



Adidas US Sales Forecast & Optimization

Project Proposal

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Adidas, a renowned global sportswear brand, entered the United States market in 1978, marking its presence in the highly competitive US athletic footwear and apparel industry. Over the years, Adidas has established itself as a prominent player, capturing a significant market share with its diverse product offerings. While Adidas has enjoyed success in the US market, it also faces several challenges including intense competition from established rivals like Nike and Puma, potential brand perception issues, changing consumer preferences, economic factors, the impact of online retail & e-commerce, and supply chain challenges. Facing these challenges, Adidas needs to stay agile and innovative; enhance brand differentiation; understand consumer insights; and improve online & retail experience to remain competitive in the US market.

PROBLEM

Adidas wants to use its historical US sales data to obtain valuable insights into the company's performance, market dynamics, and customer behavior, and use these insights to drive informed decision-making, help optimize strategies, and achieve its sales and business objectives.

Below are some of the questions Adidas wants to address with insights from the data.

- Adidas merchants are currently sold through a variety of channels throughout the US including but not limited to brick-and-mortar stores, outlets and online. Is Adidas' current US sales network optimal? If not, what adjustments are needed?
- Are there any noticeable trends and patterns in consumer behavior and product preferences that Adidas needs to be aware of?
- Which clustering techniques should Adidas use to better understand its consumers and target its marketing effort?
- What is the best predicting model Adidas can use to predict demand for specific products or product categories to guide production planning, inventory management, and supply chain optimization?
- Can Adidas use historical sales data to develop a pricing optimization model that determines the optimal price point for Adidas products in different market segments?

DATA

Dataset contains Adidas 2020-2021 US sales data

(<https://data.world/stellabigail/adidas-us-sales-datasets>). This dataset has a total of 13 columns and 9,648 rows, covering retailer information, product information, unit prices,

quantities sold, total sales, operating profit, operating margin and sales method of each Adidas US sales order ranging from 01/01/2020 to 02/22/2021.

APPROACH

- After data import, cleaning and wrangling, segment sales data by various dimensions such as retailers, geographic locations, products, and/or sales methods to gain insights. Based upon insights from sales segmentation, choose the dimension that makes the best sense for sales forecasting.
- Preprocess & train the data to make them ready for modeling.
- Build regression models on train dataset to forecast sales for the next 12 months. Compare performance data on the test dataset to pick the best model.
- Algorithms to be investigated might include but are not limited to: Linear Regression, Support Vector Machines (SVM), Gradient boosting algorithms like XGBoost or LightGBM, Support Vector Regression (SVR), Time Series Models like ARIMA (AutoRegressive Integrated Moving Average) or exponential smoothing methods (e.g., Holt-Winters), Neural Networks, and Random Forest.

DELIVERABLES

- All Python code developed
- A project report summarizing the project, including EDA, modeling & data story
- Slide deck presentation catering to management team