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⊟ C3 AI Demand Forecasting

AI-Powered Segmentation & Demand Forecasting

C3 AI® Demand Forecasting is an enterprise AI application that applies advanced artificial intelligence (AI) and machine learning (ML) techniques to help large, complex organizations more accurately and efficiently forecast demand to improve service levels and drive supply chain cost reduction.

Many companies today employ limited demand forecasting and demand sensing capabilities that are both inflexible and inaccurate. Existing capabilities utilize insufficient data (e.g., only historical sales), simple statistical and/or limited AI/ML techniques, and fail to provide the configurability required to scale across products, locations, and other segments that vary in demand profile and data availability. These shortcomings ultimately result in increased production & distribution costs, excess inventory, service level issues, and drawn-out Consensus Planning cycles in which significant manual forecast adjustment is required.

C3 AI Demand Forecasting unifies all relevant enterprise (e.g., historical sales, promotions, marketing/advertisement, customer information) and external data (e.g., macro-economic trends, market data, customer and competitor intel, weather, news, search trends, customer promotions) in a federated data image. As data change, the data image is automatically refreshed while maintaining a full version history in correlated time series designed specifically for AI/ML use.

Feature Summary

- **Data:** Leverage any and all available enterprise and external data to improve AI/ML model accuracy

- **Feature Engineering:** Automatically generate model features; highlight patterns, transform variables, and isolate key information.

- **Interpretability:** Explain how the model arrived at its predictions, globally and locally, across time.

- **Models:** Choose from over twenty of best in class open-source and proprietary AI/ML models for forecasting, regression, anomaly detection, classification, change point detection, and clustering.

- **Tools:** Analyze time series signals with provided general-purpose toolkits for decomposition, correlation analysis, trend analysis, and transformations, and more.

- **Graphics:** Rapidly configure vizualizations for advanced time series analysis, including histograms, scatterplots, seasonal decomposition plots, many more out-of-the-box graphics.

- **Diagnostics:** Continuously monitor model accuracy to further optimize performance with possible predictors and fitted values.
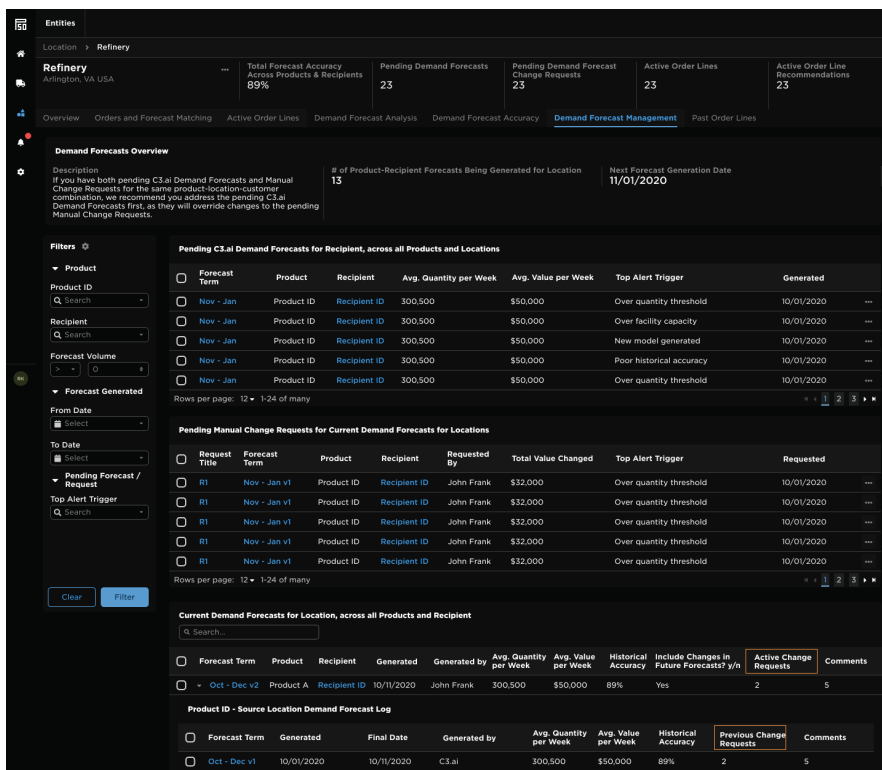

