



# SHOPHQ – WHITE PAPER

## FORECASTING & REPLENISHMENT



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## EXECUTIVE SUMMARY

In a dynamic retail environment, accurate forecasting and efficient replenishment are critical to maintaining customer satisfaction and optimizing working capital. At ShopHQ, a predictive forecasting and replenishment tool was developed to address two distinct challenges: managing uncertainty during new product launches and ensuring consistent availability for customers on recurring subscription programs.

## BUSINESS CHALLENGES

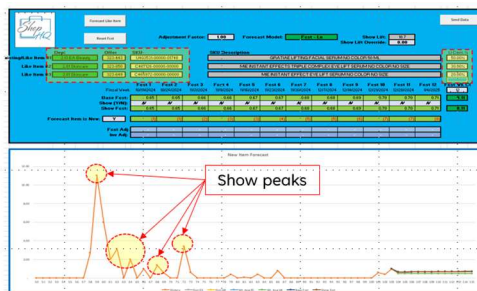
- **New Item Launches:** Lack of historical sales data made forecasting volatile; risks of underbuying or overbuying impacted service levels and capital efficiency.
- **Subscription-Based Purchases:** Customers expected uninterrupted supply; manual forecasting often under-allocated inventory to subscription demand.

## NEW ITEM LAUNCH

Launching a new product introduces high levels of uncertainty. Traditional time-series models often fail due to the absence of historical demand. Our solution integrated product attributes, early sales velocity, and analogous item performance into a machine learning model. This enabled accurate early forecasts and minimized costly stockouts or overstocks during the launch window.

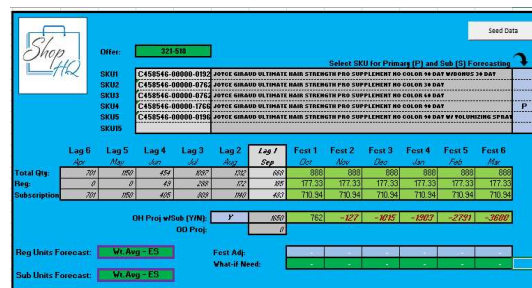
## KEY FEATURES & BENEFITS

- Attribute Analysis & Like Item Rationalization
- Early Sales Signals and Model Tuning
- Predictive Algorithms



## SUBSCRIPTION MODEL FORECASTING

Subscription-based products posed a different challenge: ensuring that recurring demand was consistently met while avoiding excess inventory. The tool utilized subscription rosters and renewal patterns to project baseline demand. Layered on top of this, promotional spikes and seasonal adjustments were factored in, providing a comprehensive replenishment plan.



## BUSINESS IMPACT

The predictive tool significantly increased forecast accuracy for both new and recurring items. This not only optimized inventory positions but also reduced lost sales and excess stock write-downs. The improved alignment between supply and demand enhanced customer satisfaction, particularly for subscription customers who expected reliable availability.

- Increased forecast accuracy and reduced error rates.
- Optimized working capital through balanced buys.
- Subscription SKUs achieved >98% fulfillment service levels. • Automated recommendations reduced manual workload.
- Improved customer satisfaction and loyalty.



## STRATEGIC VALUE

This tool positioned ShopHQ to compete effectively by blending predictive analytics with subscription certainty. It established a scalable framework that extends to assortment planning, vendor negotiations, and long-term capacity management.

## CONCLUSION

The predictive forecasting and replenishment tool transformed how ShopHQ managed new item launches and subscription-based products. By mitigating launch risks and securing reliable inventory for recurring customers, the solution delivered operational efficiency and strategic advantage.