DATA SHEET

C3 AI Production Schedule Optimization

Meet production goals, maximize utilization, and reduce costs

C3 AI® Production Schedule Optimization provides schedulers, planners, and supply chain executives with dynamically optimized manufacturing schedules to maximize throughput and productivity.

10-20%
Improvement in OTIF planning and scheduling performance

5-15%
Reduction in scheduling costs

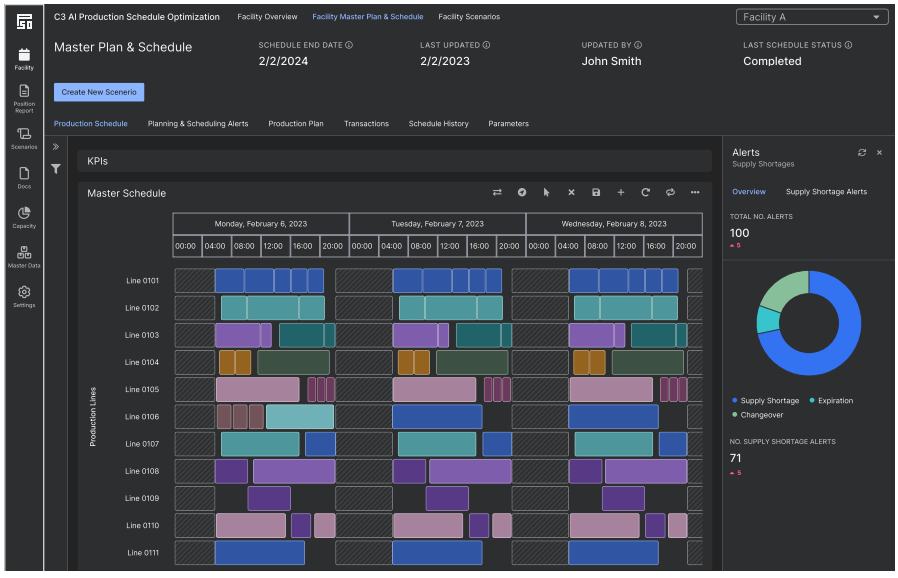
90%
Reduction in time to generate schedules

Thousands
of input variables and parameters considered and evaluated for optimization

C3 AI Production Schedule Optimization generates dynamic production schedules that help meet production goals, maximize line utilization, and reduce production costs. The application uses a holistic view of customer demand, supply chain, manufacturing, and distribution operations, and is built on the C3 AI Supply Chain Digital Twin that enables interoperability with other C3 AI Supply Chain Suite Applications.

Manufacturing and distribution scheduling is a complex and multi-dimensional task. Constantly evolving customer demand, supply uncertainties, broader market movements, and operational constraints such as line configurations, recipes, and staffing schedules further amplify scheduling complexities.

Traditional rule-based planning systems and deterministic optimizers fail to respond to the ever-changing market conditions and do not consider all operational constraints. Legacy scheduling systems do not account for the complex manufacturing and distribution configurations, are difficult to maintain because of the evolving processes and require manual intervention across the board, resulting in suboptimal schedules with costly change-overs and underutilized line time. Poor scheduling frequently results in item stock-outs, missed revenue opportunities, costly change-overs, and low capacity utilization.



Feature Summary

- **Plan and schedule any complex manufacturing or distribution system** using an elastic solver across thousands of production lines
- **Ad-hoc analysis** through flexible experimentation and scenario analyses via adjusting optimization configurations and parameters
- **Directly integrate with existing ERP systems** to seamlessly execute on optimized schedules
- **Understand AI-generated insights using** an interpretability framework that provides visibility into major cost drivers, and production and distribution bottlenecks
- **Capture all planning and scheduling constraints** that change over time, including cost, availability, asset performance, and process requirements for equipment, staffing, and transportation
- **Run, save, benchmark, and analyze what-if scenarios** to assess the impact of planning and production modifications on plant and distribution throughput and cost

Figure 1. *C3 AI Production Schedule Optimization uses AI and optimization techniques to generate granular, accurate, and optimal industrial schedules.*

C3 AI Production Schedule Optimization offers an alternative to legacy scheduling software with an AI-optimized approach. The application provides optimal manufacturing schedules according to configurable objective functions (e.g., maximize margin, minimize cost, maximize fill rate, and others) and operational constraints (e.g., storage policy, asset performance, staffing schedules, and others). The optimization approaches are flexible to enable immediate-term, execution focused scheduling as well as long-horizon supply and capacity planning. Further, contextualized and actionable insights provide near real-time adjustments that operators can seamlessly push to planning and execution systems.

