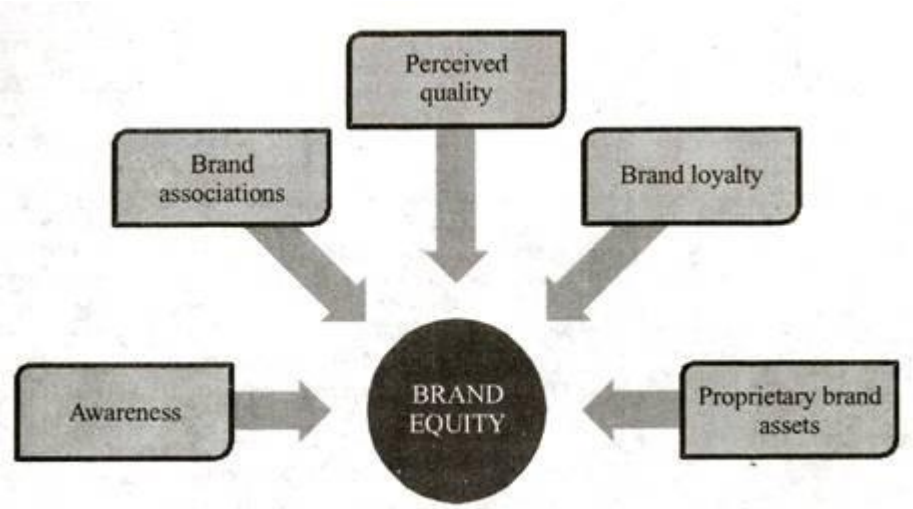
- ✓ Returns to the Share-Holders.
- ✓ Evaluating the Brand Image for various parameters that are considered significant.
- ✓ Evaluating the Brand's earning potential in long run.
- ✓ By evaluating the increased volume of sales created by the brand compared to other brands in the same class.

- The price premium charged by the brand over non-branded products.

- From the prices of the shares that an organization commands in the market (specifically if the brand name is identical to the corporate name or the consumers can easily co-relate the performance of all the individual brands of the organization with the organizational financial performance.

- OR, An amalgamation of all the above methods.

Factors contributing to Brand Equity



Elements of Brand Equity

Factors contributing to Brand Equity

1. Brand Awareness
2. Brand Associations
3. Brand Loyalty
4. **Perceived Quality:** refers to the customer's perception about the total quality of the brand. While evaluating quality the customer takes into account the brands performance on factors that are significant to him and makes a relative analysis about the brand's quality by evaluating the competitors brands also. Thus quality is a perceptual factor and the consumer analysis about quality varies. Higher perceived quality might be used for brand positioning. Perceived quality affect the pricing decisions of the organizations. Superior quality products can be charged a price premium. Perceived quality gives the customers a reason to buy the product. It also captures the channel member's interest. For instance - American Express.
5. **Other Proprietary Brand Assets:** Patents, Trademarks and Channel Inter-relations are proprietary assets. These assets prevent competitors attack on the organization. They also help in maintaining customer loyalty as well as organization's competitive advantage.

Brand awareness is the probability that consumers are familiar about the life and availability of the product. It is the degree to which consumers precisely associate the brand with the specific product. It is measured as ratio of niche market that has former knowledge of brand. Brand awareness includes both brand recognition as well as brand recall. **Brand recognition** is the ability of consumer to recognize prior knowledge of brand when they are asked questions about that brand or when they are shown that specific brand, i.e., the consumers can clearly differentiate the brand as having being earlier noticed or heard. While **brand recall** is the potential of customer to recover a brand from his memory when given the product class/category, needs satisfied by that category or buying scenario as a signal. In other words, it

refers that consumers should correctly recover brand from the memory when given a clue or he can recall the specific brand when the product category is mentioned. It is generally easier to recognize a brand rather than recall it from the memory.

Brand awareness is improved to the extent to which brand names are selected that is simple and easy to pronounce or spell; known and expressive; and unique as well as distinct. For instance - Coca Cola has come to be known as Coke.

There are two types of brand awareness:

1. **Aided awareness-** This means that on mentioning the product category, the customers recognize your brand from the lists of brands shown.
2. **Top of mind awareness (Immediate brand recall)-** This means that on mentioning the product category, the first brand that customer recalls from his mind is your brand.

The relative importance of brand recall and recognition will rely on the degree to which consumers make product-related decisions with the brand present or not. For instance - In a store, brand recognition is more crucial as the brand will be physically present. In a scenario where brands are not physically present, brand recall is more significant (as in case of services and online brands).

Building brand awareness is essential for building brand equity. It includes use of various renowned channels of promotion such as advertising, word of mouth publicity, social media like blogs, sponsorships, launching events, etc. To create brand awareness, it is important to create reliable brand image, slogans and taglines. The brand message to be communicated should also be consistent. Strong brand awareness leads to high sales and high market share. Brand awareness can be regarded as a means through which consumers become acquainted and familiar with a brand and recognize that brand.

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Brand Associations are not benefits, but are images and symbols associated with a brand or a brand benefit. For example- The Nike Swoosh, Nokia sound, Film Stars as with "Lux", signature tune Ting-ting-ta-ding with Britannia, Blue colour with Pepsi, etc. Associations are not "reasons-to-buy" but provide acquaintance and differentiation that's not replicable. It is relating perceived qualities of a brand to a known entity. For instance- Hyatt Hotel is associated with luxury and comfort; BMW is associated with sophistication, fun driving, and superior engineering. Most popular brand associations are with the owners of brand, such as - Bill Gates and Microsoft, Reliance and Dhirubhai Ambani.

Brand association is anything which is deep seated in customer's mind about the brand. Brand should be associated with something positive so that the customers relate your brand to being positive. Brand associations are the attributes of brand which come into consumers mind when the brand is talked about. It is related with the implicit and explicit meanings which a consumer relates/associates with a specific brand name. Brand association can also be defined as the degree to which a specific product/service is recognized within it's product/service class/category. While choosing a brand name, it is essential that the name chosen should reinforce an important attribute or benefit association that forms it's product positioning. For instance - Power book.

Brand associations are formed on the following basis:

- Customers contact with the organization and it's employees;
- Advertisements;
- Word of mouth publicity;
- Price at which the brand is sold;
- Celebrity/big entity association;
- Quality of the product;
- Products and schemes offered by competitors;
- Product class/category to which the brand belongs;
- POP (Point of purchase) displays; etc

Positive brand associations are developed if the product which the brand depicts is durable, marketable and desirable. The customers must be persuaded that the brand possess the features and attributes satisfying their needs. This will lead to customers having a positive impression about the product. Positive brand association helps an organization to gain goodwill, and obstructs the competitor's entry into the market

Brand Loyalty is a scenario where the consumer fears purchasing and consuming product from another brand which he does not trust. It is measured through methods like word of mouth publicity, repetitive buying, price sensitivity, commitment, brand trust, customer satisfaction, etc. Brand loyalty is the extent to which a consumer constantly buys the same brand within a product category. The consumers remain loyal to a specific brand as long as it is available. They do not buy from other suppliers within the product category. Brand loyalty exists when the consumer

feels that the brand consists of right product characteristics and quality at right price. Even if the other brands are available at cheaper price or superior quality, the brand loyal consumer will stick to his brand.

Brand loyal consumers are the foundation of an organization. Greater loyalty levels lead to less marketing expenditure because the brand loyal customers promote the brand positively. Also, it acts as a means of launching and introducing more products that are targeted at same customers at less expenditure. It also restrains new competitors in the market. Brand loyalty is a key component of brand equity.

Brand loyalty can be developed through various measures such as quick service, ensuring quality products, continuous improvement, wide distribution network, etc. When consumers are brand loyal they love "you" for being "you", and they will minutely consider any other alternative brand as a replacement. Examples of brand loyalty can be seen in US where true Apple customers have the brand's logo tattooed onto their bodies. Similarly in Finland, Nokia customers remained loyal to Nokia because they admired the design of the handsets or because of user- friendly menu system used by Nokia phones.

Brand loyalty can be defined as relative possibility of customer shifting to another brand in case there is a change in product's features, price or quality. As brand loyalty increases, customers will respond less to competitive moves and actions. Brand loyal customers remain committed to the brand, are willing to pay higher price for that brand, and will promote their brand always. A company having brand loyal customers will have greater sales, less marketing and advertising costs, and best pricing. This is because the brand loyal customers are less reluctant to shift to other brands, respond less to price changes and self- promote the brand as they perceive that their brand have unique value which is not provided by other competitive brands.

Brand loyalty is always developed post purchase. To develop brand loyalty, an organization should know their niche market, target them, support their product, ensure easy access of their product, provide customer satisfaction, bring constant innovation in their product and offer schemes on their product so as to ensure that customers repeatedly purchase the product.

Brand equity comprises the following elements:

1. Awareness:

Awareness of the brand name among target customers is the first step in the equity building process. Awareness essentially means that customers know about the existence of the brand and can also recall what category the brand is in.

The lowest level of awareness is when the customer has to be reminded about the existence of the brand name, and that it is being a part of a particular category. In aided recall, the customer can recognize the company's brand from among a list of brands in the category.

ADVERTISEMENTS:

In unaided recall, the customer himself mentions the company's brand. The highest level of awareness is when the first brand that the customer can recall upon the mention of the product category is the company's brand. This is called top-of-mind recall.

Awareness of the name acts as an anchor to which everything else about the brand is linked, much like the name of a person acting as an anchor for tying all associations about him.

Building awareness involves making the brand visible to the relevant target audience by various promotional methods such as publicity, sponsorships, events, advertising, instigating word-of-mouth promotion, etc.

2. Brand associations:

Anything that is connected to the customer's memory about the brand is an association. Customers form associations on the basis of quality perceptions, their interactions with employees and the organization, advertisements of the brand, price points at which the brand is sold, product categories that the brand is in, product displays in retail stores, publicity in various media, offerings of competitors, celebrity associations and from what others tell them about the brand. And this is not an exhaustive list.

Consumers add to brand associations with each and every interaction they have with the brand. All these associations are not formed only due to their interactions with the organization. Many associations are formed from what others tell customers about the brand.

It is absolutely crucial that the company plan each interaction with every customer and relevant others (media, shareholders, employees, government) so as to eliminate even the slightest chances of any negative associations that can emanate from any of these sources.

Associations contribute to brand equity, as strong, positive associations induce brand purchases, besides generating good word-of-mouth publicity. Such associations can also help the company in leveraging the brand, create strong barriers to entry for competitors, give trade leverage to the company and enable the company to achieve differential advantage.

3. Perceived quality:

Perceived quality is also a brand association, though because of its significance, it is accorded a distinct status while studying brand equity. Perceived quality is the perception of the customer about the overall quality of a brand.

In assessing quality, the customer takes into consideration the performance of the brand on parameters that are important to him, and makes a relative judgment about quality by assessing competitor's offerings as well. Therefore, quality is a perceptual entity, and consumer judgments about quality vary.

Quality perceptions influence pricing decisions of companies. Better quality products can be charged a price premium. Quality is one of the main reasons for consumer preference for a brand in any product category. Thus, superior perceived quality can also be used to position the brand.

4. Brand loyalty:

A customer is brand loyal when he purchases one brand from among a set of alternatives consistently over a period of time. In the traditional sense, brand loyalty was always considered to be related to repetitive purchase behaviour.

For some products such as purchasing a house or an automobile, repetitive purchase behaviour may not occur. In these situations, attitudinal brand loyalty, i.e., consumer feelings about the brand that was purchased, and their inclination to recommend the brand to others are measured.

Brand loyalty is usually rated as the most important indicator of brand equity because loyalty develops post purchase and indicates a consistent patronage by a customer over a long period of time whereas all other elements of brand equity may or may not translate into purchases.

Brand loyal customers form the bedrock of a company. Higher loyalty levels lead to a decrease in marketing expenditure as such customers act as positive advocates for the brand. Besides, a company can introduce more products in its portfolio that are aimed at the same customers at less expenditure.

It also acts as a potential barrier to entry for new players and gives time to the company to respond to competitive threats.

The bargaining power of the company with the trade channel members is stronger when there are many loyal customers who would only buy the company's brand. In this case, the retailer merely distributes the manufacturer's products.

5. Other proprietary brand assets:

Proprietary assets include patents, trademarks and channel relationships. These assets are valuable as they prevent competitors from attacking the company and prevent the erosion of competitive advantages and loyal customer base.

All activities of the firm determine brand equity. These activities may enhance or diminish the brand value. Activities that are synchronous with the overall vision for the brand enhance equity, and any activity that goes against this overall vision reduces brand equity.

Brand Equity:

What is Brand Equity?

Several attempts have been made to define the phrase 'brand equity'. It has different connotations when different people use it. That is 'brand equity' as a concept is differently defined from different point of view.

So one can ask many questions as he thinks fit. Is a brand equity the price at which a brand can be sold by an organisation to another? In that sense, it becomes a purchase consideration.

Is it the price of a brand?

Under study when all brands in the market are forced to have equal share?

