Swire Coca-Cola Innovation Product Forecasting

Business Problem Statement

Swire Coca-Cola is continually introducing innovative products into the market and wants to optimize its production planning and inventory management for these novel beverages. The challenge for Swire is to forecast the demand for these new products accurately to ensure optimal production quantities, prevent out-of-stock and overproduction, minimize costs, and maximize customer satisfaction.

The purpose of this project is to accurately predict the weekly demand of the innovation products. The focus will be on optimal production planning, cost minimization, customer satisfaction, and market location and date prediction.

Benefit of Solution

The benefits of the innovation product forecast are as follows:

- **Efficient Resource Allocation and Production Cost Reduction:** By accurately forecasting demand, Swire can allocate resources and materials more effectively, leading to significant cost savings. This efficiency reduces waste due to overproduction and minimizes storage costs associated with excess inventory.
- **Improved Market Responsiveness:** With precise demand predictions, Swire can rapidly respond to market changes and customer preferences. This agility ensures that new products are available where and when they are needed, enhancing the company's competitive edge in a changing market.
- **Enhanced Customer Experience:** Accurate demand forecasting helps maintain optimal inventory levels, reducing the likelihood of stockouts. This reliability in product availability ensures a consistent and satisfying customer experience, fostering loyalty and trust in the Swire brand.

Analytics Approach

Our approach involves a comprehensive process. Initially, historical data is collected and integrated from various sources to forecast the demand for these innovative products, followed by exploratory data analysis to identify patterns and factors influencing demand. Feature engineering will then be employed to incorporate relevant features to explore suitable

forecasting models, possibilities include time series and machine learning algorithms. The models will be trained, validated, and continuously improved based on real-time feedback, customer insights, and the latest data. The final step involves implementing the forecasting model into production planning and inventory systems, ensuring seamless communication and monitoring to adapt to changing market conditions. This approach aims to optimize resource allocation, improve market responsiveness, cost minimization, and enhance the overall customer experience for Swire's innovation products.

Success Metrics

The success of this project will be measured by the ability to enhance production efficiency and inventory optimization at Swire. Key indicators include the accuracy of demand forecasting, reducing operational costs, and decreasing instances of overproduction and stock shortages. Additionally, success will be reflected in increased customer satisfaction, as evidenced by consistent product availability and positive market feedback. Collectively, these metrics will validate the project's impact on strengthening Swire's position in the dynamic beverage market.

Scope / Deliverables

Primary deliverables for this project will be the following:

- **Detailed Report of Findings and Model Predictions:** A comprehensive report encompassing analytical insights, detailed forecasts, and model accuracy assessments.
- **Customized Demand Forecasting Model:** A tailored, forecasting model for Swire to continuously forecast weekly demand for new products.

Project Details

This project will be executed by the members of Team 4 and delivered by April 10, 2024. The following is a list of project milestones:

- Business Problem Statement Delivery
- Exploratory Analysis
- Forecasting Model
- Presentation Draft
- Final Presentation