Tiger Analytics enabled a top US restaurant chain to achieve industry-best forecasting accuracy with a hyper-localized system

Tiger Analytics replaced the existing legacy forecasting solution with an AI and ML-powered hyper-localized omnichannel demand forecasting system. It helped achieve incredibly high forecasting accuracy levels at their cafés. The solution also led to a 20% increase in labor cost savings and a 10% reduction in inventory waste.

The Background

Our client is a prominent brand in the Fast Casual Restaurant sector, with stores across the US and Canada. Sales forecasting accuracy played a key role in managing labor and inventory at cafés. However, their existing forecasting system could not respond to localized events and trends. Hence, the client recognized the need for a more agile and responsive forecasting solution that could adapt to local factors, optimize labor allocation, and prevent unnecessary production surpluses.

Key Challenges

\ **Localized events and trends:** Capturing and responding to local changes in demographics, school calendars, sporting events, and promotions posed a major challenge. The legacy solution also failed to capture localized data, lacking the flexibility to respond.

\ **Lingering pandemic impact:** The current tool relied on time series forecasting techniques that could not adapt to the unexpected data disruptions caused by the COVID-19 pandemic. The current solution also overlooked the substantial shift in cross-channel buying patterns.
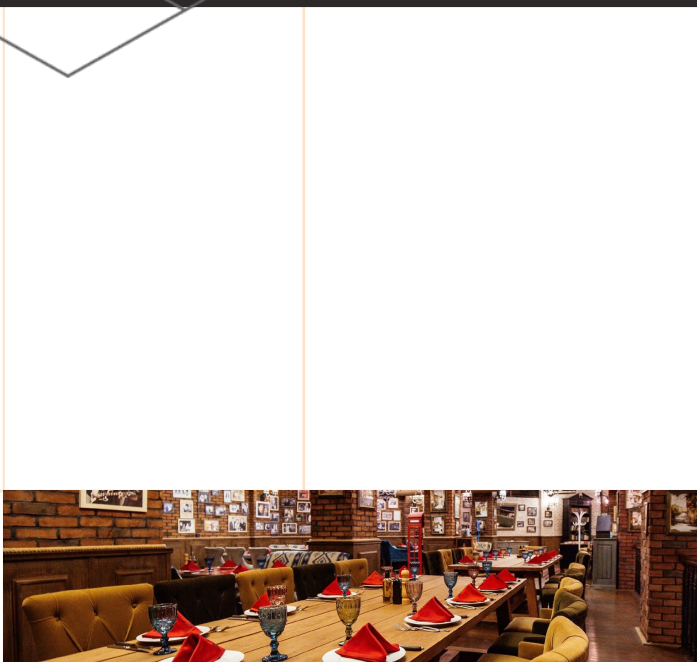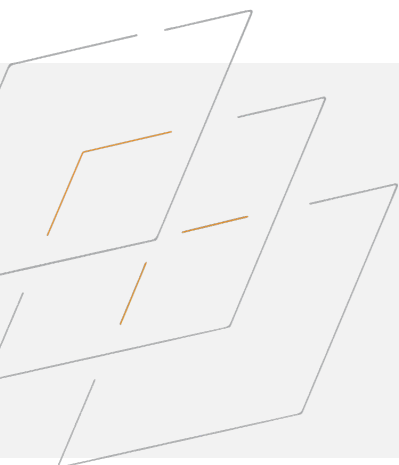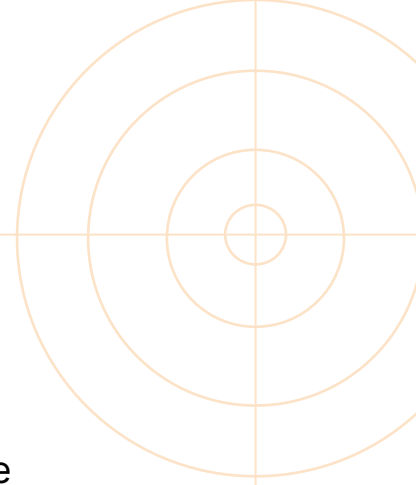
Our Solution

The team conducted tests on multiple algorithms and data sources through business discovery and hypothesis-driven experimentation. This allowed for exploring different options before finalizing and demonstrating the value across a sample set of stores for the Minimum Viable Product (MVP) implementation.