What measures brand equity?

Is it the awareness or the buying intention or a brand loyalty?

There is no our answer to this. The best thing is to the experts or consultants in the field.

"Brand Equity" refers to "a set of assets and liabilities linked to brand, its name and symbol that add to or subtract from the value provided by the product or service to a firm and or that firm's competitions" as clearly defined by Professor David A.

Aaker in his article "Managing the Brand Equity Capitalizing on the Value of Brand Name" Free Press 1991-p. 15. In other words, brand equity provides (or negatively subtracted value to a firm in the form of price premium or trade leverage or competitive advantage.

The following chart clears the concept of "Brand Equity":

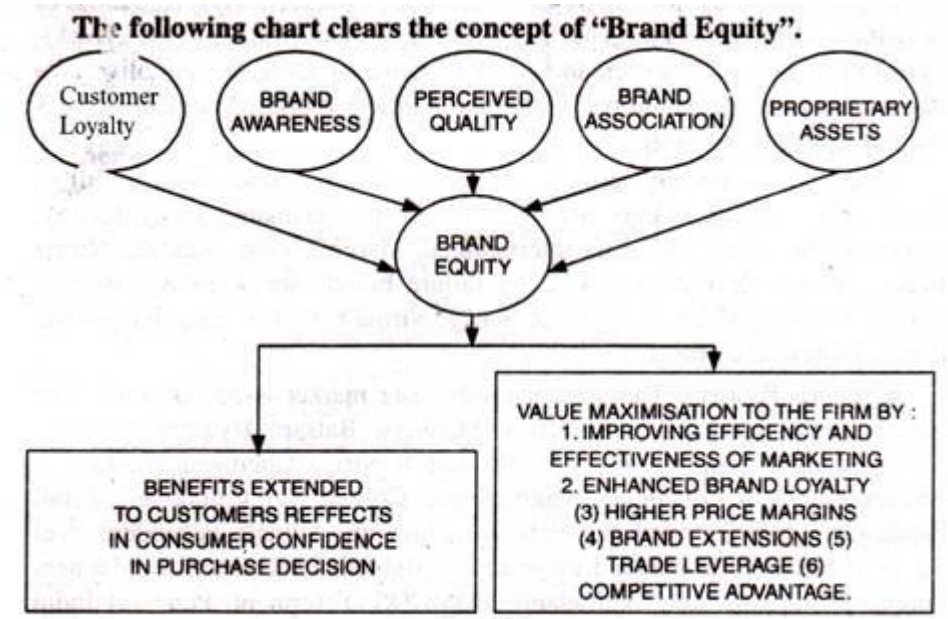


Fig. 1.07

The brand's assets can be categorized into the five groups as listed by Professor David. A. Aakar namely:

(1) Brand loyalty

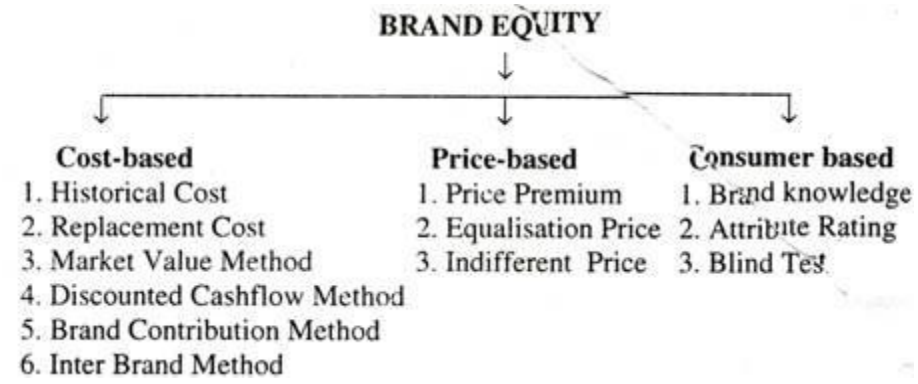
(2) Brand name awareness

(3) Brands perceived quality

(4) Brand association in addition to the perceived quality and

(5) Other proprietary brand assets like patents, trades marks, channel relationships.

Accordingly, Arthur Anderson Consultants developed an elaborate methodology to define the phrase 'brand equity'. Based on their way of approach, the definitions of brand equity are COST based, PRICE based and CONSUMER based. The following is the chart that projects the concept of Brand Equity bases.



It will not be out of place if one has the knowledge of each method for, it helps in having perfect knowledge of 'Brand Equity".

A. Cost Based Methods:

1. Historical Cost Method:

This represents the money that has been spent on the brand to date. Say Rs. 150 million have been expended in creating a brand 'X' for a particular product. The value at which the brand can be sold to another firm should be Rs. 150 million. It is quite appealing on intuitive grounds.

However, the problems associated with historical cost are:

(1) The prospective buyer is more interested in the future cash flows from a brand and the fact that Rs. 100 million was spent on brand 'X' doesn't guarantee the realisation of even a small chunk of it that amount in future sales.

The costs incurred in brands are no measured of the efficiency with which the money was spent. There are living examples of American and Japanese firms.

The budgets of General Motors, Siemens, Philips, Xerox-and IBM are much higher than Japanese competitors such as Honda, Hitachi, Sony, Canon and National Electrical Company.

The result is that with small budgets Japanese companies have more successful models. Funds may be abundant but badly spent will not yield good result is terms of brand equity. Hence, historical costs are our inadequate measure of a brand's future potential even when the costs are adjusted to the current prices.

2. Replacement Cost:

In 1997, Colgate had a turnover of Rs. 6,810 million with a gross profit of Rs. 146 crores or 1,460 million rupees, reached 3 lakh retailers directly enjoying top rank so far as consumer awareness ranking by A.M. magazine of 1997 November. This is what the calculation of cost to create the brand with similar indicators such is turnover, profitability distribution reach, brand loyalty and so on.

The marketing experts are of the opinion that to launch a product with national brand will be around 50 million rupees. Add to this the production, distribution and other marketing underfoot costs.

A marketing and simple calculation can demonstrate this figure. Take the arch rival brand of Colgate namely Close-up of H.L.L. In case of Close-up Rs. 2, 000 million was spent cumulatively on production and marketing over the years to achieve its present position.

To this, add amount for brand loyalty and distribution equity it commands. Let us take that HLL has spent another 600 million rupees. Speaking alternatively the brand value of Close up is 2,600 million rupees.

That is replacement cost is:

RC = LC + PO + AO + SDO + BP

Where RC = Replacement Cost

LC = Launch Cost

PO = Production Overheads

AO = Administrator Overheads

SDO = Selling and Distribution Overheads

BD = Brand Premium acquired over the year due of brand Loyalty.

This approach is better than historic cost approach as it considers today's costs than of past. However, procedurally it is not that simple to calculate as it appears. It is not totally free from the weakness of historic costs.

The question is what guarantee is there of HLL spending 2,600 million to say for acquiring 18 percent market shares in case of Close up did ? That is present costs or replacement costs are as bad indicators as historic or past costs so far as evaluating the brand equity is the focus.

3. Market Value Method:

For a particular brand, brand value is obtained with the value that has been realized in comparable current merger or acquisition. The data available showing past and present position of some six companies taken from Business World October 5-18-1994 which is much relevant here.

Past Position :

Company	Taken over by	Year	Price (million) Rs.
1. Ashok Leyland	Hindujas	1987	780
2. Assam Co. Ltd.	Jay Mehta	1991	600
3. Shaw Wallace	Mr. Chhabria	1985	390
4. Berger Paints	Vijay Mallya	1988	360
5. Warner Tea	G.S. Ruia	1983	130
6. Universal Luggage	Dilip Piramal	1988	40

Present Position :

Brand	Taken over by	Price in million Rs.
1. Eveready	Mcleod Russel	2,900
2. Kelvinator	Whirl Pool	2,500
3. Farex, Glucon-D	Heinz	2,100
4. Thums Up, Gold Spot	Coca Cola	1,800
5. Cibaca	Colgate	1,310
6. Transelektra	Godrej	800

It is evident from the information that Cibaca was taken over by Colgate for Rs. 1310 million. If Cibacas equity as Rs. 1310 million, what is the equity of Colgate? As Colgate has 17 times the turnover of Cibaca, it works out Rs. 22270 million. Instead of taking as STR (Sales Turn Over) one can take even EPS earnings per share as multiplier where EPS = PAT + Number of Equity Shares.

4. Discounted Cash Flow Method:

This method consists of two elements namely:

(1) Estimating the cash-flows that will accrue in future and

(2) Conversion these cash flows to present value discounting at an appropriate discount factor.

This speaks of present value of forecasts. Present value tables give this discount factor over a period and at discount rate.

Let us take the cash inflows of Orient fans—PMPO are projected for 15 years, and discounted at 13 percent, the following will be the results:

Year	Cash inflows	Discount Factor	Discounted Cash flow
2000	1,100	0.88496	973.456
2001	1,158	0.78315	906.887
2002	1,190	0.69305	824.729
2003	2,020	0.61332	1,238.906
2004	2,100	0.54276	1,139.796
2005	2,300	0.48032	1,104.736
2006	2,500	0.42506	1,062.650
2007	2,570	0.37616	996.731
2008	2,780	0.33288	925.406
2009	2,890	0.29459	851.365
2010	2,990	0.26070	779.493
2011	3,133	0.23071	722.814
2012	3,333	0.20416	680.465
2013	3,560	0.18068	643.221
2014	4,000	0.15988	639.520
	Rs. 37,624		Rs. 13,490.175

According to this method the purchasing company pays Rs 13,490.18 (rounded figure) Rs. 13,490.18 is the brand equity of Orient Fans PMPO. Though it is sounding well of discounting estimated cash inflow as compared to historical method,

it is rather difficult, if not impossible, to estimate the cash-inflows very accurately over a longer period. Another brand say Cinni might excel Orient PMPO in future.

Again the nature the very industry might undergo a change duet improved technology. Instead of suspend fans, they might be horizontal or very flat yet aerodynamic fixed in walls. In other words, Orient PMPO may not retain its original status. However, this is a suitable method where sales turnovers are stable and more accurately predictable.

5. Brand Contribution Method:

This is an attempt to identify the 'Brand' contribution to the product. This 'Brand Contribution' compares the profits earned by the brand with profits earned by an unbranded or generic product in the same category.

Accordingly, the difference between the two is treated as a measure of brand value. Of course, this is not acceptable at which the brand can be sold. It is because the buying will have to pay several times the difference to the bought unbranded product.

It can be presented in the form of an equation as under:

BE = K x (Profits from the branded product profits from the unbranded product in the same category.)

Where:

BE = Brand Equity

K = Number of times the difference, let us take a case of shoes manufactured by unknown and the shoes bought or manufactured by Bata Shoe Company. Say the sales of 'Ambassador' brand are Rs. 500 million and those of another unknown brand equal to that of 'Ambassador' are Rs. 400 million but profits are Rs. 100 million in case of Bata While Rs. 50 million in case of unbranded product. The 'K' factor is 8 times, and then the Brand equity will be

8 x (Rs. 100 million Rs. 50 million) = 8 (Rs. 50 million) = 400 million. This method is more useful as the measure of the brand's strength in the market in which it operates.

6. Inter-brand Method:

The Inter brand Company of United Kingdom developed this method which is structural in arriving at brand equity. It is an attempt to arrive at the value at which a brand can be sold by our company to another. In fact, it is a complicated method involving certain logical steps.

The equation of Brand Equity according to this method is:

B.E. = (Weighted Average of Past Brand Profits x Standard Rate of Return of Industry x Brand Strength).

This involves three steps:

1. The weighted average of the last three year's profits of the brand computed.

2. Calculating brand strength variable scores say leadership, suitability, internationality, protection, market, trend and so on. This product is a percentage namely point wise total score out of 100 score points.

3. The Brand Equity then will be the product of weight-age, average profits multiplied by Standard Rate and brand Strength.

Let us take a case to understand the derivation of Brand Equity. The Ready Garments Company has give profits for three years. The weight-age given is 2: 3: 4 Profits: 2000, Rs. 25 million 2001, Rs. 31 million and for 2002 Rs. 35 million.

It manufactures T-shirts named as "Smarty". The standard/Average Rate of Return for industry is 25 per cent or Rs. 25 per share of Rs. 100 each. The brand strength variables are Leadership. Suitability, Internationality, Support Protection, Market and Trend.

Each variable is given the weight-age of 100 points namely 30 to leadership; 15 to Suitability, Internationality 15; Support 15; Protection 5; Market 5 and 15 is for trend. The actual score for each variable as against the earmarked are 17, 8, 3, 8, 3, 3 and 9 respectively.

Accordingly we will calculate weighted average profit for three years.

