

What We Did: Developed an analytical process to forecast demand and estimate launch quantities for new products during seasonal sales

The Impact We Made: An improved volume forecasting and replenishment process led to increase in product availability by 8%

Summary - Demand forecasting

Mu Sigma helped one of UK's leading fashion retailer to build a customized demand forecasting and inventory planning solution for its online channel involving apparel and home furnishing products. Availability of products for online channel was a major issue leading to significant lost sales especially during season openings. The problem was further accentuated as products had very short shelf life, with 60% of them lasting just one season. Mu Sigma solution provided more confident estimates of seasonal demand and quantity to stock during initial weeks of seasonal sales. This has led to an 8% improvement in product availability, translating to avoidance of lost sales to the tune of over £1m annually. The solution comprised of statistical and business rule driven repeatable process that provided better estimates of overall seasonal demand and launch quantities at product level. Analytical engine leverages multiple techniques such as regression, conjoint and cluster analysis. The whole process is automated to run the forecasts on an ongoing basis.

About The Client - A European fashion retailer

The client is a UK based Fortune 500 fashion retailer specializing in clothing and luxury food products. They operate across 40 countries with over two-thirds of the stores in UK.

The Challenge - A tradition of forecasting based on gut feel

Products in the fashion retail business are known to have short shelf lives. Besides, new styles introduced each season do not have historic data. To compound matters, supply planning had to be done nine months ahead of season start date. Hence, current forecasts were gut-based, leading to inadequate buys and poor replenishments. Regular stock outs meant inability to measure the effectiveness of various promotions carried out throughout the year.

The Approach - A more data driven forecasting method

The client had four major sales cycles aligned to seasons. Each season would approximately last a quarter. Planning for each season had to be done nine months in advance. Analysis of current processes and past sales trends made it clear that solution had to focus on two aspects:

- Accurately forecasting seasonal demand at product level
- Estimating order quantities during first three weeks of the season as it has significantly high contribution

Frequent change in fashion styles and short lifecycle meant that most products did not have past sales trends. Hence Mu Sigma came up with a multi-pronged statistical approach to identify 'look like' or 'sister' SKUs for every new product. Approach had the following steps:

- Identification of key attributes impacting sales of new fashion product using advanced regression based models. Key attributes included sleeve length, price, item description, primary color, fabric, etc. Selected attributes were weighted based on their importance to sale
- Based on a set of shortlisted product attributes, sister SKUs were identified:
 1. For the above purpose, a conjoint analysis based algorithm was developed using SAS
 2. Algorithm would match each new product with every other product based on proximity in terms of shortlisted attributes
 3. Result is a prioritized list of existing products rank ordered in terms of similarity to new product
- Final forecast for new product would be calculated based on sales rate of sister SKUs and application of business rules
- Launch period (three weeks) sales were estimated based on patterns of how sister SKU performed during previous seasonal events

Entire process was codified in SAS and automated to an optimal level. Launch period estimates enabled fulfillment team to stock right quantities in the distribution center from holiday centers.

The Outcome - Improved productivity and collaboration within the client

- 8% improvement in product availability during the seasonal sales leading to increased revenue to the tune of £ 1m annually
 - A stable and repeatable process for 6,000-8,000 SKUs is being currently used across the online channel
 - Forecasts served as benchmark to measure lift from promotional activities
 - New process also ensured closer collaboration between various teams within the client organization like allocation & replenishment, trading, merchandising and operations development
-

Contact us at :

T: +91 80 7154 8000

E: ContactUs@mu-sigma.com
info@mu-sigma.com

Visit our website: www.mu-sigma.com

Or write to us: Mu Sigma Inc., 3400 Dundee Rd, Suite 160, Northbrook, IL – 60062

