

CASE STUDY ↘

Enhancing NPI Forecast Accuracy with AI Technology

This leading global consumer goods company operates in a highly competitive industry where introducing new products is vital for maintaining market share and driving growth. Accurately forecasting demand for new products is essential for optimizing inventory levels, reducing stockouts, and meeting revenue targets.



The situation

The company's planners struggled with new product introduction (NPI) forecasts. Their manual NPI forecasting process consistently overestimated true demand and significantly underperformed the accuracy of the rest of the product portfolio. Given the volume and velocity of demand in the CPG industry, any improvement in forecast accuracy can deliver substantial financial benefits. For instance, a study by the Institute of Business Forecasting (IBF) found that even a one-percentage point improvement in forecasting error at a \$50 million turnover company can result in savings of as much as \$1.52 million. Leveraging e2open's AI technology, the client aimed to enhance their forecasting processes and reduce forecast error.

The challenge

The company faced several major challenges with its previous forecasting method. Planners relied on manual processes, spreadsheets, and their best judgment to estimate demand for new products without any demand history. The MAPE (Mean Absolute Percentage Error – a widely accepted forecast accuracy metric)

for new products was significantly worse than that for mature products. The bias was 11 percent, indicating the forecast consistently overestimated true demand. While new products made up about 7 percent of the total product portfolio, they accounted for over 17 percent of the total absolute error (TAE) across the portfolio.

The solution

The company turned to e2open and its proprietary AI technology to help solve the challenge. E2open Demand Sensing utilizes AI with automatic clustering to identify existing products with similar characteristics, combined with actual demand signals to more accurately forecast new product demand volume. The company's product portfolio was analyzed using

automated feature engineering to extract attributes that influence launch patterns. Products with similar attributes were grouped into clusters. When a new product was launched, its attributes were used to assign it to the most similar cluster. Forecasts for the new product were then generated by applying scaling and pattern-matching techniques based on historical data from that cluster.



CPG Company

Challenges

- New product forecast error leading to inventory challenges
- Inefficient and biased manual forecasting processes

Solution

AI-enabled clustering to predict new product volumes by forecasting demand based on items with similar behavior.

Applications

- E2open Demand Sensing

The outcome

The data proved a definitive outcome: e2open's Demand Sensing application delivered substantially improved results. New product forecasts became both more accurate and reduced application of human bias in forecasts, with MAPE reductions of 10–34% compared to the baseline and bias improvements of 32–59%.

Two key factors drove the significant performance gains:

AI-enabled clustering: Demand Sensing enabled the identification of specific features linking new products to existing products with similar

characteristics—connections that are difficult for planners to recognize manually.

Data over gut feel: Employing a data-driven methodology eliminated the subjective bias inherent in manual, consensus-based processes, where decisions are influenced by individuals' emotions, preferences, and past experiences.

This case study demonstrates the transformative impact of e2open's AI technology on demand forecasting and highlights the potential for other organizations to achieve similar improvements in their forecasting processes.

Applications

E2open Demand Sensing



IMPROVED

Planner Productivity and Job Satisfaction



IMPROVED

New Product MAPE Between 10 – 34%



REDUCED

Planner Forecast Bias by 32 – 59%

About e2open

E2open is the connected supply chain software platform that enables the world's largest companies to transform the way they make, move, and sell goods and services. With the broadest cloud-native global platform purpose-built for modern supply chains, e2open connects more than 500,000 manufacturing, logistics, channel, and distribution partners as one multi-enterprise network tracking over 18 billion transactions annually. Our SaaS platform anticipates disruptions and opportunities to help companies improve efficiency, reduce waste, and operate sustainably. Moving as one.™ Learn More: www.e2open.com

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