CUSTOMER SUCCESS STORY

C3.ai

Paper Manufacturer Reduces On-Hand Inventory by 25% Using AI-Driven Optimization

Value-Driven Benefits

25%
Reduction in on-hand inventory at plants and warehouses

55%
Reduction in manual adjustments to forecasts

3%
Increase in service levels

Introduction

A leading paper manufacturer operates one of the most complex, integrated supply chains in the industry. To enhance forecasting accuracy, optimize inventory, and improve replenishment efficiency, the company partnered with C3 AI to implement an AI-driven planning solution. The initiative aimed to streamline operations, improve decision-making, and deliver measurable business impact across its manufacturing and distribution network.

Challenges

Managing a large network of plans and warehouses required the company to maintain a highly flexible and responsive planning system. However, existing planning tools provided limited real-time visibility into inventory positions, while traditional forecasting methods often produced inaccurate demand forecasts. To compensate, planners made frequent manual adjustments to align stock levels with actual conditions, a time-consuming and effort-intensive process that increased operational complexity and reduced responsiveness.

Solution

The company partnered with C3 AI to enhance supply chain visibility, optimize inventory levels, and enable data-driven planning across its extensive operations. Over an 18-month period, the company deployed two AI-powered applications, C3 AI Demand Planning and C3 AI Inventory Optimization.

C3 AI Demand Planning delivered more accurate, less biased demand forecasts, providing planners with the insights needed to align production and replenishment with real market demand. C3 AI Inventory Optimization then transformed these forecasts into actionable recommendations for safety stock targets and replenishment orders.

Results

The combined C3 AI solution gave the company end-to-end visibility across plants and warehouses and enabled planners to dynamically balance inventory costs, service levels and efficiency. The company lowered manual order insertions by 55%, reduced on-hand inventory by 25%, and improved service levels by 3%. With C3 AI, the company has transformed its supply chain into a more agile, resilient, and efficient supply network able to respond quickly to changing demand and supply conditions.

Challenges

The paper manufacturer faced growing challenges in aligning inventory across its plants and warehouses due to limitations in conventional planning systems and fragmented data sources. Real-time visibility into warehouse stock was inconsistent, and partial roll counts made it difficult to maintain an optimal balance of inventory. Fixed service targets and rigid production lead times further restricted flexibility.

Traditional forecasting methods compounded these visibility issues. Forecasts required frequent manual adjustments to align production and replenishment. Inbound shipment estimates were based on requested delivery dates rather an actual lead times, leading to mismatched replenishment orders. For instance, orders were regularly generated using a fixed lead time, even though real lead times had a wider range.

This systemic misalignment meant that planners had to manually expedite more than 30% of production, which caused operational disruptions, delayed orders, and higher costs. High inventory levels and rigid safety stock strategies limited agility and prevented the company from running a cost-efficient supply chain. The company recognized the need to improve forecast accuracy, inventory management, and supply allocation.

Approach

Over 18 months, the paper manufacturer partnered with C3 AI to deploy two AI-enabled applications, C3 AI Demand Planning and C3 AI Inventory Optimization, across dozens of plants and warehouses, covering thousands of SKUs.

AI-Enabled Forecasting

The company deployed C3 AI Demand Planning to generate more accurate, less biased forecasts for each SKU and location. These improved forecasts enhanced the company's ability to anticipate demand and reduce both overstock and stockouts. With visibility extending beyond traditional short-term horizons, planners could make more strategic production and replenishment decisions. With C3 AI, the company achieved 13% reduction in forecast bias and a 6% improvement in forecast accuracy.

Dynamic Inventory Optimization

Using the outputs from C3 AI Demand Planning, C3 AI Inventory Optimization provided actionable recommendations for safety stock levels and replenishment orders. The application dynamically balanced inventory costs against the operational impact of manual order insertions. By calculating optimal service levels that minimized total costs while accounting for variability in demand and supply, the company improved visibility into inventory positions and simplified planner decision-making. The combined solution delivered measurable impact, including 25% less on-hand inventory, 55% fewer manual order insertions, and a 3% increase in service levels.

Embedded in Enterprise Workflows

Both applications were seamlessly embedded into existing planner and S&OP workflows through an intuitive interface. Planners could monitor inventory pipelines, review projections, approve AI-generated recommendations, and manage order insertions in real time.

