

WHITE PAPER

# Increase revenue with AI/ML-Powered Demand Planning

How to improve your forecast  
accuracy and customer satisfaction

**Anaplan**



## 1. What are AI and Machine Learning?

Artificial intelligence (AI) is a broad term for the ability of a computer to perform various analysis and decision processes associated with the human brain. Machine Learning (ML) is a specific type of AI in which a computer analyzes multiple types of data, builds a model to make predictions (or decisions) from this data, evaluates the output, and then learns from its results and tunes the model for optimal predictions.

## 2. Why are AI and Machine Learning Important for Demand Planning?

You know that demand planning has never been more difficult. Changing consumer behavior, shorter product lifecycles, and increasingly frequent supply chain disruptions such as during the COVID-19 pandemic have all contributed to increase the uncertainty of demand. But help is on the way.



AI can **improve** forecast accuracy by

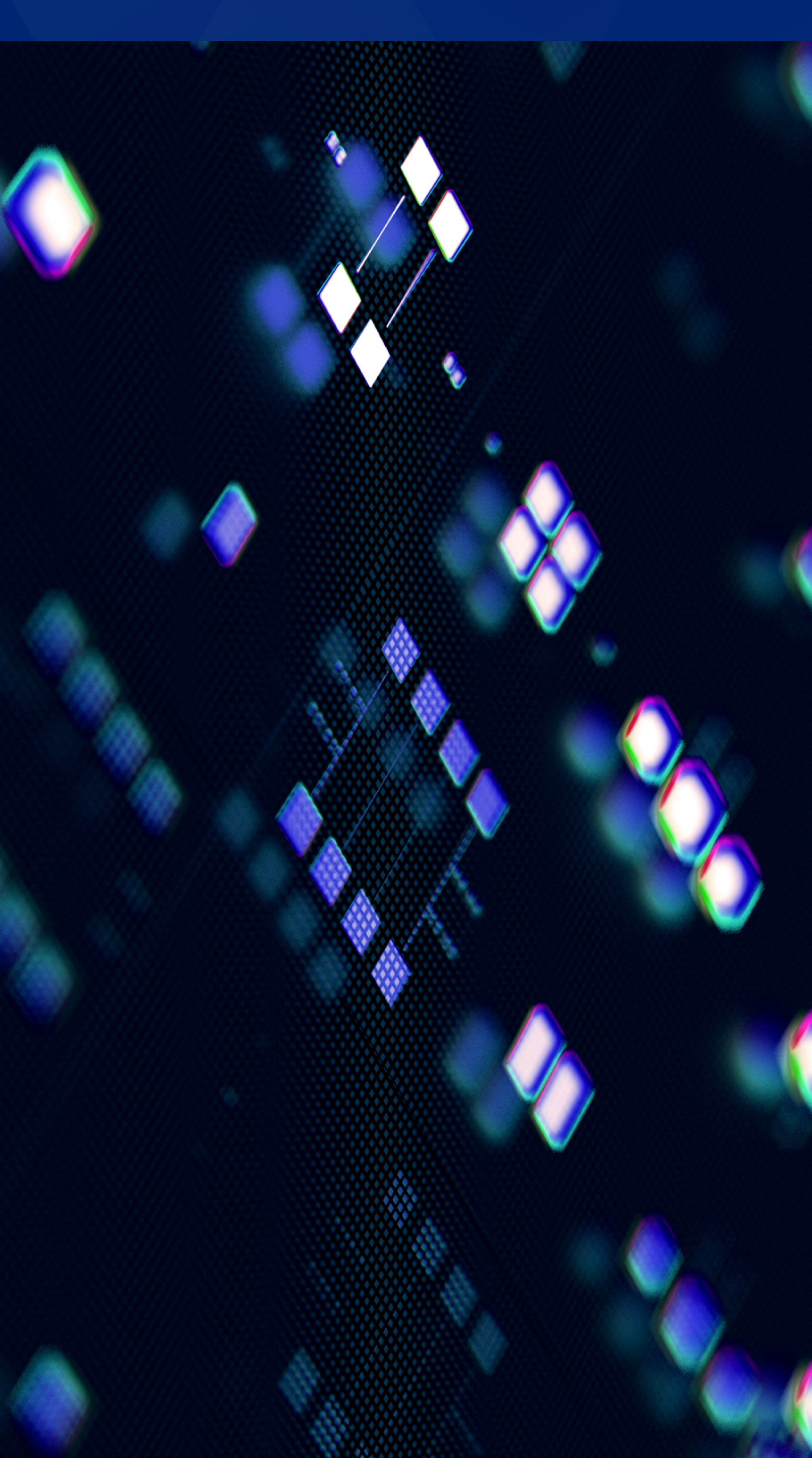
# 10 to 20%

Resulting in up to a **5% reduction in inventory**, and revenue increases of **2 to 3%**

In recent years, AI and ML have shown great promise for helping planners improve their forecasts. Research from the McKinsey Global Institute found that AI can improve forecast accuracy between 10 to 20 percent, resulting in up to a 5 percent reduction in inventory, and revenue increases of 2 to 3 percent.<sup>1</sup>

Demand planning is particularly suited to ML because a demand planning application has ongoing access to actual demand data. It can continuously compare its forecasts with actual results and improve its accuracy over time. In addition, ML is better than traditional forecasting techniques at sorting out which “causal factors” (see below for more detail) are driving demand and how these change over time as market conditions evolve.





### 3. Why now?

You've probably heard a lot about AI and ML over the last several years. Interest in AI and ML has been driven by advances in data science and the increasing availability of cloud computing power. However, until now the application of ML to enterprise demand planning has been limited because ML can be complex and labor intensive, requiring employees with deep backgrounds in data science.

