



SOLUTION BRIEF

Demand Forecasting

Today, consumers have numerous channels for purchasing items, including in-store, online pick-up in-store, drive-through, online, and phone orders. According to Gartner, the physical store has become multifaceted and, in many cases, a fulfillment hub for online ordering. Increased in-store activity has led to a significantly increased focus on improving store productivity, decreasing overall costs, and ensuring each channel is staffed appropriately.

Traditional year-over-year models and simple analysis of historical averages are no longer sufficient to accurately forecast demand and ensure retailers schedule the right people at the right place and time.

These simple methods cannot handle the scale and complexity of most modern retailers and supply chain businesses. Traditional methods also make it nearly impossible to incorporate external data, such as weather and local events, that significantly impact demand. Traditional models often rely on a “one size fits all” approach and fail to consider critical factors that can influence specific needs, for example, whether a location is on the street or in a mall, the impact of weather, or specific local events.

The most advanced retail demand forecasting solutions leverage sophisticated data science and AI to accurately predict demand. These AI-driven solutions can identify complex patterns over longer timeframes, integrating thousands of internal and external data points—such as local events and weather—to deliver highly granular demand forecasts.

Legion by the Numbers

Demand Forecasting

500K

Data sets in
production

25B

Data points
input

7.5B

Data points
output

125M

Machine-learning
models trained

6M Weekly forecasts generated

*“Legion’s **forecast model** considered out-of-the-box things other products didn’t, such as **local events** we didn’t even know were happening.”*

*- Executive Director of
Information Systems, Retail*

THE LEGION SOLUTION

Legion’s AI-powered Workforce Management (WFM) Platform automatically predicts demand across all customer touchpoints and locations. Legion Demand Forecasting is self-learning and automatically adjusts to dynamic business changes and it’s easy to model what-if scenarios, such as adjusting total budget hours, easily changing inputs, and enforcing operating labor models.

Intelligent Automation

Legion has designed a fully automated infrastructure that handles the end-to-end data consumption process, model (re)selection, model (re) training, and forecast generation to help even the largest organizations achieve new precision and accuracy levels.

Legion’s fully automated Demand Forecasting is based on mature data science and has been in production for over seven years. The Legion Demand Forecasting engine automatically delivers consistent, accurate forecasts weekly across all sites and channels to increase productivity and profitability across all your omnichannel operations.

Demand Forecasting learns patterns from historical data, predicts future values based on those patterns, and automatically handles your business’s scale and complexity.

More Precision Brings Better Results

Legion creates a unique model and forecast for every driver and location, delivering unparalleled precision and accuracy. During the setup phase, our data science experts integrate your specific data through direct API or FTP integrations, including historical sales from POS systems and traffic counters. Our advanced ML approach generates tailored models and forecasts for each driver, enabling you to predict items, foot traffic, sales, transactions, and more by channel and site. There’s no need to worry about model selection; Legion handles it automatically. By measuring the predictability of each driver, Legion provides a precise demand forecast, ensuring you receive accurate predictions without having to set or manage the forecast algorithm.

Key Features

- **Intelligent automation:** Get advanced forecasting technology—productized and automated. Forecasts continuously improve as new data becomes available. Updated forecasts and labor guidance are instantly generated while allowing for human intervention.
- **Precision:** Factor in your unique labor model and staffing policies.
- **Accurate:** Legion's Demand Forecasting engine automatically uses machine learning to compute highly accurate, scalable, and consistent demand forecasts at several levels—for every driver and location, delivering unprecedented accuracy.
- **Internal and External Events Pre-Integrated:** External and customer event data are automatically used to train the ML models for the greatest accuracy.

Industry Leading Accuracy

Forecasting models that lack true machine learning (ML) can often only learn a few patterns and rely on manual adjustments to accommodate other patterns.

Legion's advanced ML-based forecast engine automatically learns many time-based patterns using historical data and adjusts automatically for seasonality and holidays. Legion Demand Forecasting leverages an ensemble of supervised machine learning and several statistical and unsupervised models which results in a permutation of several hundred options, and the best set of ensembles is then selected based on accuracy. The selected models are then customized for your unique data sets. Forecast results are automatically compared with actuals and autonomously learn and improve to retrain and continually improve the ML model.

