AI for Manufacturing



Dramatically increase manufacturing throughput, supply chain efficiencies, and services revenue using AI at enterprise scale

Global manufacturers today face multiple business challenges that put pressure on profit margins and growth: limited supply network visibility, high inventory costs, unproven service business models, and poor data analysis processes. Manufacturers seek to overcome these challenges via AI and IoT digital transformation strategies. Until now, integration and scaling hurdles stymied production deployments of these efforts, resulting in long delays, elusive ROI, and inconsistent progress.

The C3 AI Suite™ provides the necessary comprehensive capabilities to build enterprise-scale AI applications 40x faster than alternative approaches. The C3 AI Suite enables manufacturers to rapidly integrate petabyte-scale data from any/all enterprise systems, operational sources, sensor networks, and external providers to power machine learning models that generate predictive insights to solve previously unsolvable problems. Many global manufacturers are already using the C3 AI Suite to drive digital transformation efforts, generating results such as: reducing inventory by as much as 35%, lowering waste due to quality defects by over 20%, and generating hundreds of millions of dollars in economic value annually.



C3.ai Applications for Manufacturing

C3.ai manufacturing applications are built on the C3 AI Suite and use AI at scale to provide ever-smarter actionable insights for business-critical challenges. These applications include:

C3 Inventory Optimization™

Reduce inventory holding costs, improve cash flow and supply chain visibility, and increase the productivity of inventory analysts. C3 Inventory Optimization uses advanced machine learning to analyze variability in demand, supplier delivery times, quality issues, and product line disruptions to build real-time recommendations, so users can optimize operations by confidence level and receive real-time notifications and root cause analysis.

C3 Next-Generation CRM™

Improve profitability across sales, marketing, and customer service by generating Al-generated forecasts and scores in real time using machine learning insights built from internal and external data sets.

C3 Predictive Maintenance™

Aggregate data from sensors, devices, enterprise systems, and operational systems (e.g., SCADA, OMS, GIS) to generate accurate predictions of asset failure. C3 Predictive Maintenance provides planners and operators with comprehensive insight into asset risk, enabling them to maintain higher levels of asset availability and lower maintenance costs, and deliver differentiation through service offerings.

Price Optimization

Build a unified federated image of aggregate sourcing data to perform pricing analytics and visualization. Create optimal price estimates for raw materials based on advanced machine learning analysis of previous pricing and expected consumption.

C3 Yield Optimization™

Improve throughput and product quality by applying advanced machine learning to complex discrete, batch, or process manufacturing data in order to pinpoint process opportunities to identify defects early and improve overall yields.

Profitable BOM

Maintain accurate bill of materials (BOM) pricing and componentry for highly complex products at each stage of engineering, delivery, and after-market. Calculate profitability for design, as-built, and added components for after-market stages.

C3 AI Suite: Deploy Preconfigured Applications and Build Custom Applications



Case Study: Optimizing Inventory for a F100 Manufacturer



Leverage machine learning and a stochastic optimization algorithm to:

- Dynamically optimize reorder parameter levels (e.g., safety stock, safety time)
- Avoid stock-out of parts at a specific confidence level
- Measure real-world uncertainties such as demand variability, supplier delivery times, quality issues, and production line disruptions



Case Study: Optimize Yield for a \$15 Billion Plastics Producer



Apply machine learning algorithms to:

- Identify main causes of poor quality or defects early in the production process
- Reduce errors caused by using sample data in lab tests
- Make real-time process engineering adjustments
- Provide insights for long-term process improvements



Build and Deploy Applications 40x Faster

The C3 AI Suite is comprehensive software that uses a model-driven architecture to accelerate delivery and dramatically reduce the complexities of developing AI-enabled applications.

The horizontally scalable architecture of the C3 AI Suite provides the foundation to develop next-generation AI applications that use federated data management and machine learning in a secure, scalable environment. With the C3 AI Suite, organizations can rapidly develop and operate AI applications that run on any public or private cloud environment.

The C3 AI Suite's set of visual application development and AI tools, C3 Integrated Development Studio (C3 IDS), is a low-code/no-code environment for developing, deploying, and operating enterprise AI applications. C3 IDS provides data ingestion, data modeling, machine learning feature engineering and model lifecycle management, and a metadata-driven UI development tool. With C3 IDS, application developers can configure the application user experiences and deploy AI-enabled applications. Data scientists can configure application data models and develop, train, and deploy machine learning models.

The C3 AI Suite delivers a set of services and capabilities that underpin the ability to deliver AI applications 40x faster than alternative methods. A model-driven abstraction layer; a comprehensive set of data integration, management, and processing capabilities; time series services; AI and model management; and a robust security framework speed data science and application development to accelerate delivery of AI at enterprise scale.



Proven Results in Weeks, Not Years

Complete a low-cost, low-risk production trial of the C3 AI Suite™ in just 8–12 weeks. Validate the economic value and other benefits to your organization before expanding into full production use. For more details, visit www.C3.ai.