Demand Forecast & Replenishment

Replenishment processes for retailers pose two major challenges: the unpredictability of demand and the complexity of the supply chain. A truly demand-driven replenishment requires precise description of future demand. Yet the inherent complexity of the supply chain limits its performance through meticulous rules and constraints. Therefore, traditional approaches to replenishment are falling short, in that:

1. the prediction quality is often dependent on manual tuning of models and fails to deliver in dynamic situations such as sales of promotional or perishable goods,

2. the overall performance is incidental rather than planned, and to improve the KPIs, often unrelated technical parameters (e.g. safety stocks) are continuously manipulated,

3. traditional replenishment achieves roughly 75 percent automation, leading to manual oversight and adjustments.

Blue Yonder Demand Forecast & Replenishment solution outperforms the static approach of traditional ERP systems, and allows retailers to achieve highest possible degree of automation in replenishment. It starts with accurate probabilistic forecasting model that quickly senses vital demand signals, seasonal trends, incorporating hundreds of influencing factors.

Based on these forecasts, our solution evaluates various replenishment scenarios for each product and location, daily. It calculates optimal order quantities based on critical KPIs such as write-off and out-of-stock rate, and delivers recommended order quantities that can be easily integrated into the existing ERP systems. The Demand Forecast & Replenishment algorithms do not require manual tuning or adjustments.

Key Benefits

- Quick to delivering value through optimized processes
- Precise KPI-driven replenishment
- Reduction in cost to serve through automation
- Customer-aligned supply chain
- Innovative and proven approach to self-learning efficient supply chains

Capabilities

Demand Forecasting

Good demand forecasts are a prerequisite for accurate order planning and execution. The built-in demand forecasting algorithms take both the internal and external data into account. Moreover, special events and promotions are taken care of, eliminating the need for manually selecting the right model. The resulting increase in automation is one of the important drivers for reducing the cost of the replenishment process.

Blue Yonder's Demand Forecast & Replenishment calculates probabilistic forecasts. It helps demand planners to not only understand the patterns hidden in the long tails of the distribution, but allows them to quantify the demand for each product and store individually. In challenging scenarios such as new products or promotions, our probabilistic approach to forecasting mitigates the risks of over- and understocking, by predicting very low and very high sales.

Replenishment

With the help of machine learning and KPI-based replenishment, retailers can translate their out-of-stock or write-off strategy down to each product and location. Moreover, our simulations provide valuable feedback on achievable KPIs and necessary trade-offs. Together, demand planners can achieve commercial goals without relying on tuning technical parameters by trial and error.

Our solution has the potential to simultaneously optimize competing KPIs. It also considers constraints such as product bundles, mixed cases, available shelf space and minimum display stock. As the outcome, recommended order quantities are generated for the entire assortment, allowing retailers to achieve ambitious goals aided with automation and optimization.

Inventory Optimization

Blue Yonder Demand Forecast & Replenishment solution enriches retailers' inventory policies with consistent and efficient stock management policies. The replenishment decisions delivered by our solution are tightly coupled with their category and financial goals, with strong focus on reducing the cost to serve.

Using demand forecasts and linking them with business goals, stock levels and delivery schedules, our solution calculates optimal orders for each product and location. Our API integrates these orders directly into the ERP systems. Additionally, fallback orders are provided to support operational safety margins (e.g. in case of a temporary data loss, or ERP downtime). As a result, our best balance ordering algorithm allows the replenishment to run with the highest degree of automation possible.

With precise ordering and replenishment, our solution reduces manual intervention and operational costs, thereby improving turnaround time of the process. The retailers can consistently meet their economic and supply chain goals, as well as deliver a better customer experience.

API

Our Supply & Demand REST API is primarily responsible for transferring sales and product master data requires no manual labor. The data is transferred via a simple and secure connection. All uploads are automatically checked for syntax and semantics prior to unloading in the database. The data can originate from any ERP or SCP system, database or technology platform, or even customized solutions. The built-in encryption renders the data inaccessible to any hostile application.

Audit

Our solution provides historic data deliveries in the audit log, including the description of error state and message (if applicable). The audit logs are clear, consistent and persisted, so that errors can be rapidly identified and fixed. The offending XML files can be downloaded for investigation and troubleshooting.

Implementation and Integration

The solution is implemented with the help of our experienced onboarding team. The scope of implementation typically includes:

• Solution fit assessment

• Data conformance and integration

• Implementation and tests

• Model tuning and optimization

• Rollout

Would you like to optimize your replenishment? Get in touch.

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BlueYonder
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