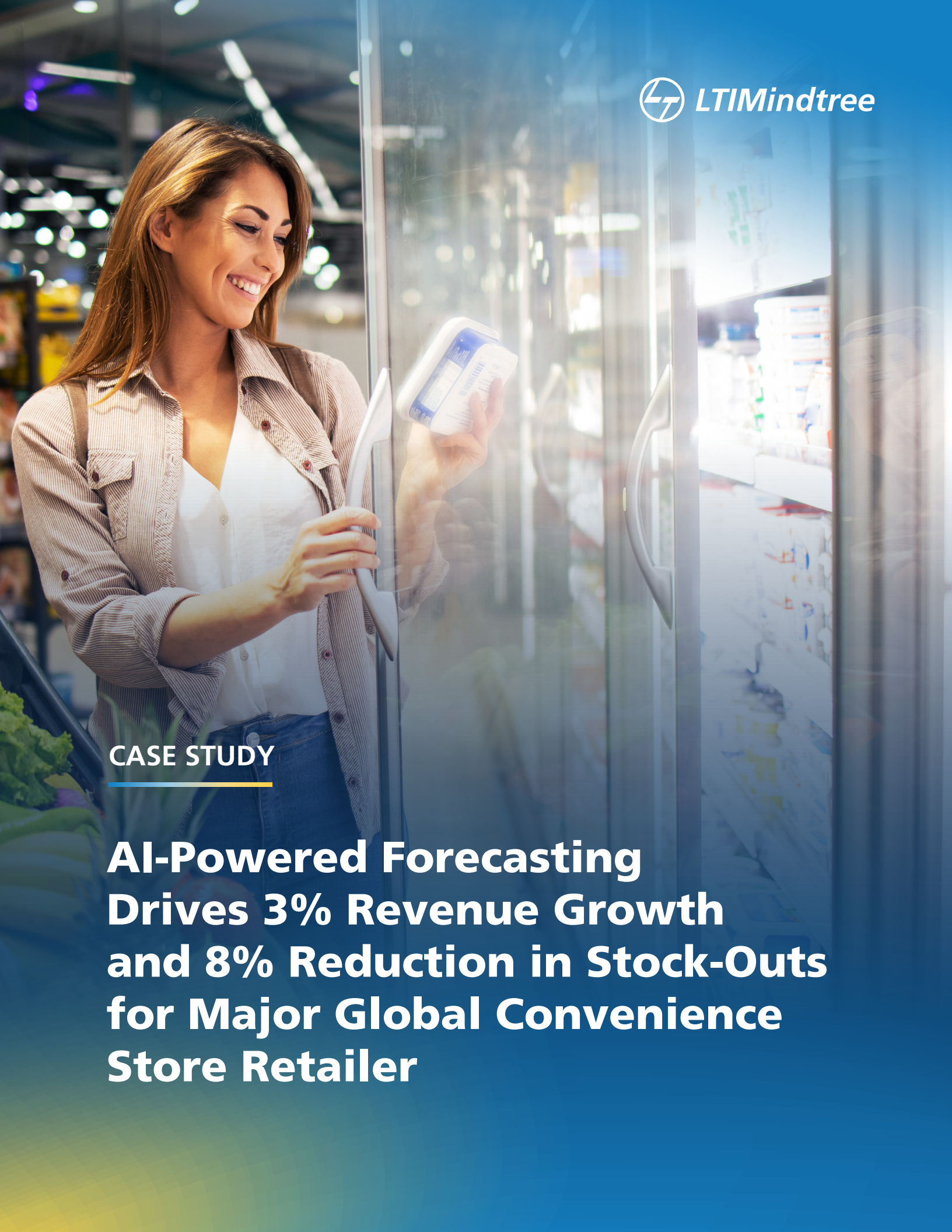

LTIMindtree

CASE STUDY

AI-Powered Forecasting Drives 3% Revenue Growth and 8% Reduction in Stock-Outs for Major Global Convenience Store Retailer

Client

The client is a premier name in the US convenience-retailing industry, operating over 80,000 stores across 20 countries.

The Challenge

The client lacked a unified view of store data, such as customer purchases and daily store orders, which hindered effective inventory management across over 10,000 stores. They needed to improve item ordering accuracy and find effective ways to reduce out-of-stock situations and shrinkage.

Demand volatility and intricate local customer purchase patterns complicated demand forecasting. The client aimed to transform store forecasting by predicting customer demand two weeks in advance, ensuring optimal inventory levels and consistent product availability.

Furthermore, they aimed to transform the customer experience by personalizing deals and offers, recommending complementary products based on purchase history, and boosting loyalty.

LTIMindtree Solution

To address these challenges, we implemented a comprehensive AI-driven solution:

01 **Ordering AI:**
Leveraging LTIM's proprietary analytics platform, we used advanced machine learning algorithms to predict daily item sales at the store level, encompassing 20M SKU-store combinations processed every day. Our analytics engine generated daily forecasts linked directly with the ordering system by analyzing diverse data sets. Our model factored in historical sales trends, shrinkage, seasonal variations, promotions, and updating forecasts daily to ensure accuracy and eliminate blind spots affecting demand.

02 **Store AI:**
Harnessing features from public APIs, we curated a list of popular foods and employed a linear regression model to identify the top-selling products at for each of the 10k stores. Through a Rest API endpoint, we provided ranked lists of popular products tailored to specific locations, enhancing decision-making processes on what SKUs to carry at the store level.

03 **Basket item analysis:**
Analyzing transaction data, we identified product combinations frequently sold together, uncovering patterns and associations. This enabled us to gain valuable insights into customer purchasing behaviors and preferences, aiding personalization.

04 **Personalization AI:**
We utilized collaborative filtering techniques and customers' transaction histories from the recent time period to recommend personalized offers and products. We also enabled tailored recommendations directly on the customers' mobile app.

Business Benefits

Leveraging Azure Databricks and Azure Data Lake Gen2 to process over 20 million SKU combinations daily for over 10k stores, we significantly enhanced the customer experience. The other notable impacts include:

3%

revenue increase from better store assortment recommendations

8%

fewer out-of-stock situations via forecasting linked to ordering

Optimized supply chain and inventory with 14-day sales predictions