Figure 1. C3 AI Demand Forecasting allows demand planners to manage pending requests for forecasts specific to locations and recipients

C3 AI Demand Forecasting provides demand modelers with a combination of rule and AI/ML-based segmentation capabilities, including unsupervised clustering, that enable both automated and dynamic segmentation based on demand profile, data availability, and other characteristics. Through configurable hierarchies, demand modelers are afforded the flexibility to tailor forecasting approaches to specific segments. This includes configurable demand forecast horizon and interval (e.g., both long term forecasting at a monthly interval and short term demand sensing at a daily interval), as well as configurable demand forecast level (e.g., product, product-location product-customer).

C3 AI Demand Forecasting supplies over twenty of out-of-the-box AI/ML models for both demand forecasting and demand sensing, including models for data cleaning (e.g., anomaly detection, imputation) and time series forecasting (e.g., deep learning, ML-based autoregression). Demand modelers compose these models into pipelines that can be published for demand planners to use in generating new forecasts. Demand modelers can also easily integrate their favorite open-source or proprietary model, and run experiments to benchmark performance across any number of pipelines.

C3 AI Demand Forecasting provides comprehensive AI/ML model operations and monitoring capabilities, that allow for seamless swapping in and out of models (e.g., champion vs. challenger) and ensure high-accuracy demand forecasts generated by production pipelines.

C3 AI Demand Forecasting boosts demand planner efficiency as new forecasts are reviewed an exception basis and prioritized by configurable business rules (e.g., difference from last forecast). C3 AI Demand Forecasting presents each demand forecast with rich evidence packages, including feature contributions and other contextual data, that explain the "why?" behind the forecast. Planners can create ad-hoc forecast scenarios, modifying input data and/or AI/ML model parameters to generate new forecasts. After comparing forecasts across scenarios, demand planners can promote a selected forecast, that automatically pushes the forecast into the customer's ERP or other integrated planning system.

Improve Forecast Accuracy and Drive Operational Efficiency with AI-Powered Forecasting

Benefits of C3 AI Demand Forecasting include:

- **Improve operational efficiency and reduce supply-related costs** by providing more accurate demand forecasts to production and purchasing teams, ensuring capacity and scheduling align with customer demand

- **Improve order fill rate** and increase customer satisfaction through more accurate demand forecasting

- **Lower inventory costs** and free up working capital by providing more accurate demand forecasts to inventory planning teams

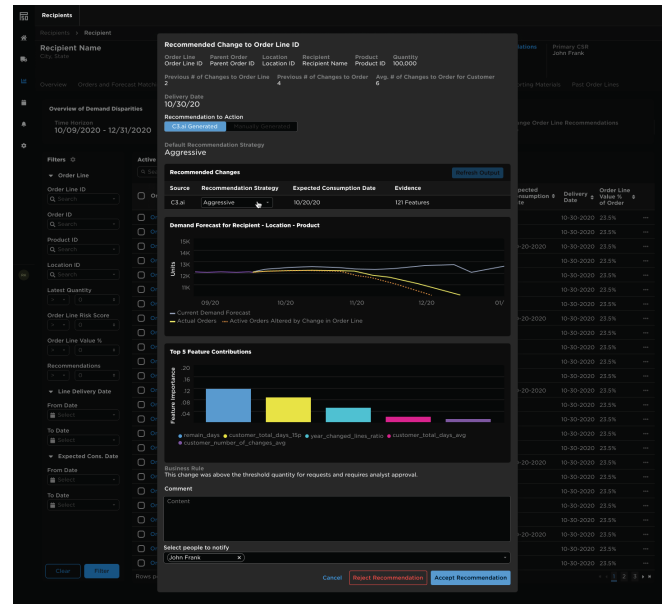- **Improve Planner productivity** and reduce the overall demand planning cycle time

Figure 2. C3 AI Demand Forecasting provides order change predictions based on machine learning forecasts with clear evidence packages to drive AI interpretability

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