Year 2000	Profits Rs. 25 million	×	2 = 50 mi.
Year 2001	Profits Rs. 31 million	×	3 = 93 mi.
Year 2002	Profits Rs. 35 million	×	4 = 140 mi.
Total Profits			Rs. 283 million

$$\therefore \text{Average profits} = \frac{\text{Rs. 283 million}}{2+3+4} = \frac{\text{Rs. 283 million}}{9}$$

$$= \text{Rs. 31.444 million}$$

Another step we are proceed is to find out "Brand Strength" which is in the form of a statement:

Factors/Variables	Implications Given	Weights	Weights Scored
1. Leadership :	Is the brand a leader in the market shares pricing ?	30	17
2. Suitability :	Is there brand loyalty ?	15	08
3. Internationality :	What is the brand's accomplishment level in international markets ?	15	03
4. Support :	Is the brand actively promoted and supported by the company ?	15	08
5. Protection :	Is it adequately protected by trade mark ?	05	03
6. Market :	Is the market in which the brand operates stable ?	05	03
7. Trend :	What is the long-term future for the brand ?	15	09
Total		100	51

Therefore the Brand Strength will be:

51 points scored/ 100 points earmarked

= 0.51

Hence, Brand Equity = 0.51 x 25% x 31.444

= -0.51 x 25 x 31.444

= Rs. 400.911 million

= Rs. 400.91 million

If a company like Chirag Din wants to buy 'Smarty', the first will have to pay Rs. 400.91 million. What important to note is that qualitative factors are quantified. It means that 'Brand Strength' is going to be subjective because these are not a single way as to what weight-age is to be given to variables.

One must admit openly that it is almost difficult, if not impossible to totally eliminate the influence of subjectivity even where quantitative methods are used. The rationale of this method is that weighted earnings are related with industry's earnings rate.

B. Price Based Methods:

Some experts have thought of calculating Brand Equity on the oasis of price particularly retail prices of the brands.

These are:

1. Price Premium Method:

A comparison made of the retail price of a 'branded' product with that of unbranded product in the same category. The difference speaks of "brand equity". It also indicates "brand strength". It means that higher the retailer premium that a brand can charge, greater is the equity of brand in the minds of a customer.

Since price is the parameter the brand equity cannot be generally acceptable concept. In case of Colgate, we have "Colgate Dental Cream" which is largely used and lowly priced as against "Colgate Total" which is very costly. Even Amway dental cream "Glister" is very much higher than that of Colgate Total.

In case of “Balsaras “Babool” is deliberately priced lowly as compared to “Promise” to enter the market to gain the ground. The implication of this approach of brand equity is that of Low-brand equity or zero brand equity in case of lowly priced branded and unbranded products.

2. Market Share Equalisation Method:

Brand equity is arrived in case of this method in a wiser way if total market sales for say dental cream say 57 per cent is that of Colgate, 18 Promise, Babool 5 percent, Pepsodent say 10 per cent. These are not actual figures or the only brands. One can take different figures and brands. To illustrate let say there are four brands priced for a given quantity say of 100 gram tubes and the number of people using taken out of hundred persons.

Following is the statement configured:

Brand	Prices per tube of 100 gram	Number of persons using
1. Colgate Dental Cream	Rs. 18.50	62
2. Close Up	Rs. 22.50	20
3. Promise	Rs. 18.50	07
4. Babool	Rs. 16.50	11

The question is what are the prices at which the market shares for each of these brands equal? Apparently the most popular brand is Colgate Dental Cream. It is obvious that if Colgate Dental Cream raises the prices beyond a particular point, consumers are likely to shift to other brands. Let us take if 37 persons shift from Colgate with big rise in Colgate Dental Cream and marginal rise in other brands.

This gives the following changed picture:

Brand	New Prices per 100 gram pack	Number of consumers
Colgate Dental Cream	Rs. 26.50	25
Close up	Rs. 23.25	25
Promise	Rs. 18.75	25
Babool	Rs. 16.75	25

The changed scene created by forced situation, makes it amply clear that all four brands have equal market shares. Here, it is the price that indicates the brand equity. If we express the prices in terms of paise the numbers reflect in ‘Brand Equity” Map.

Colgate Dental Cream – Paise 265.00

Close-Up – Paise 232.50

Promise – Paise 187.50

Babool – Paise 167.50

This Brand Equity Map clears that Brand Equity of Colgate Dental Cream is equal to 265.00 while that of Babool 167.50. That is both Colgate Dental Cream and Close-up are High in terms of Brand Equity while Promise and Babool are low.

This is proved by the study, conducted by the students of Indian Institute of Management covering 51 respondents, reveals that at market share equalisation, Colgate commanded a price

premium of 6.12 and Close-up Rs. 2.71. Taking this group of respondents, Colgate enjoys higher "Brand Equity" than 'Close Up'.

3. Price Premium at Indifference:

This is the method that attempts to compare the free prices of brands at the point of indifference. Let us take two brands say Colgate and Promise. To avoid duplicacy repeat same experiment that was tried in market share equalization method. Keep increasing the price of Colgate from 26.50 to Rs. 27.00. Let us, on an average a customer jumps from Colgate to Promise at Rs. 27.00.

Then the Brand equity of Colgate will be:

$$BE = \left\{\left(\frac{\text{Revised Price of Colgate}}{\text{Revised Priceof Promise}}\right) - 1\right\} \times 100$$

$$BE = \left(\frac{\text{Rs. } 2700}{\text{Rs. } 18.75} - 1\right)(100)$$

$$BE = (\text{Rs. } 1.44 - 1)\ (100)$$

$$BE = 44$$

Similar methodology can be used to calculate the brand equity. This method uses one of the brands as 'anchor point' to define brand equity. It might so happen that some brands might have negative equity. For instance, if an average customer jumps from Babool to Promise at Rs. 17.00, the Brand Equity of Babool will be:

BE = (Rs. 17.00 / Rs. 18.75 -1) (100)

BE = 0.906- 1

BE = -0.33

As concept of 'equity' is relative, it does not matter. Let us equalize B.E. of Babool to zero and rearrange the result.

The rearranged set of facts will reveal:

Colgate	44.00	Colgate	58.80
Promise	0.00	Promise	9.33
Babool	-9.33	Babool	0.00

It clearly demonstrates that Colgate has much higher Brand Equity than Promise and Babool. Between Promise and Babool, the latter has least equity.

C. Customer Based Brand Equity:

Customer based methods of Brand Equity are also developed by some veterans. The heart of this approach is the customer's knowledge about the brand in spot light.

These are:

1. Brand Knowledge Method:

'Brand Knowledge' stands for the sum of brand awareness and brand image. Each of the parameters can be measured on a 1-10 scale where standard measures such as recall, associations or attitudes or users image and so on.

A weighted total of these parameters will be the measure of brand equity. The dimensions of Brand Knowledge can be presented in the form of a chart as under for better understanding.

Brand Recall:

It can be better explained with a practical example. To have recall score for a brand, certain questions are asked. There may be four or five questions. Let us take bathing soap brand say "Mysore Sandal".

One can ask say four questions regarding this soap:

1. What brand comes to your mind when I say toilet beauty soap?

2. Which brand comes to your mind when I say 'lower price'.

3. Which brand comes to your mind when I say white, cream, and pink?

4. The advertisement for which brand says "Do you now understand why I buy this?

Let us turn to the answers of these in case of a customer. Remember we are asking several customers from different parts of the country-Urban, semi urban- rural-top class, middle class, poor class, educated, uneducated, youngsters, and middle aged and old and so on. Say answer in case first question is 'Mysore Sandal', then its Brand Recall is high. Let us give 10 out of 10 points.

If the answer to second question is "Santoor", then the score point can be say 7 out of 10 points. If the answer to the third question is say, 'Mysore Sandal', the score point can be 6 out of 10. If the answer is a correct recall-say 'Santoor'-he can be given again say 5.

Then the scores are averaged for four questions. In this case, (10 + 7 + 6 + 5 + 4) the average score is 7. This is a measure of Brand Equity. According to this method, the equity does not lie in the price at which brand can be sold but in the mind of the customer.

Even if consideration obtained for selling a brand can be measured, it is argued that this consideration itself depends on how many people like the brand or its customer based brand equity.

The study conducted by the students of Indian Institute of Management Bangalore in case of two items, toilet soap cakes and tooth pastes, the scores that ranged between 0 and 10 are as follows after averaging.

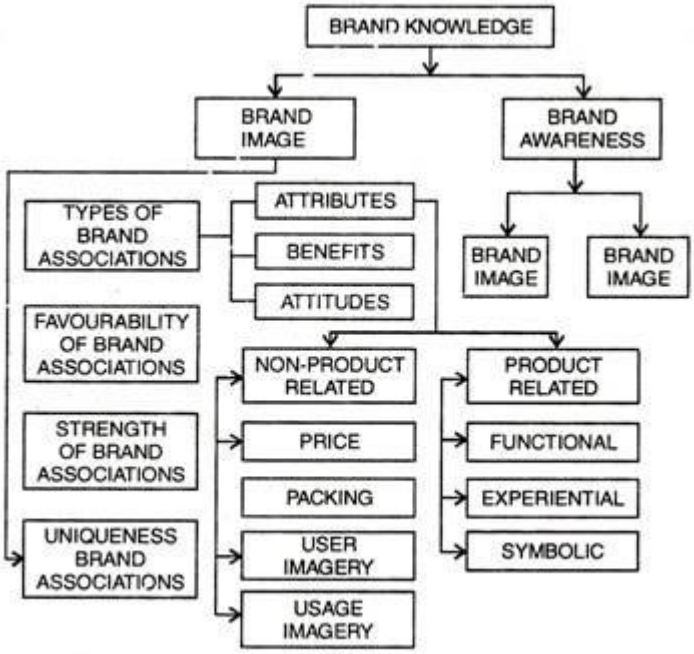


Fig. 1.08

Toilet Soaps		Tooth Pastes	
Brand	**Score**	**Brand**	**Score**
1. Lux International	7.57	Colgate Gel	7.40
2. Liril	7.16	Close Up	6.98
3. Camay	6.88	Pepsodent	6.44
4. Pears	6.85	Colgate Dental Cream	6.29
5. Lux	6.51	Promise	5.81
6. Mysore Sandal	6.17	Cibaca Top	5.46
7. Santoor	5.97	Neem	5.00
8. Dettol	5.71	Baboo l	4.81
9. Rexona	5.65		
10. Hamam	5.48		
11. Ganga	5.52		
12. Life buoy	5.15		
13. Margo	4.99		
14. Nirma Beauty	4.77		
15. Nirma Bath	4.53		

The above piece of information makes it quite clear that amongst the toilet soaps, Lux International has the highest Brand Equity while “Nirma Bath” the lowest. In case of tooth pastes, “Colgate Gel” has the highest Brand Equity while ‘Babool’ has the lowest.

The major problem with this method is that the scores should be valid. The respondents selected must fully be reflective of the social fabric. Unless and until, several such studies are carried out on different products or brands a score cannot be interpreted. Suppose AM. Studies conducted several times, reveal that Colgate has a score of 82.

If Nirma gets 55, the question is whether its equity should be compared in similar or competitive products or brands or non-competitive or different product or brands which are unrelated. The question remains unsolved as to its validation and standardization.

2. Attribute-Oriented Approach:

Under this approach, the methodology is taking the attributes of brands in a particular product area. These attributes are rated in the range of 01 to 10 scales from consumers. The sum of the scores of each brand reflects the Brand Equity of a given product.

Let us take the case of toilet soaps say at least 5 and decide the attributes and get the score from consumers and total the score for each brand to determine the Brand Equity. Even these absolute scores can be expressed as a percentage.

The configuration of scores of five brands and five attributes may be:

The configuration of scores of five brands and five attributes may be:

Attributes	Cinthol	Liril	Dettol	Lux	Nirma Bath
1. Fragrance	8	6	7	9	5
2. Density	7	7	6	5	6
3. Froth	9	8	7	7	8
4. Moisturiser	7	6	5	8	5
5. Freshness	**8**	**9**	**4**	**8**	**7**
	39	36	29	37	31

In terms of absolute figures compared 'Cinthol' has Highest Brand Equity and 'Dettol' has the lowest. Even if percentage is taken, the same ranking will result.

Though it gives weight-age to attributes, the limitation of this method is that Brand Equity stands for more than brand attributes.

3. Blind Test:

Blind test is a variation method of the earlier attribute. Under this method clear distinction is drawn between subjective and objective attributes. Accordingly Brand Equity is defined as the difference between the overall performance of a brand and the sum of the scores it gets on objective parameters.

Let us take the example of 100 CC mobiles say "Yamha RX". "TVS Shaolin" and "Hero Honda-Splendour".

Taking overall brand level, there is preference for one brand or the other. Taking brand level score out of 100 points. A respondent gives or respondents give the score when you ask the question a consumer". How much does this brand score on hundred according to you?" Say answer is- Yamaha 79, Shaolin 84 and Spendour 88. Let us turn now to score when objective parameters are considered such as fuel consumption that is so many kilometers per liter of petrol; Pick-up so many Kmph in given time duration- Load carrying capacity-its minimum and maximum.

Then there is need of conducting a blind test on these attributes for the brands in question without revealing the brand name to the customer. If following are the average ratings taken from a sample of 300 respondents for each of the objective attributes on a 00 to 10 scale.

