

DEMAND FORECASTING

Demand Forecasting refers to an estimate of future demand for the product.

It is an “objective assessment of the future course of demand”.

The Need for Demand Forecasting

Short-term Forecasting: is essential for formulating a suitable Sales Policy, Production Policy, Price Policy, Process Selection, Capital Management and Inventory Management.

Long-term Forecasting: is essential when we are working on Expansion, Diversification and Modernization of the Business

Methods of Demand Forecasting

Demand Forecasting Methods are trifurcated into:

- I. Survey Methods:
- II. Statistical Methods:
- III. Other Methods

Survey Methods

a). Consumer Survey Methods:

- i) Complete Enumeration Method
- ii) Sample Survey Method
- iii) End-Use Method

b). Sales-force Opinion Method

c). Expert Opinion Method

II. Statistical Methods

a). Trend Projection Methods

i). Trend Line Observation

ii). Least Squares Method

iii). Time Series Analysis

iv). Moving Averages Method

v). Exponential smoothing

b). Correlation and Regression Analysis

c). Barometric Technique

d). Simultaneous Equation Method

i). Trend Line Observation

It involves merely the plotting of actual past sales data on a chart and then estimating just by observation where the trend line lies.

The line can be extended towards a future period and corresponding sales forecast read from the graph.

ii). Least Squares Method

This Technique uses a statistical formula.

iii). Time Series Analysis

Sales = Long term trend (T) + Cyclical trend (C) + Seasonal trend (S) + Erratic trend (E)

- This method provides significantly good results
- This is a simple and inexpensive method
- However this method fails to be relevant, when there is a break-down in the trend projection as a result of turning point or changes in policies and procedures.

iv). Moving Averages Method

This Method believes in, “Future is the average of past achievements” in the sense, this method provides consistent results when the past events are consistent and unaffected by wide changes.

In this method, the computed average keeps on moving depending up on the number of years selected.

This method is easy to compute and simple to understand

The main shortcoming of this method is that equal weightage is given to all the computed averages (equal weights were assigned to data both in recent past and the distant ones).

v). Exponential Smoothing

This is an advanced method over Moving Averages Method.

Unlike in Moving Averages Method, we assign varying weights, to the computed averages.

Higher weights are given to the most recent observations as they carry more realistic information than older observations.

b). Correlation Analysis

Correlation explains the degree of association between the variables, like price and demand for the commodity, sales and advertisement expenditure etc.

When the two variables tend to change together, then they are said to be correlated.

Types of Correlation:-

1. Simple Correlation: we are going to deal with only two variable here (i.e one independent variable another dependent variable)
2. Multiple Correlation: We will be dealing with more than one independent variable
3. Positive Correlation: Dependent and the independent variable are associated with each other and move in the same direction.
4. Negative Correlation: Dependent and the independent variable are related but tends to move in opposite direction.

c). Barometric Technique

- Here present events alone are considered to predict the direct of change in future.
- In this method, one set of data is used to predict another set, In the sense, to forecast demand for a particular product we use some other relevant indicator, which is known as a barometer.
- Most commonly used indicators are, personal income, agricultural income, employment, gross national income, industrial production, bank deposits, inflation rate etc.

Drawbacks in this method:

1. It may be difficult to determine the time lag between the change in one variable and the change in the forecast variable.
2. It might be possible for us to determine the direction of change, but it is often difficult to predict the magnitude of the change in the forecast variable.

For ex: for a given change in income level, what could be the increase in the number of cars sold?

d). Simultaneous Equation Method

In this method, all variable are simultaneously considered, with the conviction that every variable influences the other variables in an economic environment.

It is a system of 'n' equations with 'n' unknowns.

Concern involved in the method:

It is difficult to compute where the number of equations is larger.

III. Other Methods

- a). Test Marketing
- b). Controlled Experiments
- c). Judgemental Approach

Steps in Demand Forecasting/What constitutes a Scientific Approach to Forecasting?

The following steps constitute a scientific approach to Demand Forecasting:

1. Identify and state the objectives of forecasting clearly
2. Select appropriate method of forecasting, keeping in view the above objectives.
3. Identify the variables affecting the demand for the given product or service
4. Express these variables in appropriate forms
5. Collect the relevant data to represent the variables
6. Determine the most probable relationship between the dependent variable and independent variable, using the appropriate statistical techniques.

7. Make appropriate assumptions to forecast and interpret results.
8. Let there be alternative forecasts to make the forecasting exercise more meaningful.

Supply

Supply means the quantity of goods or services offered for sale at various prices at a given point of time.

Supply refers to the willingness of a seller to sell the specified amount of a product within a particular price and time.

Determinants of Supply

Some of the factors that influence the supply of a product are:

1. Price
2. Cost of production
3. Natural conditions
4. Technology
5. Transport conditions
6. Factor prices and their availability
7. Government policies
8. Price of Related goods

Law of Supply

The Law of Supply is a fundamental principle of economic theory which states that, keeping other factors constant, an increase in price results in an increase in quantity supplied and vice versa.

In other words, there is a direct relationship between price and quantity supplied.

Supply Schedule

Price (Rs)	Quantity Supplied (in units)
10	100
11	120
13	130
15	150
16	165
16.5	180

Supply Curve

