Business Problem Statement
Swire Coca Cola Innovation Demand Forecasting
IS 6813-001 Spring 2024 MSBA Capstone

Team: Zero to Coke Hero

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Business Problem Statement for Swire Coca-Cola's Innovation Project

Business Problem: Swire Coca-Cola, a leader in the beverage distribution industry across the Western US, faces the challenge of optimally timing the launch of limited edition "innovation" beverage products. Despite the availability of extensive historical sales data and the regular launch of new products, accurately predicting demand for these innovative, never-before-sold products remains a challenge for Swire. These products are crucial for maintaining customer interest, driving demand, and staying ahead of the competition, but they also pose risks of overproduction or underestimating demand, leading to potential revenue loss or customer dissatisfaction.

The Benefit of a Solution: An accurate demand forecast for Swire Coca-Cola's innovative products will enable the company to fulfill all potential demand without overproducing, thus maximizing revenue and enhancing customer satisfaction. By selling the right products in the suitable regions at the correct times, Swire can achieve a strategic market advantage, maintain its position as a trendsetter, and foster brand loyalty among increasingly variety-seeking consumers.

Success Metrics: The project's success will be evaluated based on the accuracy of demand forecasts for the specified innovative products, as judged against actual sales outcomes. Success metrics include the model's ability to predict location, timing, duration, and units sold for each product launch, providing actionable business insights that result in financial gains and expanded market share for essential flavors.

Analytics Approach: The analytics team will combine Exploratory Data Analysis, Time Series Forecasting (ARIMA and SARIMA models), and ML algorithms drawn from over 24 million observations representing three years of sales data. From a practical standpoint, the team must also understand and contend with the data of this significant market: more than 3100 unique products sold among 13 western states with unique demographics and the cost of "overage" and "underage" in product production. The team will approach these and other such considerations with an eye focused on driving value and revenue for the client. This comprehensive approach will help predict the best launch periods for new products and identify the qualities and quantities contributing to any successful launch. This approach includes a variety of standard data science approaches, including separating data into training and test sets to validate the models' predictions and applying these models to forecast demand accurately.

Scope: The project will focus on creating predictive models and business insights for seven specified new products. Deliverables include:

- a PowerPoint presentation highlighting key insights,
- an annotated report detailing the code and model outputs, and
- all relevant code is posted to GitHub for transparency.

Future expansions may include models tailored to specific brands, locations, or periods for even more precise forecasting.

Details: The project team comprises four analysts: Ian Donaldson, Michael Tom, Andrew Walton, and Jake Jarrard. We anticipate completing this project and presenting it to the client on April 11, 2024. Key milestones include completing exploratory data analysis by February 25, model building by March 24, and finalizing the presentation by April 10. This timeline ensures thorough analysis and model development, culminating in a comprehensive presentation of findings to Swire Coca-Cola.

Conclusion: By accurately forecasting demand for innovative limited-release beverages, Swire Coca-Cola can make informed decisions that optimize inventory levels, enhance customer satisfaction, and secure its position as an industry leader in beverage innovation. The collaborative efforts of the analytics team will provide Swire with the insights needed to navigate the complexities of new product launches successfully.