Objective Attributes	Brand Shaolin	Brand Splendour	Brand Yamaha
1. Fuel Efficiency	7	9	8
2. Pick-up	6	6	7
3. Load Carrying Capacity	7	6	6
Total out of 30	20	21	21
∴ out of 100	$= \frac{20}{30} \times 100$ = 66.67	$= \frac{21}{30} \times 100$	$= \frac{21}{30} \times 100$

Then deduct these scores (objective) from the subjective scores to arrive at Brand Equity :

Extent of Brand equity	Brand Shaolin	Brand Spendour	Yamaha
Overall Brand Level Score	84.00	88.00	79.00
Less Objective Line scores	66.67	70.00	70.00
Brand Equity	17.33	18.00	09.00

It means that subjective parameters show that Brand Equity is highest for Splendor and lowest for Yamaha. The basic problem is that of identifying the subjective and objective parameters.

It is much easier in case of say two wheelers and four wheelers but not so easy in case of consumer non-durables like talc powder, Shampoo, or say tooth paste and so on. Again very important question arises as to why only we should take into account subjective factors (net) as a measure of Brand Equity?

Product Packaging:

Packaging is the other side of the product identification. Traditionally, the function of packaging was to protect goods. However, it is a promotional tool and the major image builder contributing to the product success. It is a point of sale display that develops a favourable consumer appeal.

‘Packing’ is a process that speaks of company’s ability to contain economically man made or natural products for shipment, storage, sale or final use. It comprises the activities of wrapping or creating the product for performing the marketing functions more easily and economically.

In simple words, packing is the act of housing the product in the packages or containers like tins, cans, bags, jars, bottles, boxes, kegs, casks, and the like. A ‘package’ is a wrapper or a container in which a product is enclosed, encased, housed or sealed.

‘Packaging’ on the other hand, deals with activities of planning and designing of different means of packing the products. What are clothes to human-beings, so are the packages for the products.

Definitions:

“Packaging is the general group of activities in designing the containers or wrappers for the products”. Professor William Stanton

“Package design is the unique combination of colours, graphics and symbols to distinguishing the products.” John Bull

“Packaging is an activity which is concerned with the protection, economy, convenience and promotional considerations”. Professor Philip

Thus, it embraces the functions of package selection, manufacture, filling and handling. It is worth noting, here, that the word ‘packing’ is more comprehensive and, hence, covers ‘packaging’. Packing is concerned with product protection while packaging with product promotion.

Objectives of Packaging:

Packaging is a market and marketing necessity, at-least five objectives can be identified so far as product packaging is concerned. These are product protection, product identification, product convenience, product profit generation and product promotion.

These points can be outlined as given below:

1. Product protection:

The primary objective of packaging is protection of products or contents. It is the package that keeps the contents fresh, clean and un-spoilt by using moisture proof, vermin-proof and damage resistant materials.

It is powerful weapon to avoid shop-lifting, stealing in shops. This protection is given to the products from their birth till their death. Thus, product is protected against the possible theft, pilferage, leakage, spilling, breakage, contamination, deterioration, evaporation and so on.

2. Product identification:

The products available in a shop on shelves must be distinguishable for easy identification. One brand is to be compared and distinguished from another. Next to brand names, packaging is another easy and convenient method to identify the products of different producers or marketers.

It is obvious that the packaging of one product is very much different from another. Thus, it becomes a means of easy identification. The size, the colour combinations, the graphics used in each package are unique that can be easily remembered and recalled.

3. Product convenience:

A packaging aims at providing maximum convenience to the purchasers, producers and distributors alike. A nicely designed product package facilitates product shipping, storage, stocking, handling and display on the part of producers and distributors. It is caused by product density.

Good packaging facilitates the ease of product use by consumers. The best examples of this kind are: tear-tape, poring spouts, squeeze bottles, aerosol cans, flip-tops pull- tubes, wrappers and the like. They increase consumer convenience to a great extent.

4. Product promotion:

Product package is a powerful promotional tool. Packaging performs good many advertising functions.

At-least four are emphasized:

(a) Self advertising package design has supreme significance as it attracts consumers.

(b) Point of purchase display when we talk of display the two possibilities are ‘window’ and ‘counter’ where the first does the work of attracting the consumers or prospects to ‘get in’ and the second one gives the comparison of ‘competitive products’ for consumer choice.

(c) Media of advertising the general appearance and the selling features created by the packaging techniques decide the product success and

(d) Product publicity free advertising is done through package-insert or flap advertising.

5. Product profit generation:

Adequate and proper packaging can be the cause for generating increased profits to the producers and distributors. Because of product density created by good packaging, it reduces costs in storage, transportation and handling.

Further, the wastes that are common in marketing process can be minimized, if not eradicated. Further, sound packaging is an effective tool of sale-promotion. All these factors are bound to contribute towards profit maximization with reduced costs and improved efficiency.

Role/Functions of Packaging:

In modern dynamic and competitive marketing conditions, the role of packaging cannot be underestimated. It has become a highly specialized activity building the fortunes of producers, extending the stay of middlemen and expanding the convenience to the consumers. The role of packaging is self evident from the specific functions it performs.

The functions of good packaging are summed up as under:

1. It protects the contents:

The basic function of packaging from the time is to protect the contents of it from damage, dust, dirt, leakage, pilferage, evaporation, watering, and contamination and so on. The intrinsic values or the properties or the quality standards are maintained intact. Thus, the contents are kept fresh, clean, un-spoilt and unaffected.

Seasonal fluctuations in demand may be smoothened out through packaging. The canning and deep freezing of some perishable products like straw berries, orange juice, and mango pulp enable all the year round consumption on the part of consumers.

2. It provides product density:

It is packaging that increases the product density. Product density implies selecting such package materials, design and shape that it helps to use the limited space in the best way. Product density improves relations with common carriers, permits better use of space in storage and usage and increases the grace and poise of arrangement.

3. It acts as promotional tool:

Good packaging can sell more easily and quickly as it works as a promotional tool. It is a ‘silent’ salesman. As a promotional tool, it does self advertising, displaying, publishing and acts as an advertising medium.

Attractive package enhances the opportunity of impulse buying. It is the package, size, design, colour combinations and graphics that decide its ability to attract the valuable attention of customers or the prospects.

4. It provides user convenience:

Convenience in storage, transportation, handling and usage the product is another requirement. Good packaging does this in greater degree. As a result the marketing functions of the transportation, storage and handling are performed with ease and without wastage.

Consumers are greatly assisted so long as the product is in usage. In fact, neat packaging has brought home reduction in inventory costs, packing costs, space and time costs.

5. It facilitates product identification:

Product differentiation is the hall-mark of these days of keen competition. This process of product differentiation is furthered by effective product identifiers; one is branding and another is packaging.

The product package identifies the product no matter where you see it, under what circumstances you see it, or when you see it.

A package is product's personality, its reality. Product identification goes easy with distinguished packaging as it adds to its personality or image. Consumers' confusion over the large variety need not confound them and mislead them in consumer decision making because, they go by distinctive product packaging.

6. It allows easy product-mix:

Product-mix relates to the product-lines and assortment of sizes, colours, measures, grades, and package types etc., offered by the selling house. Changes in product-mix can be possible as packaging is to influence weight, size and dimensions of the products.

Such a selected sales or product-mix will facilitate product pricing, shipping, storage, stocking, handling, display and so on, in diversified market segments.

7. It extends product life-cycle:

The package of a product may be used in an effort to extend the product life- cycle. Updating design may help to give the pack a more contemporary image.

It is increasingly difficult to come up with totally new products, but any variety of packaging innovation can be introduced which offers features of a consumer wants and willingness to pay for a form of product innovation. This can be achieved through improved convenience to not only consumers but also to wholesalers and retailers by which packages are easy to stock, price, mark, display and identify.

Essentials of Good Packaging:

The objectives and functions of packaging have clearly demonstrated the importance of packaging in modern marketing setting. To get all these benefits, the packaging must be certainly attractive, protective, economical, convenient and adjustable. Experts opine that the following points to be fulfilled by a packaging to be called as 'good' packaging.

Therefore, the requisites of good packaging are:

1. It should protect the contents:

By very nature, every packaging is designed to protect the contents of it against the natural and artificial factors of damage such as dust, dirt, watering, evaporation, contamination, shrinkage, thickening, leakage, spilling, pilferage, theft, fire, flood and so on.

The intrinsic values or qualities of the products are to be maintained intact. A good packaging is the means for preservation of products from possible damage or loss in value.

2. It should be attractive:

Protecting, of course, is the primary aim and function of packaging. However, it should be capable of catching the attention of on lookers or those who come in contact with it. It is an attention getter. It stands out of others.

Package design, weight, material, colour combinations, graphics, texture, topography, illustrations etc. are to be pleasing to eyes and appealing to brain.

A well designed package can make a product more alluring. Cosmetics, gourmet foods, jewellery are packed in costly packages that are finely designed of matching material. There are many customers who buy more because, they are magnate by packaging than the contents. Package attraction is so important that it generates impulse buying.

3. It should bestow convenience:

The package so designed should grant highest degree of convenience to manufacturers, distributors and consumer alike. Good packaging increases product sanitation, ease in handling, transporting, storing, and using the packages.

Today producers are giving much importance to product use facilities. Thus, tear-tape, pouring spouts, squeeze bottles, aerosol cans, flip-tops, pull-tubes has come.

Consumers are seeking packages that are easy to handle, open and close or reusable. Thus, no one likes to buy ice-cream boxes that leak or a sardine canned tins that are hard to open or cereal boxes that are hard to pour. Consumer convenience is of top importance as today's marketing is consumer directed and oriented.

4. It should guarantee economy:

The points of protection, attraction and convenience need not be sacrificed for the economy. Economy is something that reduces not only packing and packaging expenses but also brings down other allied expenses such as transport, warehousing, tax-levies, handling.

It also has economy as good packaging wages war against the packets of wastages in the area of wrapping or catering. Cost reductions are possible through an alternative packaging form. For example, plastic pots as against glass pots for cosmetics.

The application of multi-packaging to low profit margin mass consumption food products allows more worthwhile price reduction than when one pack is sold on its own. This is of particular interest in case of premium offers. New packaging can extend the product life and reduce distribution costs. Plastic-fill bag instead of glassy bag paper bag extends life by weeks than days.

5. It should assure adjustability:

A good packaging has the ability of flexibility or is capable of being put to alternative uses. That is packing should be possible with different types of materials. Thus, plastic, metal or glass containers can be used to pack liquids, solids, pastes; granules while paper containers only solids.

It is not to undermine here paper packaging materials. If plastic, metal and glass have wider adjustability, paper packagings are known for cheapness and lightness. As far as possible, the packaging should be made to house different types of products.

6. It should be pollution free:

It is well known fact all over the world that packaging has environmental problem particularly the discarded packaging. That is why; there is trend towards recycling of packaging materials to do away with garbage.

In addition, research is continually carried out to develop new packaging materials that are bio-degradable or that minimize pollution problems. Consumable or reusable packages have been developed. Again, new materials of packaging are searched out in the light of shortages of conventional sources.

7. It should be informative:

Provision of adequate product information is another requirement. It provides information on package contents and facilitates handling for both the consumer and those associated with distribution.

It must identify the amount of product in the package, the content's brand name and other relevant information for the consumer. Detailed labeling on packaging is a must. This information need not be in verbose form.

It can be a combination of illustration of product, specifications, features uses, instructions to handle, prices and such other details, including legal requirements. It occasionally bears news contests, sweep-takes, prizes and premier. Information supplied on package is a sales message that is essential to establish trade relations.

Types of Packages:

When one speaks of types of packaging, there can be three types namely primary, secondary and shipping. Let us know about each type.

Primary Packaging:

Primary packaging is basically done for protecting the quality of the product and protection against possible effects caused by exposure. Much depends on the type of product its form namely, Solid or liquid, solids are packed in polyethylene paper bags, hard boards, bottles both glass and plastic.

The basic idea is to protect or preserve the basic ingredients. Say, a shampoo can be packed in sachets, pouches, plastic bottles, so in the case with other liquids. Tetra-packing is done in case of soft-drinks, juice, and oil and so on.

Secondary Packaging:

Secondary packaging serves for providing quantitative convenience of the buyers and sellers. Thus Shampoo Sachets may be in straps of 10, 20, 30, 40, and 50 and so on. The bottles may be 10, or 12, or 144 units put to together. This is done for additional protection plus meeting the consumer's dealers, convenient for exchange purpose. It also helps in storage.

Shipping Packaging:

Shipping packaging is the final packaging mainly for transportation and stocking purposes on wholesale basis. Thus, fruit juice boxes (tetra pack) may be put in cartons of 50, 100, and 200 and so on.

The care is taken to see that it helps in convenient handling of cartons in transportation and warehousing while loading and unloading to cause least damages. Here, the materials used are rugged and providing cushion in handling, storing and transportation.