That's all changed. AI and ML have matured to the point where they can be automated so that non-specialists can use the technology and companies can scale its application across their businesses. Anaplan is at the forefront of this trend, and has embedded its own ML technology in the form of PlanIQ with Amazon Forecast into its Demand Planning application. Amazon Forecast is based on the world-class forecasting technology Amazon developed to run its own businesses, and Anaplan has natively integrated it into the Anaplan platform. The technology is very sophisticated, but it insulates users from complexity through automation. This will "democratize" ML, so that planners without data science expertise can use and benefit from the technology throughout their companies.

## EXAMPLE

### AI and ML success story

INDUSTRY	CHALLENGE	SOLUTION HIGHLIGHTS	RESULTS
<b>Industrial</b>	Replace traditional forecasting system with one that wouldn't need constant overrides by the sales team	Data about the company's past and future activities includes things such as promotional periods, prices, opportunities, industry market caps, and historic stockouts	<ul style="list-style-type: none"><li>Improved forecast accuracy by 2-8%, depending on customer segments; minimized the need for manual overrides</li><li>Instilled trust in the forecasting process</li></ul>
<b>Consumer Goods</b>	Improve expensive and error-prone forecasting for certain products at top-tier retailers	Up and running in a few days	<ul style="list-style-type: none"><li>Outperforming both the prior solution and manual forecast process</li></ul>
<b>Retail</b>	Improve forecasts and reduce inventory by using large volumes of data that existing solution couldn't handle	Create forecasts across tens of thousands of SKUs	<ul style="list-style-type: none"><li>Improved forecasts</li><li>Revealed millions of dollars in potential savings</li></ul>
<b>Pharmaceuticals</b>	Automate very manual forecasting processes	End-to-end process, from setting up the App to visualizing the forecasts, took less than five days	<ul style="list-style-type: none"><li>Delivered better predictions than the company's existing manual process about 75% of the time</li><li>Accuracy improved between 2-16%</li></ul>
<b>Healthcare</b>	Replace spreadsheet-based manual forecasting to increase efficiency, improve accuracy, and reduce errors	Leveraged four years of daily data to forecast staffing needs and reduce costs	<ul style="list-style-type: none"><li>Increased accuracy</li><li>Reduced costs; Simplified forecasting process</li></ul>



### CPG CASE STUDY

An innovative food and beverage subsidiary of one of the world's largest consumer packaged goods (CPG) companies wanted to improve the efficiency of its forecasting process. Their forecasts were sufficiently accurate, but their process was very manual and time-consuming. Forecasts are particularly challenging for this company because of the seasonal nature of their products and the large number of promotions they run. A given promotion can behave differently depending on the product, customer, and time of year. If the forecast is too low, shelves go empty and revenue is lost. If too high, not only does the company incur higher inventory carrying costs, but there can be considerable spoilage of their perishable products.

The company deployed Demand Planning with PlanIQ. They are now obtaining the accuracy they need with a much more automated and efficient process.

## What are Causal Factors?

As noted earlier, ML is particularly good at using causal factors for forecasting. Causal factors are related effects, such as promotions, pricing, and weather, that can be used to explain and predict changes in demand. Causal factor data can come from internal sources (such as promotions), external sources (such as government data – for example, housing starts), or PlanIQ built-in sources (such as Amazon Forecast Weather Index, which provides a 14-day weather forecast by location).

Demand planning teams typically have an intuitive sense for what causal factors drive demand. But to take full advantage of causal factors, companies use ML technology to quickly figure out which particular variables are the most important, their quantitative impact, and how this behavior changes over time.

By leveraging PlanIQ, Anaplan offers highly accurate and scalable forecasting that automates the preparation of data, model configuration, and tuning. The solution can be run in “lights out” mode without the need for constant tinkering. And by embedding the technology in the enterprise demand planning application, Anaplan PlanIQ optimal forecasts are available at the fingertips of planners for every planning combination, i.e., product and location, in a company's portfolio.

## The Anaplan Way vs. the Old Way

Traditionally, deploying and using AI and ML technology for forecasting has required data science expertise and considerable effort. Data needed to be manually prepared and cleansed. Forecasting models needed to be configured by experts and then periodically tuned to adjust for changes in market conditions.



# What an AI-Powered Demand Planning Project Looks Like

Forecasting with Anaplan's Demand Planning is straightforward and can take as little as a few days to get up and running. The process consists of three key steps outlined below:



## Leverage Your Data

- Historical data
- Item metadata
- Causal factors



## Train and Generate ML Forecasts

- Automatically fill data gaps
- Add built-in data sets
- Train forecast models automatically, with Anaplan Auto ML or manually



## Create Your Forecast

- Use a simple three-step process via an intuitive wizard-like user interface
- Run or schedule the forecast
- Review results

**Forecasts are available at the fingertips of planners for every planning combination**  
(i.e. product and location, in a company's portfolio)



#### **Anaplan PlanIQ Forecast Configuration Steps**

Set-up can be completed in  
as little as **a few days**

With AI and ML automated and provided as a managed service, companies can easily benefit from superior forecast accuracy. And embedded into Anaplan Demand Planning, the power of AI and ML can be made available to non-expert business users and scaled across organizations for day-to-day use.

**Get started with Anaplan Demand Planning and schedule a demo today!**

## **About Anaplan**

Anaplan transforms the way you see, plan, and lead your business. By dynamically connecting financial, strategic and operational plans in real-time, Anaplan gives you the power to anticipate change, address complexity, and move at the speed of the market. Anaplan's Connected Planning Platform lets you view and contextualize current performance, forecast future outcomes to fuel growth and mitigate risk, and optimize costs so you can make faster, more strategic decisions. Anaplan supports more than 2,000 industry-leading brands in over 50 countries navigate their daily planning challenges with confidence.

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