



Walgreens Leverages Zebra's AI-Powered Demand Forecasting to Thrive in Volatile Markets

Retail pharmacy reduces over-forecasting from 15% to 1% while maintaining 98% in-stock levels during demand surges

Walgreens, a leading retail pharmacy serving eight million customers daily across 8,000+ stores, collaborated with Zebra Technologies to reshape its demand forecasting. Beginning in 2017, Walgreens reimagined demand planning by implementing the Zebra Workcloud Forecasting & Analysis solution, reshaping its ability to predict consumer demand, improve product availability and boost operational efficiency across its entire supply chain.

Forecasting Demand Across 180 Million Distribution Points

With 124+ years of service to communities, Walgreens manages approximately 20,000 SKUs per location—resulting in 180 million points of distribution that must be properly stocked to satisfy customer demand that can double during peak seasons.

Traditional demand planning methods failed to account for the increasing influence of social media, local events, weather, cold and flu season and rapidly shifting consumer preferences disrupting predictable buying patterns. While previous approaches might consider only three variables per SKU, today's complex environment requires analyzing 50+ variables—an impossible task for human analysts to manually forecast across millions of individual store-SKU combinations.

"The old ways of demand planning couldn't see that the customer was changing. It would be naive to think that basic statistical analysis of what happened last time would work when we're talking to different consumers in different ways," said Andy Kettlewell, Group Vice President of Inventory and Analytics at Walgreens.

The company's transfiguration began by changing customer engagement, moving from printed weekly advertisements to leveraging its 100-million-member loyalty program through the Walgreens mobile app. This created new opportunities but required more sophisticated forecasting tools.

The limitations of traditional forecasting methods became increasingly apparent as consumer behavior grew more complex and unpredictable. As Kettlewell explained, "Traditional demand planning is very arrogant. We think about the present retailing price, product promotion and placement. We analyze the last 52 weeks of sales and conclude, 'That's going to be my forecast.' But that's not enough."



SUMMARY



Customer
Walgreens

Industry
Retail Pharmacy

Challenge
Accurately forecast consumer demand in a volatile marketplace across 20,000+ SKUs per store and 180 million points of distribution while adapting to rapidly changing consumer behavior patterns

Benefits/Outcomes

- Reduced forecast error by 15 percentage points
- Decreased over-forecasting from 15% to just 1%
- Achieved 50% reduction in human intervention for forecasting
- Maintained 98% in-stock levels during demand surges
- Enhanced customer satisfaction through improved product availability

Solution
Zebra Workcloud Forecasting & Analysis

“It would be arrogant to think that you are the only voice influencing customer demand,” he added. “We need to understand all those other influences in our customers’ lives—whether it’s a viral TikTok, micro-economic factors or different messages they’re receiving—so we can predict behavior and position inventory accordingly.”

Walgreens needed a solution that would adapt to volatile market conditions, incorporate external data beyond traditional metrics and reduce manual forecasting. The ideal system would ensure product availability, support the company’s health and wellness commitment and reach customers personally with localized data.

AI-Powered Analytics Incorporating External Data Streams

To shift its demand planning approach, Walgreens implemented Zebra Workcloud Forecasting & Analysis solution. The AI-powered system integrates multiple data streams to create accurate, unified demand signals across the company’s store network by:

Incorporating external data influences: The platform gathers numerous external data streams—i.e. weather patterns affecting medication demand, social media influencer endorsements, local economic events and nearby venue events—analyzing them alongside traditional retail data to identify correlations and predict demand patterns.

Creating a unified demand signal: The system combines price elasticities, promotional lifts, trends, seasonality and event data to deliver forecasts at the necessary product, geography and time level for all organizational processes.

Deploying adaptive inventory management: Inventory is distributed based on localized predictions, ensuring the right products are in the right stores at the right time during unexpected demand surges.

Enabling seamless integration: The Zebra solution integrates with Walgreens’ existing technology stack, replacing traditional forecasting inputs without disrupting core operational systems.

Supporting end-to-end inventory optimization: Zebra provides AI-driven inventory control with product lifecycle optimization for more effective customer demand response.

Enhancing supplier coordination: The Zebra solution bridges the gap between suppliers and Walgreens by facilitating real-time collaboration and data sharing, allowing suppliers to accurately align their inventory levels with actual consumer demand, thereby minimizing fill rate issues and excess inventory.

Walgreens’ new approach represents a fundamental shift in



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Andy Kettlewell
Group Vice President of Inventory and Analytics, Walgreens



thinking about inventory management. “We’re not in love with the item; we’re in love with the customer and satisfying that demand. We’re less worried about SKU-level forecast accuracy and more about fulfilling consumer demand. We have a relentless passion to ensure we always have a solution on the shelf when and where it’s needed,” Kettlewell shared.

Boosting Accuracy, Productivity and Customer Satisfaction

Walgreens’ deployment of Zebra Workcloud Forecasting & Analysis solution delivered impressive results:

Dramatic forecast improvement: After implementing Zebra, Walgreens realized a significant improvement in its forecasts, reducing forecast error by 15 percentage points and decreasing over-forecasting from 15% to just 1%.

Enhanced workforce efficiency: The company achieved a 50% reduction in human touches needed for forecast generation, allowing its planning team to focus on strategic decisions rather than routine forecasting tasks.

Real-world responsiveness: During local wildfires in Las Vegas, Walgreens successfully maintained a 98% in-stock level despite a 20% surge in demand for eye drops and face masks. In another instance, utilizing Zebra’s technology, the company uncovered unexpected correlations, such as a rise in allergy relief sales during the Florida Strawberry Festival.

Strategic gains: The company improved customer satisfaction with higher in-stock levels and created a more efficient operating model by redirecting resources from traditional inventory management to data science capabilities.

Expanding AI Throughout the Enterprise

Walgreens continues expanding AI and machine learning across operations, viewing demand forecasting as a foundation for broader digital transformation. The company considers external data integration essential for success in modern retail environments.

“It’s really about thinking across your entire enterprise and its workflows. Understanding this end-to-end flow is what I see as one of our crucial imperatives over the next three to five years,” Kettlewell said.

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