The materials used for primary, secondary and shipment packages differ very much. A continuous research is going on to do away with conventional materials.

Packing Decisions:

Packaging decisions imply the series of decisions to be made to design the desired and acceptable kind of product package design for the firm. Therefore, the basic packaging strategy provides a foundation for tactical decisions.

The packaging strategy is to complement the overall product and marketing strategy. Packing is very important element of the marketing mix and its role in strategy should be defined very clearly.

Normally, following are the logical steps involved in developing a specific container design:

1. Come together:

As so many areas of the organisation are involved in the packaging decisions, all those people representing these areas should come together in the form of a committee. From within, marketing, physical distribution, manufacturing, research and development, purchasing, personnel and legal personnel and from outside the firm-advertising agencies, distributors, specialized engineers may be invited. This group should be coordinated and strongly endorsed by the top management.

2. Conduct packaging research:

Both formal and informal marketing research is needed to know the exact position of product, brand and package among the competitive offerings. Similarly, advertising and image related research may be carried out as many as package usage tests. Various tests may be conducted as engineering, visual, dealer and consumer.

3. Develop graphics and copy:

Package colour, illustrations and copy wordings must be developed in the back-ground of package sizes, design and cost. These should be consistent with overall image of the firm that desires.

4. Develop physical package:

The physical design stands for the actual design that includes shape, size, materials, colour, construction, closer and illustration. These factors make package a good silent salesman. The physical design must be functional yet reflect the product and company image desired like graphics. These package designs can be patented or trade-marked like brands. Now the container looks like meeting the needs of consumers and distributors.

In designing a new product package or redesigning the existing one, the manufacturers are to take into account the following factors:

(a) Nature of product:

The type of container to be used depends on the form and ingredients of the product. Transparent containers are most suited for attractive colour and appearance; vacuum-sealed containers for volatile ingredients; glass containers to minimize chemical reactions otherwise possible in plastic and metal packages.

(b) Costs:

The cost of packaging must be absorbed by production economies, increased sales volume or a higher price. The packaging material, label, closure as well as costs of filling, handling, distribution and breakage of package are important.

(c) Family resemblance:

If the product is one of a number of related items, it is but desirable to design the package to conform to the containers of other products in the line to assist consumer and dealer identification.

(d) Advertising value:

Unique shape, attractive design or a novel closure gives a package greater sales and advertising value. In order to get maximum advertising and display value, a package should have distinctive design and unique features.

(e) Legal requirements:

The packages must conform to the laws prohibiting the deception of consumers by the use of false bottoms, slack-fill, and other means of giving the impression that a package contains a larger quantity than the case. There are legal requirements prescribing the copy appearing on the labels of food, drug and cosmetic packages.

5. Test the design in the market:

Though package testing is part of an overall product concept test or test-marketing, special package tests must be conducted in the markets. The best way is to rely on indirect replies got through dealer's feed- back.

The tests conducted with customers must be indirect and subtle to get more authentic reactions. Either indirect psychological tests or stores test through marketing tests (research) should yield good results.

6. Do environmental checking:

The packaging development decisions may be dictated by environmental factors such as legal forces, ecological forces and social forces. Thus, issues like consumer packaging safety, disposable packaging, and the quantity of packaging, littering, and misleading labeling and so on. This step would save the skin of the firm.

Packing Strategies:

At or a given moment of time, a company has alternative packaging policies or strategies, once it develops an agreeable packaging concept and packaging proper is going to take these alternative shapes as discussed below:

1. Family packaging strategy:

It is a packaging option in which packages of the entire product-line closely resemble one another. To put in other words, it is a kind of strategy where the major features of the packages in respect of the entire product-line look alike.

For instance, Camlin stationery products and packages have the black tiny camel on items be it an ink bottle, a compass, a gum bottle, colours. The major plus point of this strategy is that any new product in identical package enjoys the same market reputation and acceptance as the others.

This also reduces the packaging costs because of bulk-buying of materials, printing, sizes and shapes. However, such a policy has the minus point in that if the old product is a failure, the new product is more likely to fail because of same product package or the resemblance.

The distributors have a false psychological feeling that they are overstocking a particular brand or package of producer. It also affects the consumer psychology that the dealers do not stock varieties as same packages over-shadow the other packages.

2. Multiple packaging Strategy:

It is a kind of strategy wherein number of closely related but heterogeneous products used by one consumer is placed in a single package. Such a package conveys the idea of an ideal matching set that one should possess. Thus, in case of men, shirt, pant, necktie, kerchief, cuff-links, tie-pins, may be packed together.

In case of ladies, it may be a skirt and a top, hanky, bra and panties, a belt might be packed in one package. It may be an assorted scent collection package for men and women separately. Such a strategy is followed in India by a few companies such as Zodiac and Park Avenue.

It facilitates acceptance of a new product idea by a consumer who may normally not like to venture into buying it. This policy is a success when the items in the package are in different stages of life-cycle.

However, there is a danger of whole package being rejected through a consumer is very interested in one or two items. For instance, in case of Zodiac Company, one might like say, tie and kerchief but not other products. As he is to buy all, he will even run away from tie and kerchief.

3. Reuse packaging strategy:

Reuse packaging strategy is one wherein the manufacturers offer their products in such packages which can be reused after the consumption of the contents of it. ‘Maltova’ food-drink was offered in a glass jar which might be used as a tumbler. Amul butter and shrikand are presented in plastic jars which are reusable. Nescafe instant coffee jars can be used as lemon-set.

Similarly, assorted biscuits, sweets and coffees are presented in attractive tin-tops which are reusable as embroidery sets by house-wives. Reuse packaging stimulates repeat purchases as it offers the added benefit for the same price.

In order to continue this consumer interest, the reusable packaging should be changed in shapes, sizes, designs, colours and the like.

4. Ecological packing policy:

Use of the resources of the environment results in pollution problems. It is the social responsibility of every business house to reduce the extent of pollution of any kind in any form.

Today's greatest concern of the society has been the pollution created by discarded packaging. It is throw away containers that have created problems. To preserve the physical environment, a company is sure to design a matching packing strategy.

The purposes of such a strategy may be returnable' bottles and containers, use of containers that decompose over a reasonable period of time, use of light weight packaging material and arranging of packaging material and recycling it.

That is why; many manufacturers are now packaging their products in reusable containers as a means of recycling the packaging materials. Further, research is continually carried out to develop new packaging materials that are bio-degradable or that minimize pollution problems.

Product Labelling:

Labelling is another significant means of product identification like branding and packaging. Labelling the act of attaching or tagging labels. A label is anything may be a piece of paper, printed statement, imprinted metal, leather which is either a part of a package or attached to it, indicating value of contents of price of product name and place of producers.

It carries verbal information about the product, producer or such useful information to be beneficial to the user. Thus, a label is an informative tag, wrapper or seal attached to a product or product's package.

The Purposes of Labelling:

1. To bring home the product features:

A label goes on describing the product specialties which makes the product a quick-mover. It gives its correct use. Thus, bottle containing poison, if not labelled, it fails to tell about its contents. Wrong labelling does more harm than no labelling at all.

2. To facilitate the exchange process:

As good many competitive products are available in a given product range, label helps in avoiding the unwanted confusion. This is of special importance in case of drugs and chemicals where even spelling mistakes prove fatal to the users. That is why; druggists and chemists are having qualified pharmacists in the pharmacies.

3. To encourage self-service:

A lable is a strong sales tool that encourages self-service operations. If the customers are supplied with necessary information of the contents of the package or the container, as its contents, weight, use, price, taxes, and instructions and so on, consumers can pick the package of their choice from shop shelves. Thus, labelling has a special role to play in self-selling units.

A label may be descriptive, informative or grade designating or a combination of these. A 'descriptive' label describes the contents of the package or the ingredients of the product. Thus, a descriptive label on a cane of pineapple describes the contents by size, weight, number of slices, syrup cups and the number of servings.

An 'informative' label includes detailed description with emphasis on how the product is made? How to use it? How to care for it? In order to drive maximum satisfaction. A 'grade' label designates customary or regulated standards. Thus, a pack of ghee or honey might have 'Ag-mark' grading, certificates as A, B, or C.

4. Product related services:

Generally, a product is surrounded by various services that make it easier for the consumer to use, pay for and maintain the product, in addition to its branding, packing and labelling. These include the product support services, credit granted guarantees and warrantees given and after-sale services extended. Following is the brief outline of these points.

(a) Product support services:

A product support service is any service that helps the consumers to use the product, thus, a furniture store may hint on interior decoration, a short course may be given on how to use camera or a copier or a computer or a washing machine or a vacuum cleaner. These include installation services and demonstrations in case of items like heaters, air-conditioners or other mechanical devices.

(b) Product credit service:

Credit is the breath of modern marketing and it occurs at all levels. Thus, manufacturers grant credit to distributors and dealers and directly to buyers; wholesalers to retailers and retailers to consumers.

Instalment and hire-purchase schemes are quite common these days. Commercial banks are granting liberal credit to encourage 'book now and pay later' schemes. Stiff competition and high profit margin encourage the business units to grant credit on liberal terms under different plans to suit the individual needs.

(c) Product guarantees and warrantees:

Giving a product guarantees and warrantees has been a common thing these days. A guarantee is a general policy of a manufacturer in respect of defective products. It is a promotional device of making broad promises that may or may not be legally binding.

A warranty is the assumption of responsibility by the manufacturer and his distributor for the clear title, quality, character and suitability for intended use of products sold.

Thus, warranty is more specific undertaking for repairing or replacing the merchandise. In both the cases, a definite period is stipulated for replacement of parts and damages can be claimed provided the conditions of warranty are fulfilled. Thus, any refrigerator company giving five or seven year warranty or guarantee for its heart the compressor is doing so only with stabilized electric power and not otherwise.

iv. After-Sale Services:

The responsibility of manufacturers and dealers of industrial and consumer durables is not over just after selling. They are expected to extend after-sale services both during and after guarantee period.

These after-sale services are those concerning installation, repairs, maintenance and provision or spare-parts. These are extended generally at no extra cost during warranty period and thereafter at reasonably low prices.

This practice of extending after-sale services is quite common in case of house-hold items like fridges, TV sets, sound systems, sewing machines, washing machines, kitchen appliances and office products like type-writers, duplicators, copiers and other appliances.

In fact, availability of after-sale services in time, at a place, at least cost is a precondition for increasing company sales.

Brands and Branding:

Almost every concern wants to name its products. These names given are brand names. Branding plays more role than a mere name. It is because; brands name is quite different from ordinary name.

What Brands and Branding Mean?

A brand is a symbol, a mark, a name that acts as a means of communication which brings about an identity of a given product. Brand is product image, brand is quality of product; brand is value; it is personality.

It is nothing but naming the product; and naming product is like naming a child. Parents know that the success and happiness of their children is primarily dependent on the development of their character, intelligence and capacity and not on their name. But they, nonetheless, take care in naming their children for the identification.

Products are children of manufacturers, unlike human children; products are not brought into world by accident. There is conscious decision to give birth. Once a product takes birth, it needs an identity and that is brand; and recognizing it as branding.

'Product differentiation' is the note-worthy feature of manufactured goods; one such device of product differentiation is branding the products. A brand is a symbol, a mark, a name, that acts as a means of communication which brings about an identity of the product. Brand is the quality of a product. Brand is the value.

The aims of branding are to give personality to the product, to make its existence known to the public; to create preference for the branded product; to control the price of commodities; to impress about product performance. For instance, 'Tore Nylex' Sarees, 'Terene' mark on Synthetic fibre cloth, Baby of Murphy, Dog of His Master's Voice, 501 Bar Soap, Club of Arvind Mills, are the instances of brands or trade-marks. There is a slight difference between a 'brand' and a 'trade mark'. 'Trade mark' is a legalized or registered brand. Such legalization avoids imitation by rivals. For instance. Parley "Gluco" is a trade mark, which cannot be imitated under Names and Emblems Act in India.

While branding, the dealer or the producer must select such a mark, or name or symbol that is easy to remember, appealing to eyes, ears, and brain. It must be short, sweet and attractive. For instance, the Honey Dew Cigarettes are having a trade mark of 'black elephant' on yellow packet which is popular as 'Pivala Hatt' even amongst millions of illiterate people of India. Same is the case with 'Murphy Baby' or 'Yellow Thread' of 'Sinner Beedies'.

Role of Branding:

None finds a pragmatic concern aloof from this branding. Brand names came to create identity to distinguish one product from another. Identifying is essential to competition because, without means of identification there is no way of making a choice except by happen stance. Brand names not only facilitate choice but they spur to a responsible action.

Following points pin down its precise role:

1. Brand is a Massive Asset:

ADVERTISEMENTS:

Brand is considered as a major intangible asset because all the physical assets such as plant, equipment, inventory, building, stocks and bounds can be duplicated or copied very easily, however, it is almost impossible to duplicate brand name.

It has been proved, as there are many case where the firms have gone to hell still brand remained high in the sky.

