

# C3 AI Inventory Optimization

## Reduce Excess Inventory and Working Capital While Meeting Service Level Targets

C3 AI® Inventory Optimization can effectively minimize inventory levels for parts, raw materials, and finished goods while ensuring companies meet customer service level agreements with sufficient inventory.



**20-50%**

Reduction in inventory levels and holding costs



**15-30%**

Reduction in shipping costs



**10-20%**

Improvement in service levels and OTIF performance



**Thousands**

of input variables and parameters considered and evaluated for optimization

C3 AI Inventory Optimization applies advanced machine learning and optimization techniques to enable inventory managers to reduce inventory levels of raw materials, sub-assemblies and finished goods while maintaining confidence that they will have sufficient safety stock to meet customer service level agreements.

Many companies use material requirements planning (MRP) software as part of traditional enterprise resource planning (ERP). Existing MRPs calculate purchase order quantities based on limited, deterministic parameters, such as historical demand forecast, available inventory, historical lead times, and target safety stock. These systems lack the ability to apply advanced optimization, respond to near-real time changes in data, model supply chain uncertainties (e.g., longer than expected supplier lead times, less than expected supplier quantities, demand forecast uncertainty), or simulate changes to MRP re-order parameters. As a result, companies often adopt conservative inventory policies to maintain buffer against uncertainties that MRP systems cannot account for.

### Feature Summary

- **AI-based stochastic inventory optimization** — Generate optimal inventory parameters by part + location combination, leveraging advanced AI algorithms with configurable parameters (e.g., recommendation frequency, target service level)
- **Assortment Optimization** – Allocate finished goods across facility networks to increase revenue and improve service levels
- **Multi-echelon Inventory Optimization** – Identify optimal levels of inventory to store across a bill of materials for complex products to minimize inventory cost and improve service level performance
- **Interpretable AI recommendations with evidence packages** — Understand, approve (manually or automatically) or modify AI-generated recommendations by identifying the underlying sources of uncertainty (e.g., supplier lead time, supplier quantity, blocked material movements, demand)
- **Near-real time monitoring and notifications** — View inventory metrics in real-time to identify anticipated issues with inventory levels and analyze root causes; get notified when certain KPIs exceed thresholds

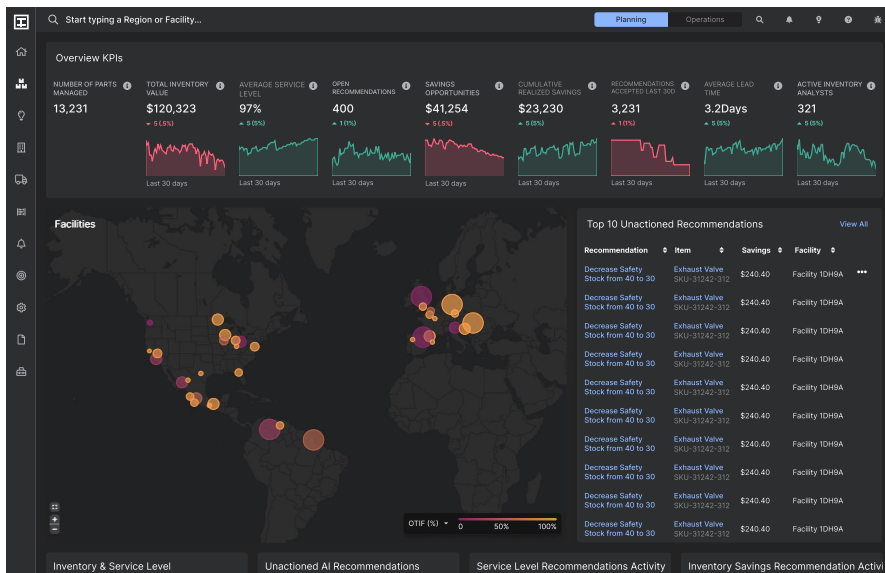


Figure 1. C3 AI Inventory Optimization enables users to view potential inventory savings and inventory costs, identify parts with highest savings opportunity, and view recommendations to optimize inventory levels

C3 AI Inventory Optimization overcomes these challenges by aggregating data from disparate source systems (e.g., bills of material, inventory movements from suppliers or inter-facility shipments, part-level costs for each location, demand forecasts) in a federated data image. The application models real-world uncertainties (e.g., variability in demand, supplier delivery times, quality issues) and dynamically and continuously optimizes reorder parameters to minimize inventory holding and shipping costs across all SKUs.

