Hitachi Solutions

Food Distributor with 15+ Distribution Centers

Hitachi Solutions builds machine-learning model to improve promotional demand forecasting, optimize inventory levels and costs, and reduce waste

SPECIFICATIONS

INDUSTRY

- CPG

PROJECT

- Automate and streamline existing manual promotion forecasting process and outdated technology

- Build and train a machine learning model to use historical sales data and promotional attributes to accurately predict demand on promotions

- Optimize inventory levels and costs for promotions to increase revenue and reduce food spoilage

PRODUCTS

- Microsoft Azure
- Power BI
- SQL Server
- Machine Learning
- Databricks

This customer had a hunch inaccurate and manual promotion forecasting processes were costing them millions but did not have the technical resources to prove how much. The company turned to Hitachi Solutions and Microsoft to build a data-driven model to provide more accurate predictions, reduce product surplus and supply chain bottlenecks, and increase revenue by eliminating waste and discounts. Read on to learn how the model identified $36 million in excess inventory.

Challenge

Although passionate about innovation, when it came to forecasting demand during customer promotions, this customer was anything but. They still used Excel spreadsheets, manual processes, and an outdated system to predict demand.

Without easy access to historical data or fact-based insights, the forecasts were often inaccurate, and the company was not optimizing inventory levels to cover stock outs. This often left it with loads of unused product that went to waste and created warehouse and supply chain inefficiencies. The excess inventory also had a direct cost of purchasing when not needed, was expensive to store in the warehouse, and created lost revenue from having to be discounted or spoiled.

Our customer had approximately over $70 million in inventory and high customer satisfaction from little to no stock outs. They believed they should be able to maintain customer satisfaction with a lower level of inventory but did not have the skills in-house to determine the right solution. Initially they turned to Microsoft for help, who — because of our trusted reputation and proven technical expertise — recommended Hitachi Solutions as the best partner for the job.

Solution

After working with our customer's supply chain and demand planning leaders, it was determined they needed to replace the sales team's inefficient, manual advanced order management forecasting with a

streamlined, automated, and data-driven promotion planning solution. Using Microsoft Azure, SQL Server, Databricks, and Power BI, we built a model that unified and automatically analyzed historical data — including the sales numbers by SKU as well as attributes of the promotion such as type of advertising and in-store placement. Leveraging machine learning allows us to train the model to predict the demand on future promotions and provide more accurate inventory levels when supporting promotions.

The new solution does it all — reviews results, checks for logic errors, personalizes forecasts, and more. So now, instead of the team spending all their time looking at spreadsheets, gathering information, and basically making a guess, the intelligent demand forecast model instantly makes inventory recommendations based on real-time real-data insights. And the system gets smarter and smarter the more it is used.

Benefits

The unique and innovative model was able to prove the customer's hunch was right and now provides more accurate and reliable promotion forecasting. It determined that the inventory level needed to support promotions is only $40 million — $36 million less than what was currently running. And this would only slightly increase the cost of stock outs.

Other benefits to be realized from the model include:

- Reduced product surplus and need for discounts

- More efficient and productive warehousing

- Reduced supply chain delays and fines

- Decreased food waste and spoilage

Contact us to learn how we can help you!

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