2. Brand is a Promotional Tool:

Sales promotion is founded on the idea of product identification or product differentiation. This difference is done by a brand. Major weapon of product popularization is advertising. And it is futile to advertise a product without a brand name.

ADVERTISEMENTS:

Even the work of salesman would be a failure in absence of a brand name. Thus, branding plays a highly creative role in determining the success or failure of a product.

3. Brand is a Weapon to Protect Market:

Once a consumer has tried and liked a product the brand enables him to identify so well that he is tempted to levy it again. For instance, a house wife using VIM cleaning powder may not use other powders like BIZ, ODOPIC etc., as she is soaked in with VIM. That is, the product earns goodwill. In other words, absence of brand name will make repeated purchases stand still.

4. Brand is Antidote for Middlemen's' Survival:

If a product wins consumer reputation, the manufacturers gain control over product distribution. The class of middlemen always tends to go in for a successful brand. That is, without brand identification, these middlemen find it difficult as to what to buy and sell.

In fact, brand names can be so strong and penetrating that the very survival of middlemen rests on their efforts and ability to sell a powerful branded product.

5. Brand is a Means of Identification for Customers:

Brand is the easiest way of identifying product or service that a customer likes. For him, brand is value, quality, personality, prestige and image.

A branded product is a distinct product in his eyes. Thus Philips bulbs are regardless of where they are bought.

Again, branded products tend to have improvement in quality over the years. It is naturally out of competition. Thus, Aspro tablet of 1960 was quite different from micro-fined of 1970s.

A Good Brand Name:

Certain factors make a brand name good one. They are:

1. It must be Easy to Pronounce and Remember:

For instance, "HOECHST" is difficult to pronounce. On the other hand, "Murphy Baby" and 'Click' are fine example.

2. It should be Short and Sweet:

The name must be short yet sweet, appealing to eyes, ears and brain. Mukund and Mukund, Panama, D.C.M., Bombay Dyeing, Bata, Tata, etc., are of such kind.

3. It Should Point out Producer:

The name or symbol should be given connotation of the product, producer, etc. The best examples are NELCO, MICO, LT. AMUL, B.T. INDAL etc.

4. It should be legally protectable:

The brand name must lend them for legal protection. A brand name, legally recognised, is known as trade mark. Normally, it depends on the will and discretion of a producer, middlemen than on brand name.

5. It Should Be Original:

The brand name selected must not be general but specific. It must be such that it is not easily copied by others. Hardly does one finds the use of brand "Philips" by imitators. On the other hand, "Gluco" and "Glucose" biscuits are different.

There is difference in "Upkar" and "Upchar" Supari. But for a common man, it is more difficult to identify and differentiate.

6. It Should Reflect Product Dimensions:

A good brand name is one which reflects directly or indirectly some dimensions say product benefit, function, and results and so on. For instance EZEE of Godrej Company is really easy to use for better results; another brand GOOD-NIGHT of a mosquito repellant pad implies the user says 'good-night' to mosquitoes as he is going have good and sound sleep at least eight-hours. PUMA brand shoes are the symbol of speed as panther is shown.

Merits of Branding:

The merits of branding can be discussed from the angles of manufacturers, middlemen and consumers:

A. Merits to the Manufacturers:

The makers of the products stand to gain because brand has a definite role to play to assist them in effective marketing goods.

These are:

1. Products Get Individuality:

For any product, we have many competitors, though yours may be the first company to conceive and give birth to new product. Product, like a baby has to have a name which symbolizes the efforts and resources put into bring to light that product. Your product, if branded will has its own personality standing out rest of all the competitors.

Take a simple case of tooth paste ; the Colgate in its variety, has many other competitive brands like Pepsodent, Forhans, Neem, Dentoback, Anchor, Signal, Babool, Miswak, Glister, Himalaya Dental cream, Promise, and so on.

For a customer "Colgate is Colgate" or "Promise is Promise" where the customers are divided and the producers have their own market share depending on the value given by the user to a particular brand as he or she perceives it.

2. Control of Product Prices:

Control of retail price is a significant factor because each consumer is quality and cost conscious. Each pack or a wrapper contains in the message the MRP-Maximum Retail Price inclusive or exclusive taxes depending on the situation.

Such facility makes the producers to have sound sleep because the greedy middlemen-may is wholesalers or retailers would have charged any price.

Even an uneducated consumer is well informed through ads especially TV, Cinema and other audio-visuals or audio sets. He or she insists on buying a product at printed price on the pack. Thus, the producers have the solace that products are reaching the final user at the prices printed that are most economical to the consumers.

3. Increases Bargaining Power:

Good brand and branding gives greater bargaining power to the manufacturer with the dealers. This is because; there is already a 'pull' in favour of the product. Hence there is no need for a great 'push' by retailers.

As, it is easier to sell or market branded products, wholesalers and retailers prefer to stock and deal in branded products than non-branded. This gives an edge over dealers to the manufacturers which empowers or strengthens the hands of manufacturers to dictate the terms in their favour.

4. It Reduces the Advertising Costs:

Advertising plays an important role in communicating the ad message of the manufacturers to the consumers directly and middlemen indirectly. A product which is known to the consumer hardly needs extra advertising expenses each time.

At the most he has to make the customers to remember by reminder advertising because of large-scale brand proliferation and competitive advertising and constant storming of consumer brains. The over expenditure drops down in case of branded products. This is an advantage of consumer loyalty that is created by brands-the effective brands.

5. Ever Increasing Demand:

Powerful brands have the capacity to create, maintain and extend the demand for a product. The strong bonds have longest life. A recent study conducted by A and M Magazine report, the top ten brands of the year 1999 were Colgate, Amul, Dettol, Britannia, Life boy, Ariel, Horlicks, Lux, Zee TV and Doordarshan.

This power brand is all India which differs from zone to zone-south, north east and west. Once a brand is built or in sight and mind it leads to word of mouth advertising; that it rolls on its own leading increased demand.

6. Introduction of New Product is Made Easy Task:

Launching of product-particularly new one is the toughest job. However, the consumers who are loyal to the brands or products of a particular company say, HLL, Godrej, Colgate Palmolive, virtually, they are addicted to that brand. This is particularly true in case of smokers, soaps, tooth paste, hair-creams and jells, scents and deodorants.

This is equally applicable to consumer durables. In each case, a particular brand ranks in case of a product. In case such a company is launching a new product, it will be easily accepted because of past trust in the company. Thus, HLL from 'Liril' trying for 'Fa' soaps and deodorants for men and women. Thus, the job is made comparatively easier.

However, in all cases, it is not true. For instance, Philip's company known for sound gadgets failed successfully by introducing dry- cells and shaving blades.

7. It is A Powerful Weapon of Product Diffentiation:

Day by day, the markets are getting more competitive and market driven and consumer driven. In such case the companies that succeed in differentiating the product can carve niches for themselves through this weapon.

One is aware of the onslaught of Mc Donald's and Domino's Pizza impact. Indian cooperative namely Amul came out with Pizza huts as distinct product for using cheese that is produced.

It is a grand success and is now felt that 'Pizza Huts' are preferred to Mc Donalds and Domino's. This product differentiation combats keen competition by positioning and repositioning the product.

One is aware of the war going on between Coca-Cola and Pepsi Cola. The Coca-Cola working with "Kuch bhi ho jai Coca Cola Enjoy". Pepsi with "Dil Mange More". Now come out with Pepsi "Le Chel Le Chel" on the contrary Coca- Cola changed its slagan "Thunda Matlab-Coca Cola".

B. Merits to Wholesalers and Retailers:

The middlemen who connect the manufacturers and consumers stand to benefit the following because of branding:

1. Quicker Sales:

The middlemen wholesalers and retailers need the shorter time for sales to take place. In case of unbranded goods and weak brands, they are slow moving. It is because, sales stem from final consumers.

That is consumers should approach first the retailers and then retailers to wholesalers and they procure from the producers or out of stock the delivery takes place. The question of prospects being converted into customers is a big process which is done by perfect promotion mix plus the power of the brand.

2. Advertising and Display of Products is Rendered Easier:

A product which is known by its name or symbol or combination which we call brand has the magic which needs no such advertising. Display advertising both window and counter will be a regular feature which as the merits of POP point of purchase displays. They have a fixed schedule making movement from one rejoins another by display-department.

3. Increases Market Share and Control over Market:

Each supply chain in target market helps to increase the share in total market sales of that market and can do better than competitors. That is by having increased market share; it will have market leadership creating challengers by sitting in driver's seat. This means the company has greater control through middlemen. It is natural that middlemen will take pride in doing so.

4. Introduction of New Products is Rendered Easier:

The retailers are the first line army who are in close touch with customers. Retailers are the purchase agents or officers for customers because it is the customers who seek advice from the retailers as to what to buy and what not to buy.

Retailers have no hesitation to recommend new products. Again, they have training and hints from wholesalers. Thus introduction of new products is not a botheration.

5. Branded Products Have More Stabilized Prices:

This has very good impact in combating competition. When the branded products of various companies are there in the market available for they go by quality and not by price. That is, the competitors do not have much ice-way for price competition.

Only way to compete is by quality. When your product is superior at that consumer realize that it is so, you have won the battle. This reduces competition as price comparisons are not made, if price differentials are marginal.

6. Economical Way of Doing Business:

When the wholesalers and retailers decide to trade on the brands of manufacturers, they need not create any brand. Brand creation is not a joke that involves investment in terms of time, talent and treasure. With all that they may not succeed. That is why most of the wholesalers-especially try to deal on brands of manufacturers.

C. Merits to Consumers:

The classes of consumers for whom the products are produced as per their specifications or near specifications stand gain by branding or branded products. These are:

1. Brand Stands for Quality:

When consumers are buying the products, they are selective as certain brands as it symbolizes the quality standards. Unbranded products, to have quality but no assurance as greedy producers may say something and pass on spurious stuff to the customers.

When the days have come that duplicating of even life-saving medicines right from stuff to packaging so much so that the consumer fails to say which is "original" and which is "duplicate" though the measures are taker as "barcodes" and 'holograms". Generally brand stands for quality and quality assurance where the satisfaction of consumers lies.

2. Consumer Protection against Cheating:

The hard earned money of consumer does not go waste because; the manufacturers print on each pack or container the MRP Maximum Retail Price inclusive or exclusive of local taxes.

Therefore, the retailers can not charge more than what is printed. Even if they do so, they are losing customers as the products are available at right prices in other outlets.

Again, the expiry date, date of manufacturing, batch number and the like are given which help in setting disputes as and when arise, if any.

3. Branded Products Reflect their Life Styles:

Branded products speak of the personality of a product and therefore the personality and the life style of consumers. One can easily say, by the use of certain brands of toiletries, dress-materials, ready garments, shoes, watches, white goods, to what class the consumer belongs; it reflects their quality of life.

When a person arranges wedding reception party in 5 star hotels, one can easily guess what the purchasing power of the party involved is. Each person, each family wants to have their own image depending on their paying or spending capacity.

4. Steady and Regular Supply of Products:

Consumers are not only worried about the supply of quality goods at reasonable rates but equally interested in adequate and regular supply of products. Each individual, each family has a family has not only budget but the schedule of supply of goods in definite quantities.

This supply chain should not be broken. Normally, it does not happen in case of branded products because there is no scope for bungling.

5. Pre-valance of Stable Prices:

Between branded and unbranded products, branded products have prices printed as to what the consumer is to pay as MRP maximum retail price. In case of unbranded products manufacturers normally do not print MRP or maximum retail price.

The act of branding the product is in favour of consumers as regular prices are printed that stay regular over a particular period and it does not give chance to retailers to manipulate, as they can do in case unbranded products.

The facility of comparatively stabilized prices accrues to those who use branded products. Whether it is a premium brand or non-premium brand prices are more or less stabilized over a period of time.

Brand Success:

Brand success is the ability to retain a reasonable market share despite market redefinitions. Mr. Derek Abell defined the term “redefinition” in his article “Strategic Windows” published in Journal of Marketing July 1978 p.p. 21 to 28.

The phrase market redefinition covers three categories of redefinitions. These are segment redefinition product redefinition and category redefinition. It pays to understand these components to have full understanding of market redefinition.

Segment Redefinition:

What Is It?

Segment redefinition means shifting of people from high price segment to low price segment and vice versa. In the past detergent market was seen as different from detergent cake market by marketers in India.

Powder was priced high and the cake low. The entry of Nirma changed this. Nirma is a detergent powder but was priced at almost one third of the leading competitors which changed the whole complex of the market. Nirma became Rs. 5 billion brand and in the process redefined the market.

The consumers from high price segment migrated to low price segment. After Nirma, several low priced detergent powders were launched such as 'Wheel' Ariel Super- saver. This is a case of "Segment Redefinition". The opposite was true in case of Titan Watches which were launched after decades of HMT Watches.

Titan watches were high priced as compared HMT watches. Large number of consumers moved from HMT segment to Titan-Segment. The reason was repositioning where Titan did not remain as only a chronometer but a product reflecting a better quality of life or a life style product.

Product Redefinition:

What is it?

