

Retail

## Enhancing Sales Forecasting with Data Science





## Problem Statement

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A leading company faced challenges with its sales forecasting team spending significant time on data retrieval and manual analysis. The team was often bogged down by inconsistent data across various products, leading to suboptimal forecasting accuracy.

The company needed a solution to streamline the forecasting process, allowing the team to focus on strategic decision-making rather than data fetching and processing.



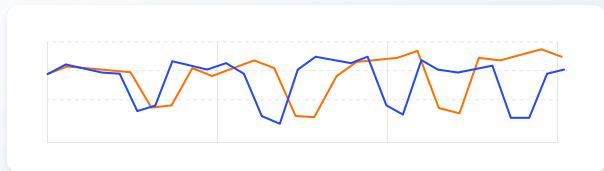
# Solution

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To further enhance forecasting accuracy, we established a dedicated data science team. This team developed a customized multi-algorithm approach that effectively addressed the challenges.

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- **Holt-Winters:** Applied for seasonal data patterns.
- **Neural Networks:** Used for complex, non-linear relationships.
- **ETS (Error, Trend, Seasonality):** Modeled trend and seasonal components.
- **ARIMA (AutoRegressive Integrated Moving Average):** Handled non-stationary time series data.



- ▶ Each product category was analyzed using these algorithms, with the best-performing model selected based on accuracy. Due to data inconsistencies, different algorithms were found to be more accurate for different products, ensuring tailored and precise forecasting.

- **Rolling Forecast and Comparative Trends:** The bot generated rolling forecasts and comparative trend analyses, which were shared with sales agents. These visual insights motivated the sales team to focus on high-margin products, driving better sales performance.
- **Seamless Data Interaction:** By integrating with Copilot, the chatbot provided seamless interaction with data, allowing users to query, visualize, and interact with sales forecasts naturally. This reduced the time spent on data retrieval and enabled the sales forecasting team to concentrate on higher-level strategic work.

# Business Outcomes

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Improved Business Outcomes:



**50% Reduction** in  
Time Spent on Data  
Retrieval



**25% Improvement** in  
Forecasting Accuracy  
Across Product Lines



Achievement of  
Annual Sales Targets  
by **Month 10**



**Increased Focus** on High-  
Margin Products by Sales  
Teams



**Enhanced Strategic**  
Decision-Making within the  
Sales Forecasting Team



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