DATA SHEET

C3.ai

C3 AI Inventory Optimization

Right-Size Inventory and Meet Service Level Targets

10-35%
Reduction in inventory levels and holding costs

5-15%
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 helps inventory managers right-size inventory and meet service levels with dynamic reorder recommendations. The application unifies disparate data such as inventory data, sales orders, and demand forecasts, applies AI models to dynamically generate item-level reorder parameter, and bi-directionally writes back optimized parameters to MRP and internal planning systems to seamlessly deliver optimized inventory order policies over time.

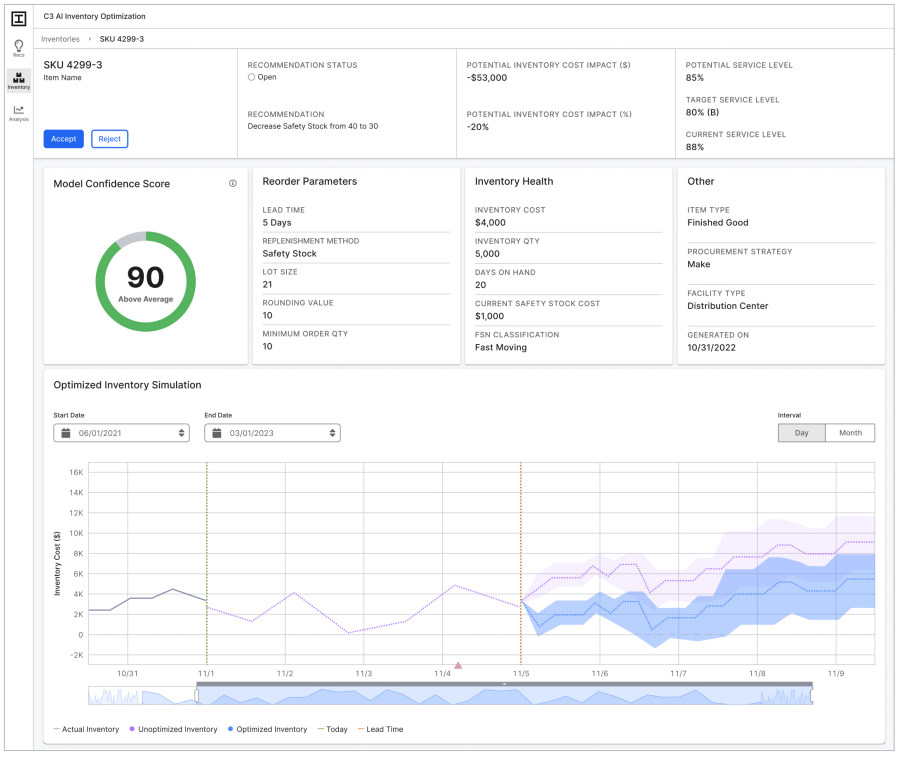

Figure 1. *C3 AI Inventory Optimization ensures users can understand and trust the model's recommendations through a comprehensive evidence package for every AI recommendation.*

Feature Summary

- **AI-based stochastic inventory optimization** – Generate optimal inventory parameters by part and 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** – 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

C3 AI Inventory Optimization aggregates 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.

The application 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.

C3 AI Inventory Optimization has been driving tangible business value across industries such as retail, CPG, manufacturing, oil & gas and more.

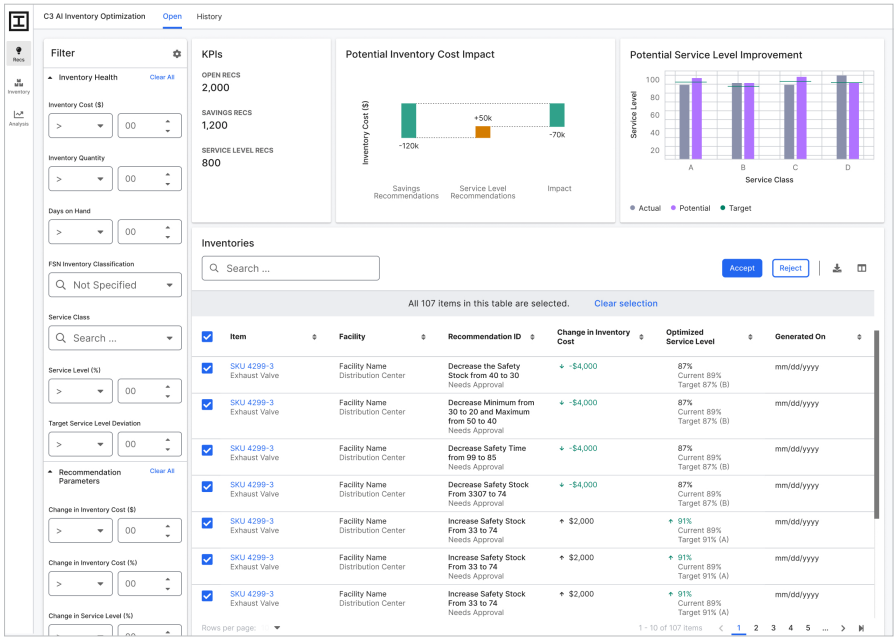

Figure 2. *Using C3 AI Inventory Optimization, Inventory Planners can investigate the underlying factors driving inventory optimization recommendations, enabling them to confidently take action.*

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
- **Supply Chain Digital Twin** – Integrate all relevant data and improve supply chain visibility
- **What-if scenarios** – Define scenarios and understand potential business implications of changing re-order parameters before committing the changes to the system
- **Real-time data integration** – Dynamically optimize re-order parameters as new data is received; bi-directionally connect to source systems to update reorder parameters
- **Scalability** – Scale to individually optimize inventory levels for millions of parts and SKUs at different production locations across a company's global footprint

Proven Results in 6-Month Pilot

Visit C3.ai/get-started