Planning is an essential part of any business activity. However, business plans require objectives that are based on sales targets, which in turn require demand forecasts. Thus, forecasting is essential for planning.

In addition, forecasts serve as input to many other business decisions. Obviously, these decisions can be only as good as the forecast results used to make them.

Sales forecasts are the foundation of planning. The forecasts enable an organization to have an optimum inventory level, to make appropriate purchasing decisions and to maintain efficient daily operations. All these affect the profits of the organization. Therefore, forecasting is critical to profitability.

Demand planning involves the process of creating and affecting demand in the future. Regardless of method chosen (promotion, etc.), forecasting helps assess the impact of each possible decision upon demand. Demand management integrates all aspect of an organization's strengths and weaknesses. It includes not only planning and forecasting but also coordinating all activities that affect customer demand, e.g. creating, shaping and fulfilling demand.

Demand forecasting requires projecting what will happen to demand in the future. Obviously, this requires statistical forecasting methods. Unfortunately, there is still a gap between the statistical and economic techniques offered by forecasting and the judgmental technique most executives use to forecast demand.

Instead of using a statistical forecasting technique, some companies use intention-to-buy survey data to forecast sales. Consumer durable product manufacturers often use purchase intention to forecast.

The US government conducts surveys to forecast spending on durable goods. The survey results are presumed to help predict future sales. Theory suggests that the best predictor of future behaviour is past behaviour. However, some social psychologists believe that a good predictor of what individuals will do is their intention-to-perform the behaviour. Others suggest that the intentions as predictors can work only under certain conditions.

The conditions are:

- that the event is critical in the life of the intender;
- that the intender has the ability to fulfil the plan;
- that conditions which affect the intention do not change; and
- that the intender reveals accurate intention.

These conditions may be satisfied in the short-term for expensive items.

In addition, the measurement of intention is key to the predictive ability of the data. Studies have shown that the type of questions used to ask about intention to predict intention-to-buy. They found that most purchases are made by those who have reported no plans to buy. This may occur because non-intenders are more likely to respond to surveys than intenders.
Due to the use of improper forecasting techniques, most forecasts give inaccurate results. In addition to the use of inappropriate methods of forecasting, there are other reasons for forecasting errors:

- Many forecasts rely on historical data without understanding the underlying basis of the data. For example, an unexpected jump in sales becomes part of the historical data instead of being considered as an outlier that may not happen again.
- Forecasters tend to ignore likely changes that may influence the forecast, e.g. increases in population, increases in competition, technological changes, etc. Any or all of these factors may affect the organization’s sales and can easily be included.
- Using inappropriate computational methods for the data. Each type of data (e.g. time series, cross-sectional data) requires different forecasting techniques. Incorrect computational techniques cause errors in forecasts.
- Forecaster bias affects results and should be kept to a minimum. Individual biases as a result of personal optimism or pessimism have no place in forecasting. Bias increases error in forecasts.

Forecasters can choose from a variety of forecasting techniques. However, each technique fits a limited set of situations, and thus methods appropriate to different situations result in the highest accuracy. The accuracy of forecasts is further complicated when a forecaster uses available data that is not consistent and is statistically unsound.

The use of regression to establish a relationship between the dependent variable and many independent variables is an appropriate method of forecasting. However, the selection of the independent variables is a critical first step to accurate forecasts. Sales of many durable consumer goods correlate strongly with major economic indicators.

However, forecasting is especially complicated due to the changing economic factors among which any business operates. The economic factors include the Gross National Product (GNP), the employment rate, the discount rate, the population growth rate, and others. These economic factors have major effects on the manufacturers of durable goods. Their relationships are complicated by the possibility that some of these factors have lagged effects on the sales of durable products. In addition, sales of many products are affected by seasonal fluctuation.

All these economic factors are relevant when forecasting durable goods, e.g. automobile sales. Forecasts can be further complicated by sales promotions and advertising activities. Therefore, forecasters must be aware of these activities, although it is difficult to time their occurrences and to track the numbers of these activities. In addition, forecasters must consider activities that may cause problems in forecasting, and, if data are not available on these activities, forecasters should at least be cognizant of the problems and take the possibility of inaccurate results into consideration. Regardless of the difficulties, appropriate statistical models with relevant variables make for the best results.

**Durable goods**

The cost of housing makes headlines, but transportation costs usually do not. The average American spends almost as much on transportation as on housing. That is, an average household spent 20 cents of every dollar on transportation, or $7,697 per household on average per year in 2002 to get around. Further, the average yearly transportation cost per household in some metropolitan areas is as high as $7,961.

Even though the share of automobile output in GNP has declined from 4 per cent to 3.5 per cent, it still accounts for 20 per cent of the changes in GNP from quarter to quarter. In addition to its direct effect on the economy, automobile sales have a large spill over effect on the economy. Many other industries are directly or indirectly affected by the auto industry. Further, consumer spending on purchase and maintenance of automobiles accounts for 10 per cent of the GNP.
An analysis of the sales of consumer durable goods in Britain found that the demand for cars increased by 90 per cent from 1970 to 1978 while the disposable income rose by 21 per cent in the same period. Obviously, this analysis indicates that income alone does not determine automobile demand. One possible explanation could be that consumers' durables are purchased not with current income but are bought with savings or are financed. Further, consumer spending on durable goods, especially automobiles, can be postponed to accommodate multiple factors as the useful life of the goods can be extended through repair and maintenance. In addition, ownership of more than one car is also likely. These uncertainties make demand for durable consumer goods difficult and challenging to forecast.

In the USA, consumer durable goods purchases represent a huge market (e.g. $3,769,235 million in 2003), but not much research has been done to accurately forecast the sales of these products. The forecast work that has been done relates to new products or intention-to-buy methods. A library and Google's Scholar search on 'forecasting demand for durable goods' generated 45 items that mostly dealt with new products. Data for durable goods are hard to find and may be unreliable. However, due to its importance to consumption and the economy, forecasts of sales of durable goods such as automobiles are critical.

The automobile industry plays a critical role in many economies. Demand for automobiles also determines trend for travel and tourism, roads, and patterns of housing. That is, the more people own cars, the more they have the ability to travel and, thus, the higher the demand for more and better roads. The mobility of people also determines where and when they can locate their houses beyond congested cities, resulting in the expansion of communities.

All of these activities expand economies and create jobs. In turn, the expansion puts pressure on politicians, urban planners and traffic engineers to be cognizant of trends in automobile ownership. The demand for automobiles is a critical consumer decision and is influenced by sociological and economic factors, and automobile ownership affects both developing and developed countries.

Realistic goals

The automobile industry is a major component of the US economy. Especially in the states where automobiles dominate the manufacturing sector, decreases in automobile sales can have dire economic consequences for the state and its people. Therefore, it is critical that the automobile industry plan its business carefully and to be aware of the upturns and downturns that might be coming so as to prevent or ameliorate any economic shock those changes might have on the country's or the state's economy.

To accomplish this, automobile manufacturers and dealers must carefully develop their business plans. For a plan to be effective, it must be reliable. The reliability of a plan increases if it is based on realistic goals. The goals can be realistic only if they are based on an analysis of the conditions affecting the business. Such analysis requires use of a forecasting method that allows the incorporation of as many conditions as feasible that might affect the business and that can be used to predict demand.

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