

# Euro7000 Forecasting Intelligence Platform

## Info

**Project Duration:** 6 months  
(Discovery to Production Deployment)  
**Industry:** Distribution & Supply Chain Management



## Introduction

Our team successfully delivered a comprehensive Forecasting Intelligence Platform for a leading distribution enterprise, transforming their operational data ecosystem from fragmented, siloed systems into a unified, real-time analytics powerhouse. This end-to-end solution combines advanced statistical modeling, machine learning forecasting, and intuitive visualization to drive strategic decision-making across sales, inventory, and dealer relationship management.

## Client Requirements

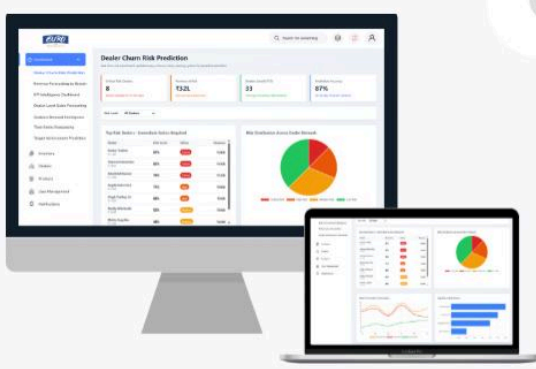
The client required an end-to-end forecasting and analytics platform that would eliminate manual reporting burdens, provide real-time visibility into operational health across 15+ key performance indicators, and transform their approach from reactive problem-solving to proactive, data-driven decision-making. The solution needed to preserve their existing Tally ERP investments while unlocking advanced analytical capabilities, be accessible to non-technical stakeholders across sales, operations, and executive teams, and scale to support future growth and increasingly sophisticated analytical use cases.

## KPIs of Euro 7000 - Forecasting Intelligence Platform



### Dealer Churn Risk Prediction

The system uses a multi-factor risk score-based on visit recency, payment behavior, and engagement velocity-to generate daily dealer-level churn predictions. It acts as an early-warning tool that enables proactive retention efforts, identifying high-risk dealers 60-90 days before potential churn for timely, targeted intervention.



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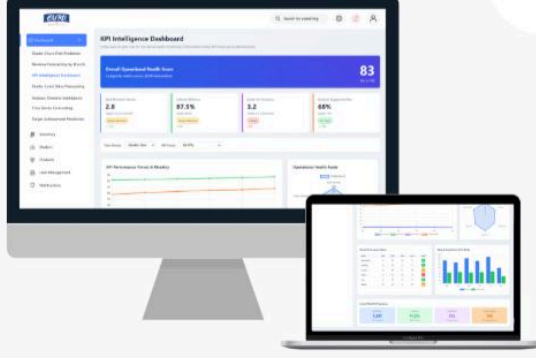
### Revenue Forecasting by Branch

The model uses time-series decomposition with trend and seasonality analysis to produce monthly revenue forecasts for each branch and regional cluster. These projections are shown through interactive line charts with month-over-month growth indicators, giving managers clear visibility into performance shifts. This helps branch leaders anticipate revenue dips early and optimize resources to maintain consistent growth.



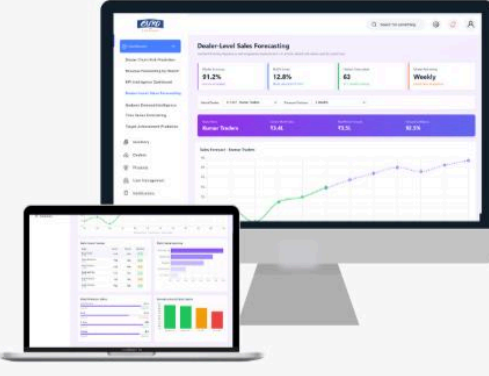
### KPI Intelligence Dashboard

The system tracks core operational metrics such as stock movement velocity, collection efficiency, dealer visit frequency, and carpenter engagement. These are automatically consolidated into monthly KPI rollups across all operational dimensions. With a single-pane-of-glass dashboard, teams get clear decision-ready insights to monitor overall health and respond quickly to emerging issues.



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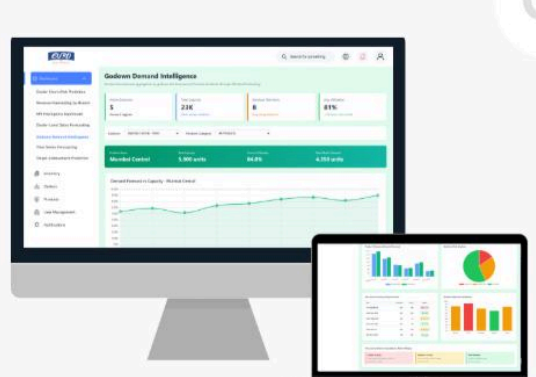
### Dealer-Level Sales Forecasting (ML-Powered)

The forecasting system uses a Gradient Boosting Regression model with engineered features like 3-month lags, rolling averages, and seasonality encoding to generate dealer-specific forecasts for the next 1-6 months. It achieves under 15% MAPE for dealers with at least a year of history and retains weekly on the latest data to ensure consistently fresh and accurate predictions.



