



Intelligent Inventory Optimizer

# How an Australian Tech & Home Appliances Brand Recovered Lost Sales



**Unconstrained  
Forecast Generation**



**Identification  
of Substitutes**



**Lost Sales and  
Substitution Calculation**

## THE CHALLENGE:

### Inaccurate Lost Sales Estimates

As customer demand continues to evolve, companies must have an agile supply chain that can quickly adapt. Lost sales due to stockouts can be a major challenge, resulting in revenue loss as well as decreased customer satisfaction and loyalty.

Algo Intelligent Inventory Optimizer (IIO) provides deep insights into how closely an organization's operations align with consumer demand. By using IIO, businesses can estimate lost sales accurately. It considers stock levels at distribution centers (DCs), allowing for a more agile and nimble supply chain that can meet changing customer needs in real time.

A leading Australian technology and home appliances brand faced difficulty in accurately estimating lost sales in scenarios where customers could substitute out-of-stock products. Their existing approach did not take DC stock levels into consideration, which often led to inaccurate calculations and suboptimal decisions.

The company turned to Algo to address this challenge. Algo implemented IIO, which uses a sophisticated algorithm to estimate lost sales while also considering DC stock levels. IIO analyzed their sales data and identified trends in customer behavior, such as product substitution and purchase patterns. It also considered stock levels at DCs, which allowed for a more accurate estimation of lost sales.



# INTELLIGENT INVENTORY OPTIMIZER:

## Precise, DC-aware Lost Sales Analysis

**Algo was chosen for its unique ability to combine technology with deep supply chain expertise.**

Algo's supply chain professionals evaluated the company's current business situation and provided recommendations that support their inventory decisions.

Equipped with Algo IIO, Algo's supply chain experts collaborated with the company to review inventory plans and make recommendations on how to substitute and optimize inventory from DCs down to stores.

IIO was highly effective in optimizing the company's lost sales. By accounting for DC stock levels, it provided more accurate lost-sales estimates, which enabled more informed decision-making on product allocation and stock replenishment. The company was able to reduce lost sales by 30% in the first six months after the implementation of IIO.

IIO also provided valuable insights into customer behavior and trends. Analysis of customer substitution patterns enabled the company to identify potential substitute products to reduce lost sales, optimize product range, and improve the customer experience.

In addition to reducing lost sales, implementing IIO also resulted in significant cost savings for the Australian brand. By accurately estimating lost sales, the company minimized its overstock and costly emergency stock replenishments. The multi-step process used data and advanced modeling techniques to identify and recover lost retail sales due to stockouts. First, Algo generated unconstrained forecasts that accounted for seasonality, price elasticity, cross-price elasticity, and other factors.

Second, Algo identified substitute products using data cleansing, feature preparation, feature engineering, and iterative model training. Then, Algo identified and validated substitutes, and analyzed the hierarchy of item attributes.

Finally, Algo calculated lost sales and substitutions. This included identifying lost-sales scenarios and the potential for substitution, calculating substituted sales and revalidation, and adjusting final lost sales after substitution. With the help of on-day pricing, sales, and inventory of substitutes, the company was able to regain significant lost sales and improve its overall supply chain performance.

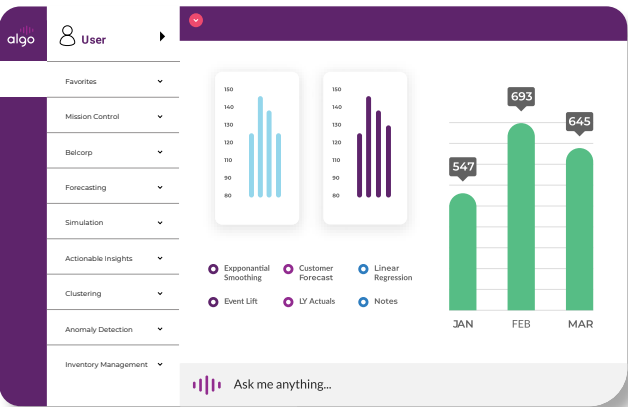




# Results and Continued Partnership

Through a collaborative effort with Algo, the Australian tech and home appliances brand significantly improved its supply chain visibility, especially for lost sales. By implementing Algo IIO, the company enhanced the accuracy of its lost-sales estimates by accounting for DC stock levels. This empowered the brand to make smarter business decisions, resulting in sustained growth. Algo's partnership and the IIO solution have proven to be valuable assets for the brand, opening the door to more value-added initiatives in the future.

## Business Outcomes



**30%** reduction in lost sales in first 6 months

**Improved** accuracy and length of supply planning and inventory forecasting

**Accurate estimation** of lost sales to avoid overstocking products and reducing the need for costly emergency stock replenishments

