Improved forecast accuracy by better quantifying the effect of promotions

What We Did: Created an analytical framework to better incorporate the effects of promotions and seasonality on forecasts

The Impact We Made: Incorporating the effects of promotion and seasonality on forecasts in a systematic manner resulted in a 25% improvement in forecast accuracy

Summary - Promotional lift model

For one of the beverage manufacturer's fastest growing markets, the bottlers were unable to accurately quantify the impact of promotions, leading to low forecast accuracy. Mu Sigma helped develop an analytical framework to help the partners better quantify the effect of consumer and trade promotions on overall demand. This was implemented as a "promotional lift model", an extension to the existing Forecasting System.

About The Client - Leading beverage manufacturer

The client is a Fortune 500 global beverage manufacturer with presence in over 100 countries through a network of wholly/partially owned bottlers. The engagement was focused on one of their fastest growing country markets.

The Challenge - Overlapping promotions

The bottlers were facing poor service levels from the beverage manufacturer largely because of low forecast accuracy. The primary cause for low forecast accuracy was their inability to accurately quantify the effect of consumer and trade promotions. A further complication arose from the fact that the highly competitive market forced the client to run a large number of promotions, many of them overlapping.

The Approach - Framework to quantify effect of promotions

A comprehensive data-driven framework was developed by looking at the business factors in a comprehensive manner. The solution covered the following:

- Calculation of seasonality indices at a market and product level

- Decomposition of demand to remove the trend and seasonality components, isolating the effect of promotions on demand
- Evaluation of historical performance of promotions based on factors like the promotion type, region, category, timing and duration
- Prediction of lift expected from upcoming promotions

The solution was implemented in a phased manner to cover all the bottlers:

- A forecast adjustment factor was developed to capture the seasonality and promotion effects by period
- This was then provided to the existing Forecasting Systems used by the bottlers as a multiplier to the base forecast generated by the system
- The forecast was continuously monitored and refreshed based on learning from actual data. This closed loop approach has enabled a cycle of continuous improvement in the forecast quality

The Outcome - 25% improvement in forecast accuracy

- The project helped quantify the lift for over 25 national promotions that were rolled out across 200 products resulting in a 25% improvement in forecast accuracy
- The solution framework was developed in a manner that enabled it to be scaled to other markets in a rapid manner. As part of the roll-out, the framework is being enhanced to incorporate the local business conditions like the composition of bottlers (owned vs. franchise), weather and seasonality patterns, nature of promotions (both trade and consumer)