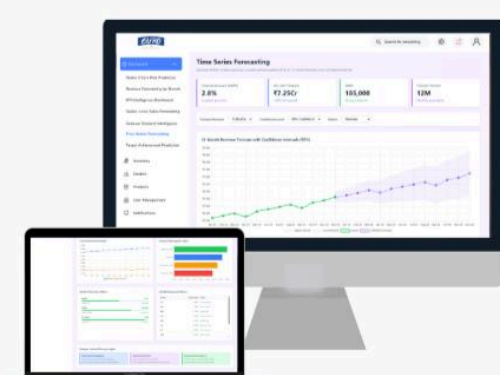
### Godown Demand Intelligence

The analysis aggregates product-level demand by godown and time period to give a clear view of inventory patterns. Interactive visuals with dropdown filters help users explore godown-specific insights. By forecasting SKU-level needs, the system reduces stockouts and improves inventory planning. These forecasts also feed directly into procurement workflows, creating a more synchronized and efficient supply chain.



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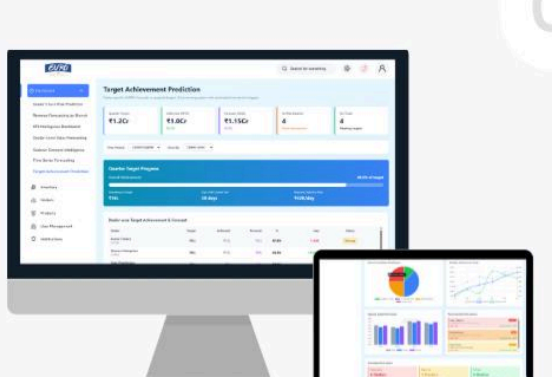
### Time Series Forecasting

The forecasting framework uses Seasonal ARIMA models to capture recurring demand patterns with strong statistical accuracy. Each forecast includes confidence intervals for better scenario planning and risk assessment. With up to 12 months of monthly projections, the system supports long-term strategic decisions, especially for capacity planning and building seasonal inventory in advance.



### Target Achievement Prediction

The system uses dealer-specific SARIMA forecasts and compares them with assigned targets to assess performance. It flags underperforming dealers up to a month before quarter-end, enabling timely intervention. A network-wide performance ranking highlights strengths and gaps, and automated alerts are triggered when gap-to-target thresholds are crossed, ensuring fast, data-driven action from sales teams.



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## Challenges and Approach

### Challenges

Our client faced critical operational blind spots that were hindering growth and efficiency:

- Data Fragmentation Crisis:** Transactional data scattered across multiple Tally ERP instances with no centralized access
- Manual Reporting Burden:** Analytics teams spending 40+ hours weekly extracting and reconciling data manually
- Reactive Decision-Making:** Lack of predictive capabilities meant responding to problems after they occurred
- Revenue Leakage:** No systematic approach to identify at-risk dealers before churn occurred
- Inventory Imbalances:** Godown-level demand forecasting was guesswork, leading to stockouts and overstock situations
- Limited Visibility:** Branch and regional performance insights were weeks old by the time they reached decision-makers
- Outstanding Payment Risk Management:** No systematic framework to assess dealer creditworthiness and outstanding balances before approving new supply orders, creating exposure to bad debt and working capital strain

### Project Approach And Results

#### Quantifiable Outcomes (Post-Implementation)

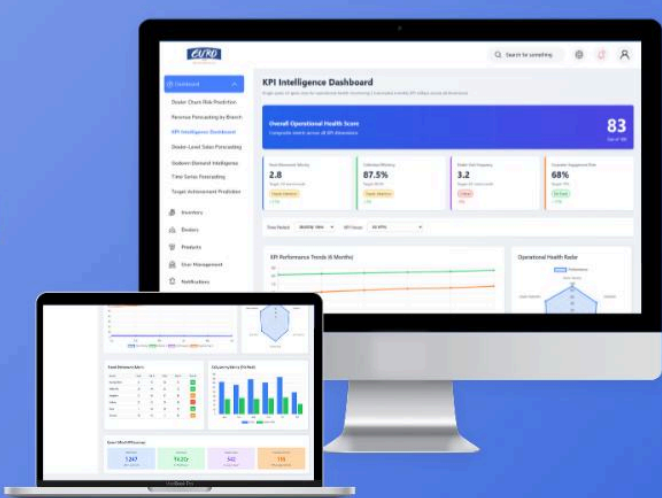
Metric	Before	After	Improvement
Time to Insights	5-7 days	< 4 hours	97% faster
Dealer Churn Rate	18% annually	12% annually	33% reduction
Forecast Accuracy	N/A (no forecasting)	85% (MAPE 15%)	New capability
Inventory Stockouts	23 instances/month	8 instances/month	65% reduction
Manual Reporting Hours	160 hrs/month	10 hrs/month	94% efficiency gain

#### Strategic Benefits

- Proactive Sales Management:** Sales teams now receive weekly "at-risk dealer" reports, enabling retention campaigns before churn occurs
- Data-Driven Territory Planning:** Branch managers use revenue forecasts to set realistic targets and allocate field resources optimally
- Supply Chain Optimization:** Procurement teams reduce excess inventory by 30% while maintaining 98% service levels
- Executive Confidence:** C-suite leadership gained real-time visibility into business health across 15+ operational KPIs

## Key Outcome

## Euro7000 Forecasting Intelligence Platform



## Technology Stack

Technologies we used



Apache Airflow



snowflake



XGBoost



Streamlit

## Conclusion

This project exemplifies our commitment to building production-grade, business-focused solutions that deliver measurable ROI. The platform's architecture ensures scalability for future growth, while its intuitive design guarantees sustained adoption across all organizational levels. From automated data pipelines to real-time predictive dashboards, every component was engineered to bridge the gap between raw data and strategic decision-making.