With the new C3 AI-powered planning process, the paper manufacturer gained the agility and insight to consistently deliver strong performance across its supply chain network.

About the Company

- ~100 years in business
- 150+ global operating locations
- 30,000+ employees

Project Highlights

- 10 data sources unified across three systems into a single integrated planning view.
- 8 AI, optimization, and simulation pipelines unified to replace legacy inventory planning tool.
- 3 user workflows configured for planners, schedulers, and S&OP managers, enabling pipeline monitoring, parameter optimization, and supply allocation.
- 55% manual order insertions reduced
- Inbound lead time accuracy improved by 50% through advanced machine learning–based forecasts.
- Improved forecasting accuracy by 6% and reduced bias by 13% in demand forecast.

Solution Architecture

Enterprise Data

Upstream ERP System

- Production History
- Production Schedule
- Shipments
- Purchase Orders

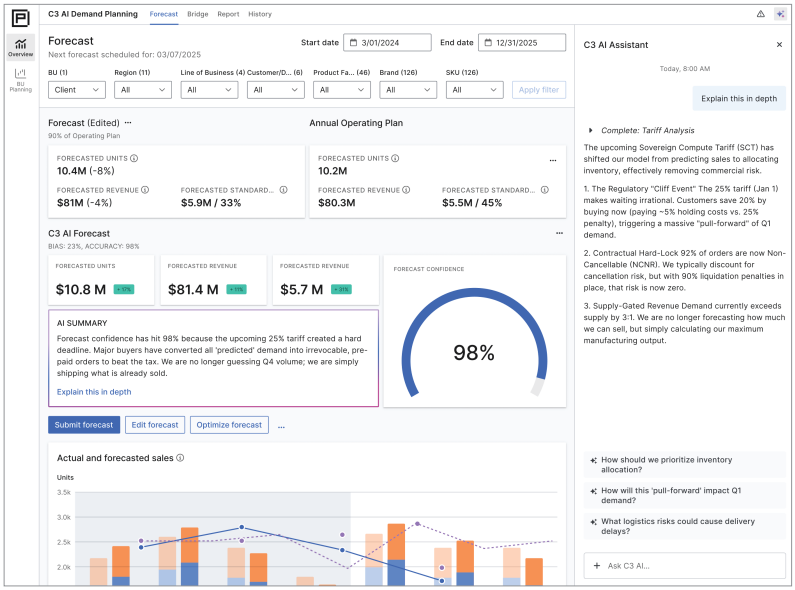
Sourcing System

- Sourcing Guides
- Customer Hierarchy
- SKU Hierarchy

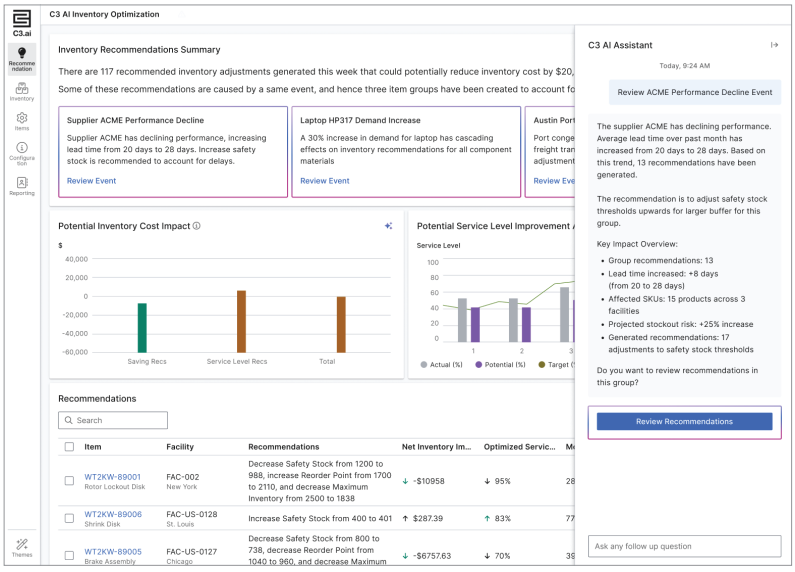
Downstream ERP System

- Daily Inventory Snapshots
- Inventory Movements Ledger
- Quarantined Inventories

C3 AI Demand Planning



C3 AI Inventory Optimization



Proven Results in Initial Production Deployment

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