C3 AI Inventory Optimization also provides AI-based assortment optimization across locations and multi-echelon inventory optimization across a bill of materials driving reduced inventory costs and improved service levels across the whole supply chain.

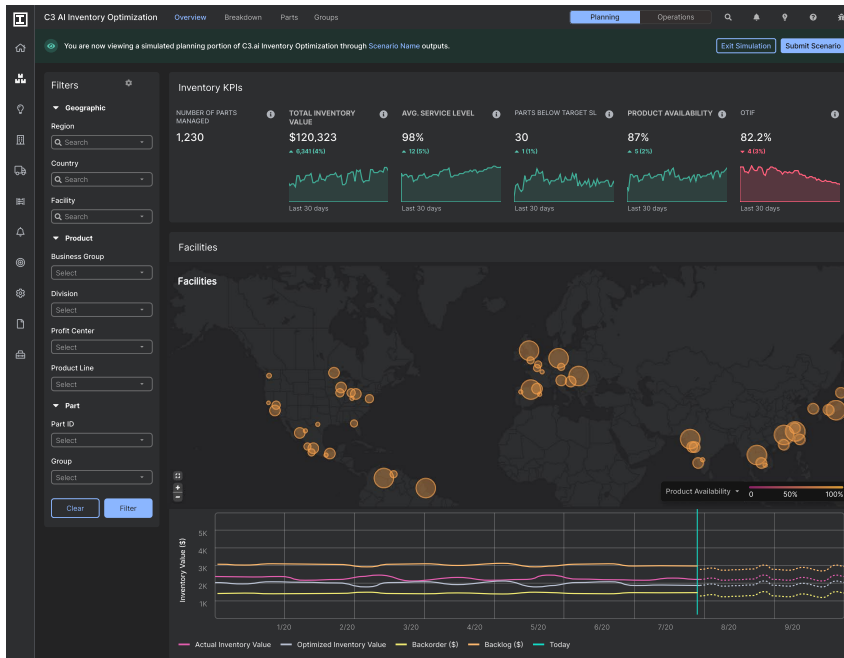


Figure 2. Using C3 AI Inventory Optimization, Inventory Planners can investigate the underlying factors driving inventory optimization recommendations, enabling them to confidently take action.

## Feature Summary (cont.)

- **Optimization by confidence-level** — Specify the level of maximum acceptable risk of stock-out for any part to optimize recommendations
- **Detailed view of individual parts** — View details of individual parts and compare KPI performance across parts over time – including actual and optimal inventory, actual and recommended re-order parameters, inventory savings opportunity, service level performance and MRP adherence
- **Leverage C3 AI Supply Chain Digital Twin** to rapidly integrate all relevant data and improve supply chain visibility
- **Ability to create 'What-if' scenarios** — Define scenarios and understand potential business implications of changing re-order parameters before committing the changes to the system
- **Live optimization with near real-time data integration** — Dynamically optimize re-order parameters as new data is received; bi-directionally connect to source systems to update reorder parameters
- **Scale to millions of parts, raw materials, and finished goods** — Scale to individually optimize inventory levels for millions of parts and SKUs at different production locations across a company's global footprint

## Reduce Inventory, Improve Visibility of Critical Uncertainties, and Increase Productivity

- **Decreased inventory costs and improve cash flow without compromising part availability** by optimizing re-order parameters such as safety stock, safety time subject to necessary confidence levels, leading to lower cost of capital, storage and material handling, insurance, and transportation costs.
- **Improved visibility of critical uncertainties** such as seasonality in demand, uncertainty in arrivals, quality issues from suppliers, and production-line disruptions
- **Improved ability to manage and negotiate with suppliers** by understanding supplier performance and simulating effects of order parameters and their impact on suppliers.
- **Improved organizational efficiency** through a common Supply Chain Control Tower and visibility to shared data cross teams, leading to optimized inventory aligned with organizational goals.
- **Increased productivity of inventory analysts** by automating recommendations for reorder parameters in near-real time, with live integration to operational systems that seamlessly update supplier orders.
- **Reduction in total landed costs** that include standard and expedited shipping costs as a result of reduced inventory.

Proven Results in 8-12 Weeks

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