C3 AI Production Schedule Optimization enables collaboration across supply chain and manufacturing operations, sales and marketing analysts, buyers and sellers, and schedulers. The application supports discrete, batch, semi-batch, and continuous manufacturing processes in network of facilities and third-party logistics, delivering benefits across industries such as CPG manufacturing, automotive, retail, pharmaceuticals, and food and beverage.

Feature Summary (cont.)

- **Re-use data integrations to address use cases across the supply chain** by integrating with other C3 AI applications for end-to-end production and supply chain management
- **Leverage C3 AI Supply Chain Digital Twin** to rapidly integrate all relevant data and improve supply chain visibility

Powerful Analytics Streamline Production and Distribution Decisions

- **Meet customer demand** – Optimize the end-to-end process to ensure each manufacturing and distribution asset is optimally utilized and that customers get orders on time and in full.
- **Maximize high-margin products throughput** – Precisely prioritize high-margin products across the manufacturing and distribution chain by deploying resources at the right time, in the right order, at the right capacity with optimal scheduling.
- **Minimize distribution scheduling costs** – Cut down on transition, inventory, transportation, staffing and other costs by deploying optimally allocating tasks to resources at the right time, in the right order and at the right capacity.
- **Minimize last-minute planning and scheduling changes –** Predict orders likely to be modified using AI and update planning and scheduling accordingly.
- **Increase departmental efficiency** – Align Sales, Marketing, Purchasing, Planning, Production, and Distribution activities behind one planning and scheduling suite.

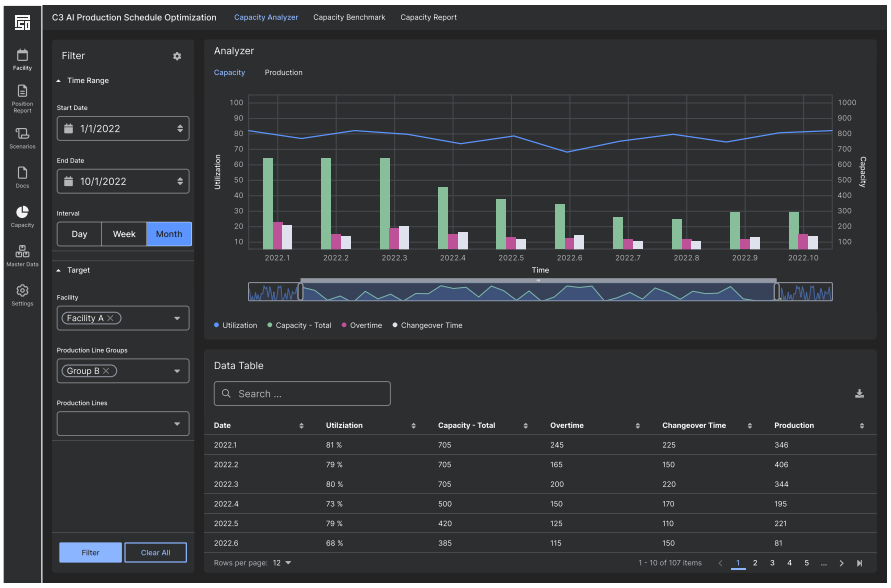


Figure 2. *C3 AI Production Schedule Optimization enables AI-based analysis for production schedulers to generate and evaluate optimal industrial schedules.*

Proven Results in 8-12 Weeks | **Visit C3.ai/get-started**