Then, along with historical data, marketing and promotions data, the team sourced localized events data from third-party sources and café-level exception (store/channel closures) data from the Point of Sales systems. It helped build a comprehensive Data Lake to power the ML-based forecasting engine.

Finally, the team scaled and operationalized the solution with a phased launch of the new system to cafes, enabling a gradual rollout. Additionally, support was provided to the client's staff to ensure a smooth transition and help familiarize them with the new tool.

This iterative approach also involved gathering store feedback to enhance the forecasting model and refine the data sources.

Tech Stack

/ GCP Stack - Vertex AI, Big Query, and Data Proc

/ Power BI Reporting
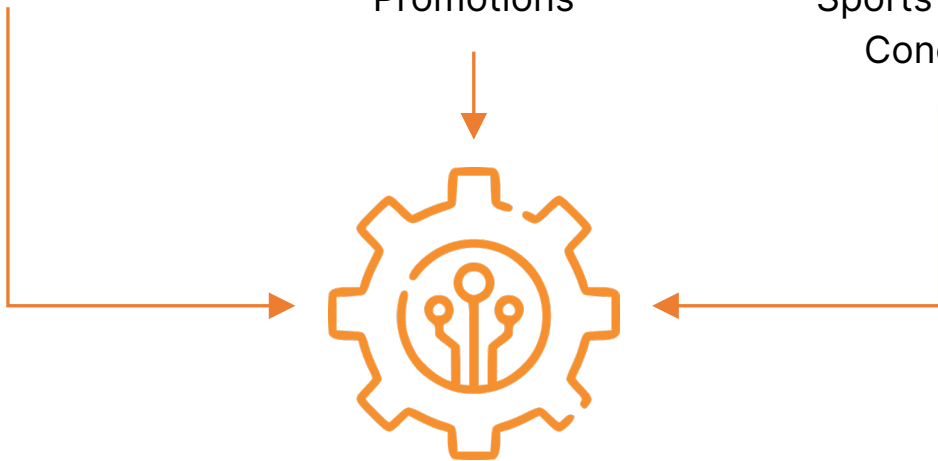
Solution Architecture
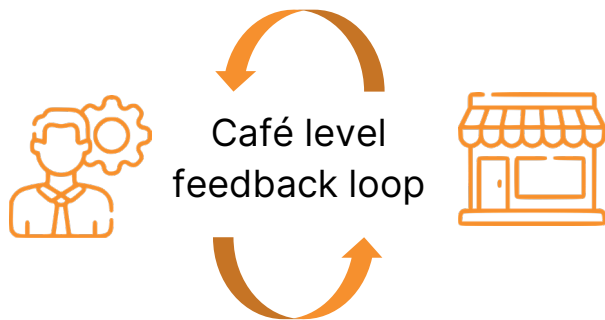
Historical Data
Sales, Weather, Seasonality

Promotions & Events
Holidays, Store Exceptions, Promotions

Local Data
School Events, University Calendars, Sports Events, Concerts

ML based Forecasting Engine

Café level feedback loop

Expert Augmentation
QSR Finance + Tiger Adjustments

Store GM Feedback
GMs edit forecast with a reason code

Value Delivered

Up to 90% of store GM overrides were reduced, freeing resource time.

A 20% increase in labor cost savings was achieved due to accurate demand forecasting.

A 10% reduction was achieved in inventory waste.

80% lower 'build and operate' costs were incurred by the client (compared to typical off-the-shelf solutions in the market.

About Us

Tiger Analytics is a global leader in AI and analytics, helping Fortune 1000 companies solve their toughest challenges. We offer full-stack AI and analytics services & solutions to help businesses achieve real outcomes and value at scale. We are on a mission to push the boundaries of what AI and analytics can do to help enterprises navigate uncertainty and move forward decisively. Our purpose is to provide certainty to shape a better tomorrow.

Being a recipient of multiple industry awards and recognitions, we have 4000+ technologists and consultants, working from multiple cities in 5 continents.
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