Forecasting

What is it?

Forecasting is the estimation of the value of variables at some future point in time.

Most of us use forecasting on a daily basis when we listen to weather forecasts. This information allows us to better plan our day and prepare for surprises. Business forecasts are even more crucial for many organizations, to help plan and manage their operations.

"Firms should budget about one percent of their sales revenues for the forecasting effort."
- Scott Armstrong

Business forecasting often uses historical data and is usually performed with the aid of computer software. The methods used can be classified into several different categories: qualitative methods, regression methods, multiple equation methods, and time series methods. Although developing a rudimentary forecast is relatively straightforward, there are substantial payoffs to using sophisticated techniques to generate accurate forecasts.

Present Day

Unpredictable demand is, in many organizations, a very costly problem. Low forecast accuracy, or no forecast, often results in low service levels, frenzied schedules and poor performance. This costs the organization millions of dollars in safety stock and unneeded inventory, and can lead to an unstable supply chain.

Plan better
using advanced forecasting solutions.

Companies that are 30% better at demand forecasting average*:

- 35% shorter order-to-cash cycle times
- 15% less inventory.
- 17% stronger perfect order fulfillment.
- 10% of the stockouts of their peers.

*Statistics quoted from "Consumer Products Industry Outlook: Profitable Growth Requires DDSN Strategies" by Kara Romanow, AMR Research Report, August 2004.

Success Stories

Some ground-breaking forecasting applications:

- DNATA, the largest airport terminal cargo operator in the Middle East, to forecast workloads and streamline productivity.
- Entergy Solutions to manage risk and forecast energy costs and demand in a fast-growing deregulated retail environment.
- Kirin Brewery Company of Japan to accurately forecast inventory levels.
- Reliant Energy, a Houston-based supplier of natural gas and electricity around the world, to help the company meet customer demands reliably and at low cost.
- Salt River Project (SRP), the third-largest public power utility in the United States, to improve retail electricity rates.
- Staples to calculate sales forecasts for nearly 1,100 existing stores and for the 5,000 potential real estate sites annually, using historical sales data and customer demographics.

Syllogix

Syllogix's Forecating Process

1. Consultation

- A co-client exploration of the decision-making problem at hand is performed.
- The relevant factors that may affect the forecast, such as weather, season, day, time, economy, promotions and trend, are determined
- The data requirements and availability are assessed.

2. Modeling

- Data is transformed to meet certain linearity constraints.
- The best forecasting method, or a set of them, are selected.
- The forecasting engine generates the forecast for the desired time frame.
- An inverse transformation is performed if required.

3. Analyses

- The forecast is tested for integrity and accuracy.
- The different forecasting methods are benchmarked with themselves and with the previous forecast. This is done by means of a variety of accuracy measures and often using a hold-out sample.
- The forecast may be performed using different initial assumptions.
- A confidence interval may be determined to not only obtain a mean value, but also the expected minimum and maximum values which are crucial to best/worst case planning and too often ignored.

4. Solution Delivery

- The forecasted values are presented in both tabular and graphical form.
- The forecasting engine may be built into a custom software tool to repeatedly and flexibly perform organization-wide forecasts.
- The forecasting model is delivered to the client, accompanied by a detailed user guide describing how to interact with the tool and a technical document explaining the construction of the model.
- Training and support are available.

Benefit from Forecasting

Long-term forecasts help you survey what's to come

- Improve strategic planning and budgeting.
- Determine investments in production capacity, employment levels, facilities, etc.
- Provide a common, consistent forecast to be used by all departments and partners.

Medium-term forecasts assist in preparation

- Determine employment levels required
- Automate exception reporting and highlight problems before they occur
- Determine the most effective promotional mixes

Short-term forecasts allow you to deliver the best product or service

- Achieve efficient operational planning
- Reduce operating costs
- Improve customer service