Product redefinition stands for presenting the existing product in; a changed version may be its package or its form where some qualities are maintained but product becomes more appealing. Two solid examples can be given here. Introduction of Satchet' shampoo and gel dental cream.

Generally, lower quantity packages cost more per gram than bigger packages. In case of Satcht Shampoos, it is reverse. The reason for this is that low priced Satchets were pioneered by 'Velvette' and 'Chick'.

These Satchets were procured from Small Scale packaging units where the package cost dropped down considerably. The result was that 'Velvette' provided the consumer with larger quantity of Shampoo at lower price than bottled one.

Hence, 'Velvette' gained rapidly high market share at the expense of non-satchet shampoos. 'Chick' followed the suit. It also gained good market. The result was H.LL's brands namely 'Clinic Plus' and 'Sun-Silk' lost initially good market share. Soon, HLL redefined their product by giving it not only in Satchets but adding a 'hair-conditioner'.

This satchets account for 50 percent of the total shampoo market and other 50 per cent still remains bottled. Another case is of tooth paste. Though we have even today white tooth pastes, were predominant till, 1950. In 1989, HLL introduced "Close up gel" with ad masala.

As a result market leader Colgate Dental Cream lost its ground. It was introduced on the 'Svetal Confidence" platform than "family" platform". With no other alternative Colgate came out with Colgate Gel whereby it gained 8 percent increase in market share.

Today, gel paste accounts for 33.33 per cent of the total tooth paste market. Those who neglected this 'gel' version like Promise, Babool, Forhans, Cibaca and others lost their market share. It means product redefinition takes place when the products form, shape, taste, packaging and the like change.

Category Redefinition:

What is it?

It is a case of redefining the category of products. When category gets redefined a product that was till now put to different use becomes a competitor. Take shampoos face competition from soaps which are used as hair wash say Shikakai Soap.

Further, herbal powders like 'Raga', 'Meera' and herbal shampoos like 'Nyle', 'Ayur'. When shampoo came as a hair wash by using new ad theme, say 'Clinic Plus' made a headway and traditional hair washes faded.

Today use of shampoo is not weekly but every alternative day which has been made possible by very creative ads where a bald headed person says '"na" Monday 'na' Thursday 'na' Sunday".

Category redefinition causes a completely different product to become a competitor. It causes use or user to change. It is well known fact that reinforced concrete pipes, PVC pipes are all competitors to asbestos pipes.

However, no body imagined this initially because they were operating in different ranges of diameters, length and were made of different materials. The scope of fixed and cordless telephone market is redefined by cell phones while wireless in local loop is trying to redefine the scope of the cell phone market itself.

Even Fax and Wide Area Networks (WAN) are redefining the document market which was basically the domain of courier service agencies. Thus, 'market redefinition' has these three aspects which together bring changes in the market that alter the terms of competition significantly.

Once we are equipped with the background material, it is now the ripe time to understand "brand success". Brand success is the ability to retain a reasonable market share despite market redefinitions.

Professor David Arnold gives four criteria for the success of a brand.

There are:

(1) At the product level, it should deliver benefits.

(2) It should offer some intangibles besides tangible benefits.

(3) The benefits it offers must be consistent with its personality and

(4) The benefits offered must be relevant to the customer.

According to Stephen King in his book "Developing New Brands" published by Pitman Publishing Company, opines that a successful brand is one that delivers something more than function benefits.

It is worth-while to understand the other side of the story namely, brand failure Mr. High Davidson, in his article "Why Most New Consumer Brands fail" Harvard Business Review March, April, 1976 pp. 127-132 analyses brand failures in England and comes to the conclusion that most brands that fail are "me-too's".

A brand fails if the product displays one or more of the three features:

(1) Insignificant price or performance disadvantage

(2) Lack of difference from the existing brands

(3) A pretty old tried idea.

Mr. Rajan Chibba, in his article "Guarding against Brand Failure" published in 'Brand Equity' section of Economic Times of India October, 5, 1993 calculates the Delta Habit Factor to predict the success of a brand.

The Delta Habit Factor (DHF) is an Index calculated on Six Variables that measure the change of usage habits of consumers.

Therefore, according to him brand success is based on factors:

(1) Changing duration of consumption of the product.

(2) Evolving new occasions for the use of the product

(3) Changing sharing habits of the product

(4) Changing buying habits of the product

(5) Doing new things

(6) Changing the frequency of consumption of the product.

According to him the key to the success lies in the ability of change habits or usage or buying or both habits. This statement or finding goes against what is already experienced. That is a consumer will not change his habits unless sufficient and convincing reasons are provided to him or her for shifting over.

Instead, Mr. Chibba Rajan should have said that products that assist consumers functionally and psychologically are the ones that achieve success.

Let us take some four consumer products and brands and see whether they are success or failure. The four products are shampoos, talcum powders, toilet soaps and tooth pastes:

1. Shampoos:

The Indian shampoo market is of the order of Rs. 3500 million. The players in this market are HLL (HUL) with Clinic Plus and Sunsilk. Clinic plus is medicinal and Sun-silk beauty as platforms. Procter and Gamble has pentene for shining hair; HLL again introduced to overtake this Pantene namely Organics.

Palmoline launched Optima. Another variety is Lux launched by HLL as Cosmetic Shampoo. With this, <+>P&G could not keep quiet and introduced Head and Shoulder as anti-dandruff shampoo Velvette launched Rupee on Statchet.

This was followed by Beauty Cosmetics Chick brand on similar lines. Nyle herbal shampoo and Meera herbal powder another powder was Raaga. Against the Nyle herbal shampoo came Ayur. Other players are Lakme of Lakme Ltd., Ponds of Ponds Ltd. Ultra Doux by Gamier Laboratories. In addition we have Shikakai Soap of Godraj.

The successful brands are Ayur, Clinic Plus, Nyle, Meera, Organics, Pantene, Sunsilk; the failures, are, Click, Halo, Lakme, Batmoline, Ponds, Raga, Ultra Doux and Velvette.

2. Talcum Powders:

The talcum powder market of India is about 20,000 tonnes in size and growing slowly. The players are Ponds Dream flower Talk, Haven's Garden popular in UP and Bihar and sold in large quantities because of lower prices.

Santoor's Talk—speaks of 'Daylong Freshness" Cinthol of Godrej Liril of HLL Zee—as south based and Yardley—Bond Cosmetics a premium brand. Others are premium by JK Helene Curtis and Denim is HLL.

Success or failure rating is done on the basis of positioning, packaging, and printing. The successful brands are cinthol, gental of T.N. is a success, Heavens garden, Liril, Dream Flower, Ponds Magic, Zee, the failures are Exotica, Sandalwood, Santoor, Yardley. About Denim, it takes time to say whether it is success or a future.

3. Toilet Soaps:

The size of toilet soap market is about 4.5 lakh tons where 200 brands are there. The national brands manufactured by three companies namely, HLL, Godrej, Tata Oil Mills Company (TOMCO) of Tata TOMCO has been taken over by HLL.

Godrej has alliance with Procter and Gamble. It is impossible to speak of all 200 brands of all companies. Let us take brands of three HLL, TOMCO and Godrej. Rest all are put in other brands.

HLL brands are Lifeboy, Lux and Rexona, Liril. Other brands are Pears and Breeze. TOMCO brands are Hamam, OK bath, Moti, Ria, Jai, Godrej brands are Cinthol, Cinthol Ultimate, Ganga Evita, Fresca, Vigil Limelite, Crowning Glory, Marvel, Coming to other brands Nirma Beauty of Nirma Chemical Works, Santoor of Wipro Consumer Products.

Mysore Sandal of Karnatak Soaps and Detergents Ltd., Margo of Culcutta Chemical Works, Dettol by Reckett and Coleman Ltd., Palmolive by Colgate Palmolive. We must make a special mention of Calcutta Chemical Works' Aramusk man's soap, HLL's Le sancy long-lasting.

Based on positioning, printing these brands are classed successful or failures. Successful brands are Cinthol, Dettol, Hamam, Jai, Lifebuoy, Lifebuoy Plus, Liril, Lux, Lux international, Margo Mysore Sandals, Nirma Beauty, Pears, Rexona, Santoor; the failure brands are Aramusk, Breeze, Camay, Crowing Glory, Ganga, Le Sancy, Nirma bath, OK bath, Palmolive, Ponds, Protex, and others.

4. Tooth Pastes:

The size of tooth paste market is 55,000 tons. The players are Colgate HLL, Geoffrey Manners, Balsara Hygiene Products Vicco Laboratories—TOMCO, Ponds, Latest Nirma Chemical Works and Anchor Brands of Colgate are white creams, Colgate Gel, Calciguard, Total.

Hindustan Lever Limited products are close up. Signals Pepsodent, Gel Versions Balsalras brands are Promise and Babool, Prize Geoffrey Manners Forehans, Viccos-Vicco- Vajradanti. TOMCOS Efferent, Ponds of India Ponds, anchor is a diversification of electrical unit.

The success or failure is based on market growth rate, pricing, positioning and packing. The successful brands are close up, Colgate Dental Cream, Colgate Gel, Pepsodent; Babool and Miswak can do well.

The failures are Cibaca, Forhans, Nirma, Ponds, Prize, Promise, Promise JFK (Just for Kids) failed, Signal, Vajradanti and Anchor is are get to make debut.

Product Mix, Product Line and Product Items

Article shared by S. Jaideep

Product Mix:

Product mix of a company is made of all product lines and items. It includes the total number of varieties or models offered by the company.

Let us define the term:

Philip Kotler:

"A product mix is the set of all product lines and items that a particular seller offers for the sale to buyers."

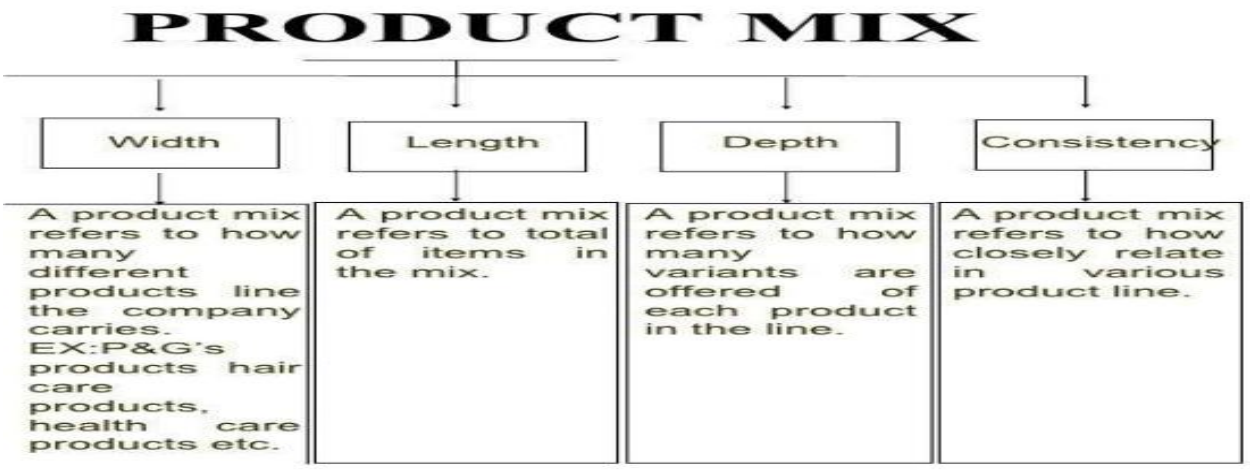
William Stanton:

"The product mix is the full list of all products offered for the sale by the company." Thus, product mix means total number of products items offered by the company. For example, HMT Company produces watches, machines, tractors, plants, tools, and equipment's, and many other products. In each product group, a number of varieties are offered. The set of all these products (main range) and product varieties in each range can be said as product mix.

Product Mix Dimensions:

Product mix of a particular company includes major product lines.

Product mix has various dimensions, such as:



i. Product Mix Length:

It refers to the total number of items (in all the product lines) in product mix. For example product mix of Bajaj Company has more than 100 items in various product lines, such as fans, bulbs and tubes, heaters, motorbikes, shooters, rich-show, processing machines, and many other ranges.

ii. Product Mix Width or Breadth:

It indicates the total number of product lines a company carries. For example, two wheelers (including various models) constitutes one of the product lines of Bajaj Company.

iii. Product Mix Depth:

It refers to a number of varieties in forms of sizes, colors, and models offered within each product line. It can be said as the average number of product items offered by the firm in each product line.

iv. Product Mix Consistency:

It refers to degree to which different product lines are related in one or other ways. It indicates how closely various product lines are related. The consistency can be judged on the basis of production requirements, uses of products, distribution channels, or some other ways. For example, product lines of Philips India Ltd., include radios, bulbs and tubes, different television sets, VCR, CD-DVD player, tape recorders, etc., can have higher consistency. While Hindustan Machines and Tools produce wrist watches as well as tractors, it is called inconsistent product mix.