A predictability score, derived through advanced statistical procedures, is provided for each driver. The score evaluates and conveys the predictability of a specific data set. For example, a predictability score of 85 would mean a data set could be predicted with 85% accuracy. This level of detail enables users to gauge the inherent predictability of data to facilitate more informed decision-making and strategic planning.

Legion Demand Forecasting continuously learns, improves, and adapts to deliver highly accurate results in changing conditions. As new data is available throughout the week, labor is recomputed to compare an improved forecast and labor plan to what was published. By continuously reforecasting and regenerating labor guidance, you can adapt and react quickly to business changes. And, with Legion, forecast editing can be done at a manager level or centrally to combine human judgment with Legion's AI.

Pre-Integrated External Events

Legion WFM synthesizes historical and current information about how customers buy. Weather and local events are automatically syndicated and pre-integrated, so you don't have to run complex calculations, pay high data fees, or use manual processes. External and customer event data are automatically used to train the ML models for the greatest accuracy. You can also integrate your unique staffing policies and local laws.

The Demand Forecasting proprietary algorithm uses weather forecast data to improve the near-future ML-generated forecasts. These improvements can reduce or increase forecast demand and deliver new levels of accuracy by accounting for unique pattern changes due to weather, minimizing costly over or understaffing.

Demand forecasting ensures you understand the impact of demand influencers by driver, channel, and site so you know exactly what type of labor you need every hour of every week.

The Benefits to Your Bottom Line

Harnessing the demand forecasting features of Legion WFM results in significant, quantified benefits for Legion customers.



Increased accuracy: [Forrester Research](#) found that Legion delivers a significant improvement in forecast accuracy, and each 1% improvement in demand forecast accuracy can lead to a 5% reduction in labor costs.



Increased revenue: [McKinsey research](#) shows that a 10-20% improvement in labor forecast accuracy could translate into a 5% reduction in inventory costs and yield a 2-3% increase in revenue.



Improve employee and customer experience: Legion WFM auto-generated, highly accurate demand forecasts result in optimal labor plans, budgets, and schedules across all touchpoints that meet employee skills, preferences, and availability while freeing managers to spend more time with employees and customers.



Faster decision-making: Retail demand forecasting provides real-time insights into demand trends, enabling businesses to make faster decisions and instantly create optimized schedules.



Increase labor efficiency: By using advanced analytics and machine learning algorithms to analyze demand data, businesses can optimize their labor efficiency and avoid the financial impact of overstaffing and understaffing.



Operate with greater agility: Develop what-if scenarios for new channels, deployment strategies, and other demand drivers.



Seamlessly Integrate Internal Events

Integrating internal events like promotions into demand forecasts is crucial for retailers to enhance accuracy in predicting customer demand, directly informing labor planning and staff scheduling.

Legion integrates internal event data such as promotions, launch events, sales, and more so retailers have accurate and precise demand forecasts to ensure they have the appropriate staffing levels to handle the surge. Accurate demand forecasting enables data-driven decisions for labor planning, leading to optimized staff schedules, cost efficiency, and a more engaged workforce.

Legion WFM takes the auto-generated, highly accurate demand forecasts and automatically creates an optimal labor plan—no more mapping between labor models used by finance for forecasting and operations for scheduling. With no manual steps or “lost in translation” data issues, Legion creates an optimized labor plan for your business.

Ready to compare our forecast accuracy to your existing solution and against predictability scores? Let us prove what we can deliver for your company by taking our [Demand Forecasting Accuracy Challenge](#).

About Legion

Legion Technologies delivers the industry’s most innovative workforce management platform, enabling businesses to maximize labor efficiency and employee engagement simultaneously. The award-winning, AI-native Legion WFM platform is intelligent, automated, and employee-centric. It’s proven to deliver 13x ROI through schedule optimization, reduced attrition, increased productivity, and increased operational efficiency. Legion delivers cutting-edge technology in an easy-to-use platform and mobile app that employees love. For more information, visit <https://legion.co> and follow us on [LinkedIn](#).

