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CLASS : TY B.Com (SEM:VI)   **SUB : ECONOMICS – VI (M.E.)**

UNIT :2 (Demand Forecasting)   **FACULTY : SMRUTI JANI**

Demand Forecasting:

Demand forecasting is the process of using predictive analysis of historical data to estimate and predict customers' future demand for a product or service. Demand forecasting helps the business make better-informed supply decisions that estimate the total sales and revenue for a future period of time.

The cost should be controlled by producing correct level of goods in the firm and also according to the demand for those goods in the market. For the estimation of demand, demand forecasting is to be done by the firm.

- Forecasting = estimation of future situations.
- Forecasting reduces or minimizes the uncertainty.
- By forecasting effective decisions can be taken for tomorrow.
- Demand forecasting is based on the determinants of the demand.
- Demand for goods increases and gives sales.
- Sales are the primary source of the income for a firm.

STEPS INVOLVED IN DEMAND FORECASTING

1. Identification of business objectives:

In the first stage we should know what is the aim of forecasting? What we get or know from the forecasting? Estimation of factors like quantity and composition of demand for goods, price to be quoted, sales planning and inventory control etc., are done in the first stage.

2. Determining the nature of goods under consideration:

Different category of goods has their own distinctive demand. Example capital goods, consumer durables and non-durables goods in which category our goods fall we should estimate.

3. Selecting a proper method of forecasting:

There are different methods for demand forecasting. Which is best suited method that we should select for doing demand forecasting?

4. Interpretation of results:

The forecasting which is done by the managerial economist should be interpreted in detailed manner. That means it should be easy to understand by the top management.

Methods of demand forecasting:

1. **Survey Methods**:

To invest money and others factors in business; we require a reasonable accurate forecast of demand. Starting with qualitative methods like survey of collective opinions, buyers' intention, Delphi approach and its variant, a number of quantitative methods are used for computing demand forecasts as detailed below

a) Collective opinion Survey:

Sales personnel are closest to the customers and have an intimate feel of the market. Thus they are most suited to assess consumer's reaction to company's products. Herein each salesperson makes an estimate of the expected sales in their respective area, territory, state and/or region, These estimates are collated, reviewed and revised to take into account changes in design/features of products, changes in selling prices, Projected advertising and sales promotion campaigns and anticipated changes in Competitors: marketing policies covering product, people, price, promotion and place.

Opinions of all managers involved at various levels of sales organization are also included in the survey. Thus "collective opinion survey forms the basic of market Analysis and demand forecasting.

Although this method is simple, direct, first hand and most acceptable, it suffers from following weaknesses.
1. Estimates are based n personal judgment which may not be free from bias
2. Adding together demand estimates of individual salespersons to obtain total demand of the country maybe risky as each person has knowledge about a small portion of market only
3. Salesperson may not prepare the demand estimates with the requisite seriousness and care
4. Owing to limited experience, usually in their employment, salesperson may not have the requisite knowledge and experience

This method may be useful for long-term forecasts. It is also used for new products or new variants of existing products.

b) Survey of Customers Intention

Another method of demand forecasting is to carry out a survey of what consumers prefer and intend to buy. If the product is sold to a few large industrial buyers, survey would involve interviewing them.

If it is a consumer durable product, a sample survey is carried out about what they are planning or intending to buy. It is not east to query all consumers through direct contact or through printed questionnaire by mail. These surveys serve useful purpose in establishing relationships between
▪ demand and price
▪ demand and income of consumers
▪ demand and expenditure on advertisement etc.

This method is preferred when bulk sales are made by institutions and industrial buyers and only a few of them have to be contacted.

Disadvantages in this forecasting technique is that the customers may not know total requirements; in some cases they are not certain about quantity to be purchased. Besides there may be a tendency to

inflate their requirements during shortages. This survey method is not useful for households - interviewing them is not only difficult out but also expensive. They are not able to give precise idea about their intentions particularly when alternative products are available in the market.

c) Delphi Method

The Delphi technique was developed at RAND Corporation in the 1950s. Delphi method is a group (members) process and aims at achieving an collective opinion of the members on the subject. Herein experts in the field of marketing research and demand forecasting are engaged in

- analyzing economic conditions
- carrying out sample surveys of market
- conducting opinion polls

Based on the above, demand forecast is worked out in following steps:

1. Co-ordinator sends out a set of questions in writing to all the experts co-opted on the panel who are requested to write back a brief prediction.
2. Written predictions of experts are collated, edited and summarized together by the Co-ordinator.
3. Based on the summary, Co-ordinator designs a new set of questions and gives them to the same experts who answer back again in writing.
4. Co-ordinator repeats the process of collating, editing and summarizing the responses.
5. Steps 3 and 4 are repeated by the Co-ordinator to experts with diverse backgrounds until consensus is reached.

If there is divergence of opinions and hence conclusions, Co-coordinator has to sort it out through mutual discussions. Co-coordinator has to have the necessary experience and background as he plays a key role in designing structured 'questionnaires and synthesizing the data. Direct interaction among experts is avoided nor their identify is disclosed. Procedures also neither avoid inter-personnel conflicts nor are strong-willed experts able to dominate the group. This method is also used for technology forecasting

d) Nominal Group Technique

This technique was originally developed by Delbecq and VandeVen. This is a further modification of Delphi method of forecasting. A panel of 3-4 groups of up to 10 experts are formed and allowed to interact, discuss 'and rank all the suggestions in descending (highest to lowest) order as per the following procedure:

Experts sit around a table in full view of one another and are asked to speak to each other. An administrator hand over copies of questionnaire needing a forecast and each expert is expected to write down a list of ideas about the questions. After everyone has written down their ideas, administrator asks each expert to share one idea, out of own list. The idea shared is written on the `flip chart' which everyone can see. Experts give ideas in rotation until all of them are written on the `flip chart'. No discussion takes place in this phase and usually 15 to 25 ideas emerge from this format.

In the next phase, experts discuss ideas presented by them. Administrator ensures that all ideas have been adequately discussed. During discussions similar ideas are combined. This reduces the number of

ideas. After completing group discussions, experts are asked to give in writing ranks to ideas according to their perception of priority.

2. Statistical Methods:

- **Trend projection method**

This technique assumes that whatever past years demand pattern will be continued in the future also. Basing on the historical data that means previous year's data is used to predict the demand for the future. In this trend projection method, previous year's data is presented on the graph and future demand is estimated.

- **Regression Analysis**

Past data is used to establish a functional relationship between two variables. For Example, demand for consumer goods has a relationship with income of Individuals and family; demand for tractors is linked to the agriculture income and demand for cement, bricks etc. are dependent upon value of construction contracts at any time. Forecasters collect data and build relationship through co-relation and regression analysis of variables.

- **Econometric Models**

Econometric models are more complex and comprehensive as this model uses mathematical and statistical tools to forecast demand. This model takes various factors which affect the demand. For example, demand for passenger transport is not only dependent upon the population of the city, geographical area, industrial units, their location etc.

It is not easy to locate one single economic indicator for determining the demand forecast of a product. Invariably, a multi-factor situation applies Econometric Models, although complex, are being increasingly used for market analysis and demand forecasts.

- **Simple Average Method**

Among the quantitative techniques for demand analysis, simple Average Method is the first one that comes to one's mind. Herein, we take simple average of all past periods - simple monthly average of all consumption figures collected every month for the last twelve months or simple quarterly average of consumption figures collected for several quarters in the immediate past.