Case Study

Optimizing Assortment Strategies

How a Global FMCG Leader Achieved a 30% Boost in Inventory Accuracy

Client background

A British multinational fast-moving consumer goods company, founded in 1929, is organized into five business groups: Beauty & Wellbeing, Personal Care, Home Care, Nutrition, and Ice Cream. Facing the challenge of optimizing product assortment across various channels, geographies, and outlets of different sizes, the company needed a new approach to improve on-shelf availability, reduce stock-outs, and enhance its assortment strategy.

Challenges

Several challenges necessitated the development of a predictive model:

- Building a predictive model to maintain and grow the assortment

- Identifying the optimal quantity to be sold by outlet and SKU

- Predicting SKUs likely to go out of stock

- Maintaining on-shelf availability (OSA)

- Identifying new sales opportunities by SKU and outlet

- Ensuring the solution's applicability across channels, geographies, and outlets of varied sizes

- Creating perfect stores by improving on-shelf availability, reducing stock-outs, and enhancing assortment

Our work

- Used internal data and geo-tagging data to build machine learning models that could predict out-of-stock (OOS) situations on time, recommend must-sell SKUs, and identify outlets not currently selling certain SKUs to suggest potential additions

- The solution employed Random Forest, collaborative filtering, and deep learning algorithms to generate these recommendations

- It was scaled for the India market and 26 other countries including those in Asia, Africa, and Brazil

- The end-to-end solution utilized Spark ML, Azure SQL Database, Azure Analysis Services, and Power BI for visualization

- It was developed as a cloud-native application on Azure, with the storage layer housed in Azure Data Lake Store (ADLS)

Tools & Technologies

ML | Azure, AWS | Data bricks | Python | Spot fleet instances

Business benefits

- Achieved a **~10%** increase in year-over-year assortment growth, with a **1-3%** increase in assortment width and depth

- Optimized replenishment recommendations by **30%**, leading to a **300 basis points** increase in replenishment efficiency

- Improved the duration of monthly churn analysis recommendations from one week to five hours

- Reduced development costs by **50%** when extending the algorithm to new countries
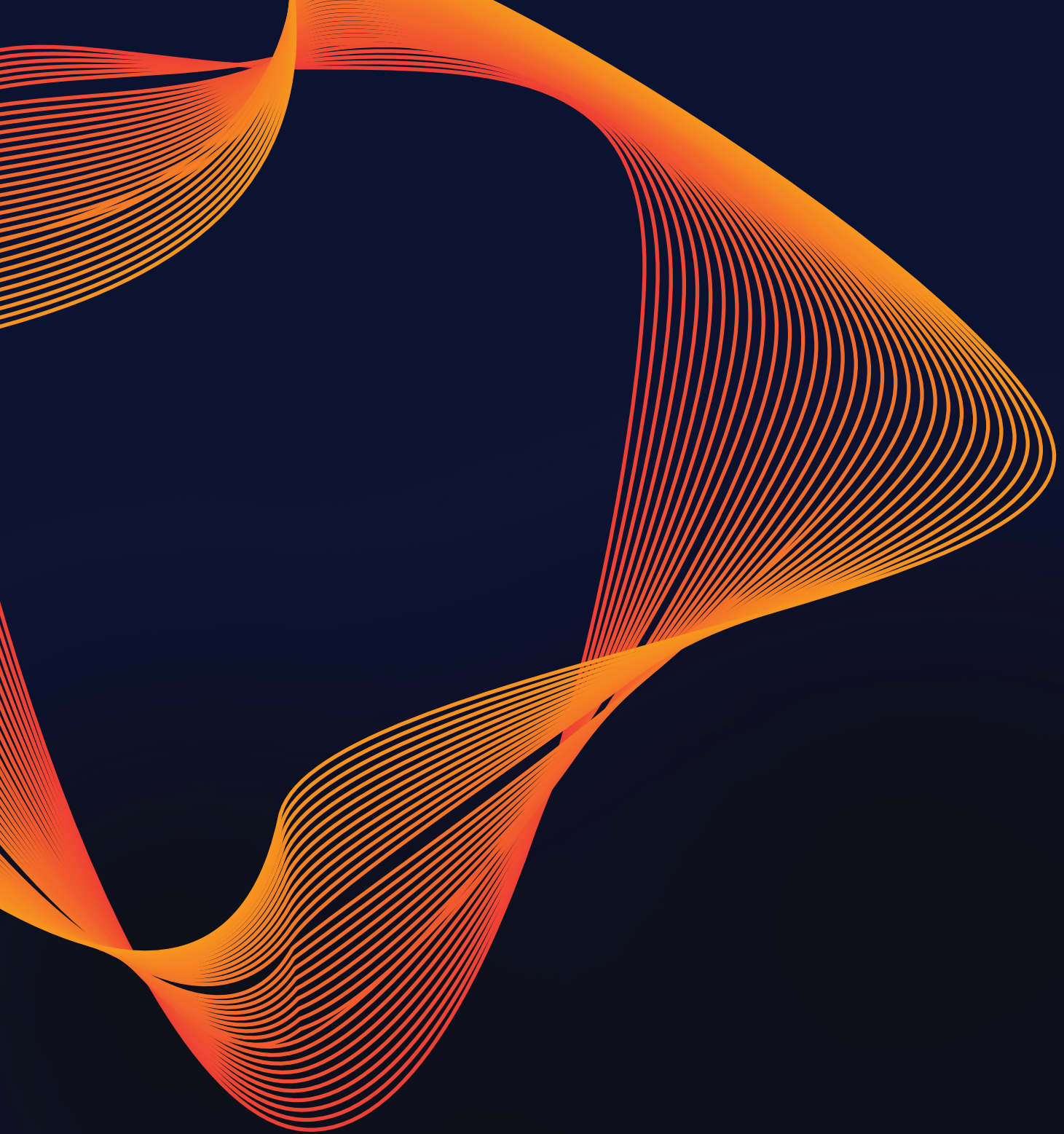
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