



CASE STUDY

Manufacturing Demand Forecasting Using Machine Learning



Just the Headlines

Short on time? Here are the key facts.

- A manufacturer wanted to make better supply chain decisions but didn't have accurate manufacturing demand forecasting data.
- 2nd Watch built an advanced manufacturing demand forecasting model using machine learning to forecast demand by week and month.
- The models and process change enabled an 8% increase in accuracy for weekly sales demands and a 12% increase in monthly sales demand accuracy.

Industry

Manufacturing



The Challenge

An international manufacturer was struggling to make supply chain decisions due to inaccurate manufacturing demand forecasting, the variability of their product demand, and unknowns in their supply chain. A large majority of their products include electronic components for various industrial applications that are purchased in large quantities by both consumers and distributors. The nature of large order sizes, lack of any recognizable seasonality, and long lead times added to the challenge of forecasting.

Prior to this engagement, forecasting was done at an individual SKU level based on an average of the prior day, week, month, quarter, and year sales quantities. Numbers that didn't reflect any other influences or nuances resulted in forecasts that could not be trusted, lengthy manual decision-making processes, and lost profits.

Featured
Technologies

R

The Solution

2nd Watch built advanced manufacturing demand forecasting using machine learning models to forecast demand by week and month for the client's largest and most volatile products. 2nd Watch introduced a process that utilized statistical packages and machine learning methods in R to drive more effective forecasts. We underwent a process of feature selection, model analysis, and outlier analysis to ultimately develop a set of time series models that decomposed changing trends and volatility of the client's past sales demand.

The Outcome

Our process and models enabled an 8% increase in accuracy for weekly sales demand and a 12% increase in monthly sales demand accuracy for the largest of the client's product offerings. The impact of these resulting baseline metrics alone was such that the client has undergone an initiative to implement similar measures across all of their divisions and the components of their supply chain.