Product Line:

Product line is a group of product items that can satisfy the same needs and wants, they have more or less similar features. For example, Bajaj Auto Ltd., in its two wheeler product line, makes Discover, Boxer, Boss, Pulsar, Cub scooter, Bajaj Sunny, etc.

Philip Kotler:

"Product line is a group of products that are closely related because they function in a similar way, are sold to same customer groups, are marketed through the same type of outlets, or fall within given price range." Thus, product line is the group of similar products. The similarity may be seen in one or more ways. Product line consists of product items belonging to same class.

The definition suggests following five ways the items are closely related:

i. They function in similar manner.

ii. They offer similar benefits, or meet similar expectations.

iii. They are sold to similar customer groups.

iv. They are marketed by similar outlets.

v. They fall within same price range.

Characteristics of Product Line:

Main characteristics of product line can be listed as:

1. Product line consists of closely related product items. Difference is only found in terms of colour, size, shape, model, performance, weight, and capacity.

2. It is a compose of various similar items.

3. Product items are complementary to one another. For example, tube, tyre, and related materials.

4. There is difference in price. For example, Hero Honda charges different price for different models.

5. The purpose of offering similar items in each of the product line may be to attract customers by offering more varieties, and to create a good image or reputation.

6. Different items of a product line can be manufactured using same technology and/or inputs.

7. Product items in each of the product lines are distributed in same distribution channel. That is, similar outlets market them.

8. Product items in each product line function in same manner. They need same technical skills to use them.

9. They are sold to similar customer groups. They satisfy needs of the same groups.

10. They have more or less same use or utility. They are used for the same purpose.

Concept of Product Item:

Product items are various varieties offered within product line, which are similar in one or other ways. Such varieties are based on quality, size, colour, capacity, price, model, performance, and so on.

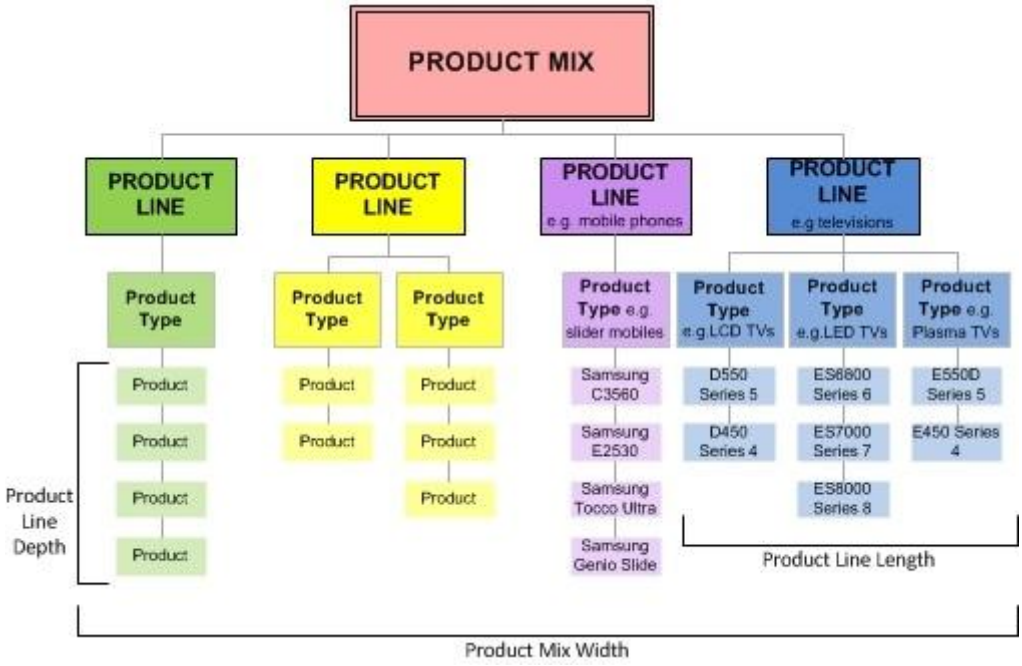
Table 1: Product Mix, Product Line, and Product Items

No.	Name of product Lines	Product Items	Total Items in Each Line
1.	A	A1, A2, A3, A4, A5, A6, A7.	7
2.	B	B1, B2, B3, B4.	4
3.	C	C1, C2, C3, C4, C5, C6, C7, C8.	8
4.	D	D1, D2, D3, D4, D5, D6.	6
5.	E	E1, E2, E3, D4, E5.	5
		TOTAL	30

Number of product lines : 5
Number of product items : 30
Product mix length : 30
Product mix width : 5
Product mix depth : 30/5=6
Product mix consistency : ?

The complete range of products present within a company is known as the product mix. In any multi brand organizations, there are numerous products present. None of the organizations wants to take the risk of being present in the market with a single product. If the company has only a single product, than the demand of the product will be too great or the company does not have the resources to expand the number of products it has.

However, if the business market is any example, than all the top companies have multiple products. Coca cola, Apple, Microsoft, Nestle, Hindustan unilever, Pharmaceutical companies, so on and so forth. These companies need to have a wide product portfolio to be present in the market and to have a sustainable business model. The combination of products that they have in their product portfolio can be the product mix.



Product mix – As explained, product mix is a combination of total product lines within a company. A company like HUL has numerous product lines like Shampoos, detergents, Soaps etc. The combination of all these product lines is the product mix.

Product line – The product line is a subset of the product mix. The product line generally refers to a type of product within an organization. As the organization can have a number of different types of products, it will have similar number of product lines. Thus, in Nestle, there are milk based products like milkmaid, Food products like Maggi, chocolate products like Kitkat and other such product lines. Thus, Nestle's product mix will be a combination of the all the product lines within the company.

Length of the product mix – If a company has 4 product lines, and 10 products within the product line, than the length of the product mix is 40. Thus, the total number of products against the total number of product lines forms the length of the product mix. This equation is also known as product line length.

Width of the product mix – Where product line length refers to the total number of product lines and the products within the product lines, the width of the product mix is equal to the number of product lines within a company. Thus, taking the above example, if there are 4 product lines within the company, and 10 products within each product line, than the product line width is 4 only. Thus, product line width is a depiction of the number of product lines which a company has.

Depth of the product mix – It is fairly easy to understand what depth of the product mix will mean. Where length and width were a function of the number of product lines, the depth of the product mix is the total number of products within a product line. Thus if a company has 4 product lines and 10 products in each product line, than the product mix depth is 10. It can have any variations within the product for form the product line depth.

Product line consistency – The lesser the variations between the products, the more is the product line consistency. For example, Amul has various product lines which are all dairy related. So that product mix consistency is high. But Samsung as a company has many product lines which are completely independent of each other. Like Air conditioners, televisions, smart phones, home appliances, so on and so forth. Thus the product mix consistency is low in Samsung.

Let us take an example of P&G as a company and understand product mix. This will be not be a precise example and all products of P&G might not be taken into consideration. But the example will help you understand product mix within an organization.

Detergents – Arial, Arial oxyblue, Ariel bar, Tide, Tide naturals, Tide bleach, Tide plus. Shampoos – Head and shoulders, Head and shoulders anti dandruff, Pantene, Pantene damage repair, Pantene pro-v

In the above example the following can be learned about the product mix of P&G
Product mix Length – 12
Product mix Width – 2
Product mix Depth – 7 in detergents and 5 in shampoos
Product mix consistency – High as both are bathroom products.

This was the complete explanation on the product mix. If you have any doubts for the same, please comment in the comment box below.

Planned Obsolescence

Planned obsolescence is a business strategy in which the obsolescence (the process of becoming obsolete—that is, unfashionable or no longer usable) of a product is planned and built into it from its conception. This is done so that in future the consumer feels a need to purchase new products and services that the manufacturer brings out as replacements for the old ones.

What is 'Planned Obsolescence'

Planned obsolescence is a purposefully implemented strategy that ensures the current version of a given product will become out-of-date or useless within a known time period. This guarantees that consumers will demand replacements in the future, thus naturally supporting demand. In some instances, this can even motivate multiple sales of the same object to the same consumer. Obsolescence can be achieved through introduction of a superior replacement or a product design meant to cease proper function within a specific window, or by cultivating desirability of new versions over older ones.

Planned obsolescence is when a product is deliberately designed to have a specific life span. This is usually a shortened life span. The product is designed to last long enough to develop a customer's lasting need. The product is also designed to convince the customer that the product is a quality product, even though it eventually needs replacing. In this way, when the product fails, the customer will want to buy another, up to date version.

Take for example a washing machine. Planned obsolescence means that the washing machine (seen opposite) is designed to last about two years, before it breaks down outside the guarantee time. Most of the components / parts have been manufactured from quality materials with the exception of some vital parts. Two years after purchase, the washing machine will only need minor inexpensive repairs. However, between 4 to 5 years the vitals parts begin to wear out and a replacement machine is required.
For planned obsolescence to work, the customer must feel that he/she has had value for money. Furthermore, he/she must have enough confidence in the manufacturer/company, to replace the original washing machine with the modern equivalent machine, from the same manufacturer.

BREAKING DOWN 'Planned Obsolescence'

Fashion and technology are known to be popular arenas for planned obsolescence, with stockings and personal electronic devices such as smartphones among the most cited targets of the strategy. It is widely accepted that nylon stockings are designed to ladder, thereby requiring replacement. The replacement cycle for mobile phones has been two to three years, as components begin to wear down and new generations of software or operating systems grow less compatible with the aging hardware. Software is also often designed to include new features and file types that are incompatible with old versions of the program. Automobile manufacturers began rolling out new versions of their models on an annual basis to combat market saturation achieved in the early 20th century.

Consumer Reaction

Consumers often react negatively to planned obsolescence, especially if new generations of products offer insufficient improvements over the prior versions. The strategy can be rendered ineffective in highly competitive markets, in which participants may compete on the basis of price or durability. Brands can be tarnished by artificially stoking demand through this method, ultimately driving customers away. However, planned obsolescence doesn't always have such a negative connotation. Companies can engage in this activity solely as a means of controlling costs. For example, a cell phone manufacturer may decide to use parts in its phones that have a maximum lifespan of five years, instead of parts that could last 20 years.

Did you just get a printer a couple of years ago only to have it fail on you for no apparent reason? You've got ink, paper, everything seems to sound and work right, but it just won't work? It's not your fault.

It could be due to **planned obsolescence**, the purposeful implementation of various strategies designed to get a customer to buy another very similar product by making the older one useless, undesirable or non-functional within a set period of time.

Nope, this isn't a conspiracy theory. It's an actual fact, and that printer example was real too. The whole point of planned obsolescence is to design a product that doesn't last forever in terms of cosmetics or function. If you are a business, you want customers to keep coming back. If you're the type of person to get rid of your old iPhone and get a new one as soon as it comes out, you're a perfect example of the customer companies try to keep thanks to planned obsolescence.

Types Of Planned Obsolescence Strategies

Planned obsolescence can be achieved via many ways, including:

1. Using relatively **unreliable parts** in a product, so it mechanically fails within a relatively predictable period of time. This gets you to discard it and buy the same exact product again or a slightly newer version.

2. Using software to **program** a product, like a printer, to fail after a set period of time or number of actions (like printed pages) even if mechanically and structurally the product is fine. A software upgrade incompatible with older hardware is another strategy for planned obsolescence.

3. Using clever **marketing** and a basically useless or insignificant upgrade in a newer product to get you to discard the 'uncool' old one even if it works just great. Smartphone manufacturers are really great with this. Who doesn't want that 7.5 MP camera in the new phone when last year's model was a puny 7.4 MP and didn't have special effects like cinema mode!?

Famous Light Bulb Example

So let's get to some good examples of planned obsolescence, although you can be sure it's found in just about every general kind of product or industry.

The best and credited as first example of planned obsolescence is a conspiracy agreed to by the major light bulb manufacturers of the early 20th century. They were called the **Phoebus cartel**. Long story short, these guys colluded to purposefully reduce a light bulb's lifetime to 1,000 hours by the mid-20th century.

Engineers, who knew way better, were purposefully told to design inferior light bulbs. Thus, over a number of years lifespans of light bulbs actually decreased by over 1,500 hours per bulb! By comparison, Thomas Edison's first commercial light bulb of 1881 lasted 500 hours longer than a light bulb in the mid-1900s.

Other Examples

While the light bulb is an example of a purposeful technological limitation, Ford and General Motors pioneered a way to get you to buy a car even if you already had a perfectly good one. They were the first to introduce yearly changes to a car model so that you could be enticed to get a newer and 'better' car and stay one step ahead of the Jones' in how you looked in society.

And have you ever wondered why you need to get new ink cartridges all the time instead of easily refilling old ones (which would be cheaper and save resource)? Or have you ever seen how your ink cartridge still had ink in it but the printer wouldn't work without a brand new one? It's all planned obsolescence.

Women who wear nylon stockings are all too familiar with planned obsolesce via the laddering of the stockings. If it didn't ladder, you wouldn't buy as many stockings. That would be bad for business and so making very long-lasting stockings isn't that great of an idea for many manufacturers.