THE UNIVERSITY OF CHICAGO
DATA SCIENCE INSTITUTE

The Chicago Blackhawks

The Chicago Blackhawks, one of the NHL's "Original Six" teams founded in 1926 and six-time Stanley Cup Champions, operate a large retail branch spanning the United Center, online channels, and off-site locations. Because merchandise demand rises and falls with game schedules, attendance, and seasonal patterns, maintaining the right inventory is both operationally challenging and financially important. Overstocking ties up capital, while understocking leads to missed sales on high-demand nights. To address this challenge, the Blackhawks asked the University of Chicago's Data Science clinic to improve their forecasting methodology.

The clinic team built an interactive dashboard that estimates merchandise sales by department across a user-selected date range (Figure 1). The tool centralizes forecasts for gameday, non-gameday, and non-arena purchases, allowing users to explore expected demand and plan inventory accordingly. Behind the dashboard, the team combined historical sales, attendance, game characteristics, and retail activity to generate the forecasts it displays. Their methodology used regression-based forecasts when game calendars were available and trend-based estimates when future schedules were unknown; this resulted in a more robust and interpretable forecasting model. The analysis revealed how factors such as month, weekend effects, and opponent tier influence purchasing behavior, offering insights that can inform promotions and planning.

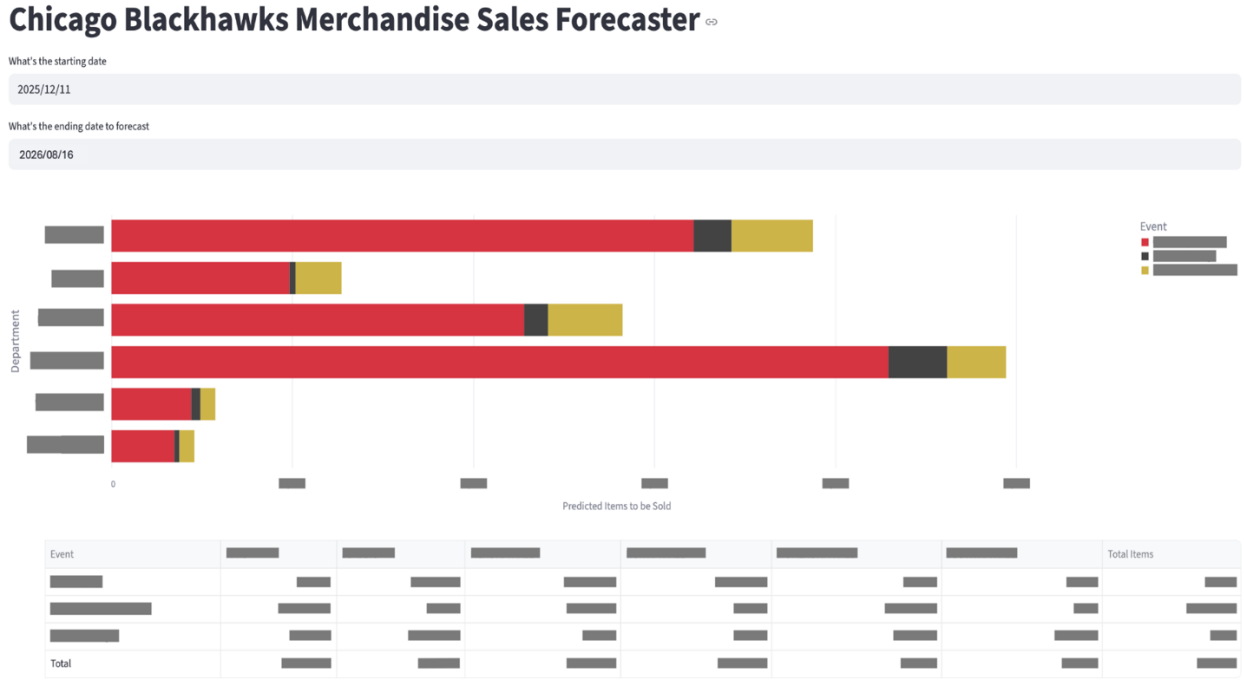

Figure 1. Sales forecasting dashboard

*Numbers and figures are merely illustrative and do not represent actual sales numbers and rates.