DEMAND FORECASTING

Demand forecasting is the process of predicting future sales by using historical sales data to make informed business decisions about everything from inventory planning to running flash sales.

- Demand forecasting is a combination of two words; the first one is Demand and another forecasting. Demand means outside requirements of a product or service. In general, forecasting means making an estimation in the present for a future occurring event. Here we are going to discuss demand forecasting and its usefulness.

- It is a technique for estimation of probable demand for a product or services in the future. It is based on the analysis of past demand for that product or service in the present market condition. Demand forecasting should be done on a scientific basis and facts and events related to forecasting should be considered.

- Therefore, in simple words, we can say that after gathering information about various aspect of the market and demand based on the past, an attempt may be made to estimate future demand. This concept is called forecasting of demand.

Significance of Demand forecasting

- Fulfilling objectives of the business
- Preparing the budget
- Taking management decision
- Evaluating performance etc.

- There are two types of forecasting:

- Based on Economy

- Based on the time period

- ***1. Based on Economy***
- There are three types of forecasting based on the economy:

i. **Macro-level forecasting:** It deals with the general economic environment relating to the economy as measured by the Index of Industrial Production(IIP), national income and general level of employment, etc.

ii. **Industry level forecasting:** Industry level forecasting deals with the demand for the industry's products as a whole. For example demand for cement in India, demand for clothes in India, etc.

iii. **Firm-level forecasting:** It means forecasting the demand for a particular firm's product. For example, demand for Birla cement, demand for Raymond clothes, etc.

- ***2. Based on the Time Period***
- Forecasting based on time may be short-term forecasting and long-term forecasting

i. **Short-term forecasting:** It covers a short period of time, depending upon the nature of the industry. It is done generally for six months or less than one year. Short-term forecasting is generally useful in tactical decisions.

ii. **Long-term forecasting casting:** Long-term forecasts are for a longer period of time say, two to five years or more. It gives information for major strategic decisions of the firm. For example, expansion of plant capacity, opening a new unit of business, etc.

METHODS OF DEMAND FORECASTING

- **1] Survey of Buyer's Choice**
- When the demand needs to be forecasted in the short run, say a year, then the most feasible method is to ask the customers directly that what are they intending to buy in the forthcoming time period. Thus, under this method, potential customers are directly interviewed. This survey can be done in any of the following ways:

a. **Complete Enumeration Method:** Under this method, nearly all the potential buyers are asked about their future purchase plans.

b. **Sample Survey Method:** Under this method, a sample of potential buyers are chosen scientifically and only those chosen are interviewed.

c. **End-use Method:** It is especially used for forecasting the demand of the inputs. Under this method, the final users i.e. the consuming industries and other sectors are identified. The desirable norms of consumption of the product are fixed, the targeted output levels are estimated and these norms are applied to forecast the future demand of the inputs.

- Hence, it can be said that under this method the burden of demand forecasting is on the buyer. However, the judgments of the buyers are not completely reliable and so the seller should take decisions in the light of his judgment also.

- The customer may misjudge their demands and may also change their decisions in the future which in turn may mislead the survey. This method is suitable when goods are supplied in bulk to industries but not in the case of household customers.

- **2] Collective Opinion Method**
- Under this method, the salesperson of a firm predicts the estimated future sales in their region. The individual estimates are aggregated to calculate the total estimated future sales. These estimates are reviewed in the light of factors like future changes in the selling price, product designs, changes in competition, advertisement campaigns, the purchasing power of the consumers, employment opportunities, population, etc.

- The principle underlying this method is that as the salesmen are closest to the consumers they are more likely to understand the changes in their needs and demands. They can also easily find out the reasons behind the change in their tastes.

- Therefore, a firm having good sales personnel can utilize their experience to predict the demands. Hence, this method is also known as Salesforce opinion or Grassroots approach method. However, this method depends on the personal opinions of the sales personnel and is not purely scientific.

- **3] Barometric Method**
- This method is based on the past demands of the product and tries to project the past into the future. The economic indicators are used to predict the future trends of the business. Based on future trends, the demand for the product is forecasted. An index of economic indicators is formed. There are three types of economic indicators, viz. leading indicators, lagging indicators, and coincidental indicators.

- The leading indicators are those that move up or down ahead of some other series. The lagging indicators are those that follow a change after some time lag. The coincidental indicators are those that move up and down simultaneously with the level of economic activities.

- **4] Market Experiment Method**
- Another one of the methods of demand forecasting is the market experiment method. Under this method, the demand is forecasted by conducting market studies and experiments on consumer behavior under actual but controlled, market conditions.
- Certain determinants of demand that can be varied are changed and the experiments are done keeping other factors constant. However, this method is very expensive and time-consuming.

- **5] Expert Opinion Method**
- Usually, market experts have explicit knowledge about the factors affecting demand. Their opinion can help in demand forecasting. The Delphi technique, developed by Olaf Helmer is one such method.

- Under this method, experts are given a series of carefully designed questionnaires and are asked to forecast the demand. They are also required to give the suitable reasons. The opinions are shared with the experts to arrive at a conclusion. This is a fast and cheap technique.

- **6] Statistical Methods**
- The statistical method is one of the important methods of demand forecasting. Statistical methods are scientific, reliable and free from biases. The major statistical methods used for demand forecasting are:

a. **Trend Projection Method:** This method is useful where the organization has a sufficient amount of accumulated past data of the sales. This date is arranged chronologically to obtain a time series. Thus, the time series depicts the past trend and on the basis of it, the future market trend can be predicted. It is assumed that the past trend will continue in the future. Thus, on the basis of the predicted future trend, the demand for a product or service is forecasted.

b. **Regression Analysis:** This method establishes a relationship between the dependent variable and the independent variables. In our case, the quantity demanded is the dependent variable and income, the price of goods, the price of related goods, the price of substitute goods, etc. are independent variables. The regression equation is derived assuming the relationship to be linear. Regression Equation: $Y = a + bX$. Where Y is the forecasted demand for a product or service.