



Intelligent Rebalancer

Rapid order execution response for supply
and demand disruptions

Business context

Whether your business is B2B, B2C, or B2B2C, managing the order process can be tricky and wrought with challenges from a dynamic array of disruptors (customers, supply changes, demand changes, weather, labor, etc). Still, it is imperative to maintain customer satisfaction by providing consistent and accurate fulfillment for the normal and forecasted demands and be able to prioritize inventory when there is a sudden supply shortage or change in demand.

From product and labor shortages to transportation delays, dozens of unexpected events can happen between the time an order is placed and the time it's fulfilled. In the face of a disruption, operations teams are challenged to quickly pivot their inventory allocation to fulfill the most important orders and adhere to SLAs. Typically, these teams are allocating inventory based on plan and forecast data and need to make manual adjustments based on the actual situation. These manual processes and spreadsheets are not suitable to make the incredibly complex trade-offs and decisions necessary. The result? Inventory is not effectively utilized and is not allocated profitably to optimize fill rates and service outcomes according to business rules and customer priorities.

The Blue Yonder solution

Supported by AI and ML, Intelligent Rebalancer is a flexible microservice that mirrors the high degree of analytic rigor used to originally plan inventory allocation, but it is built to apply that analysis quickly, in near real time, to the re-allocation process following a disruption. Only Blue Yonder offers the unique capability to pivot using actual data and adjust order execution based on the current need and not just the planned need.

Intelligent Rebalancer reacts to sudden disruptions by re-sequencing open demand based on dynamic and configurable rules, including FIFO, customer priority and attribute-based sequencing. It ensures that the fulfillment of all pending orders is carefully considered, leading to strategic re-sequencing and re-allocation of inventory. An AI- and ML-powered optimization engine enables complex trade-offs across all orders — considering cost, service, margins, sustainability and other business objectives — and arrive at optimal decisions in microseconds. When the next disruption occurs, it repeats this cycle, continuously improving outcomes via machine learning.



Key benefits

- Faster, more strategic responses to disruptions during order execution
- Higher fill rates and customer satisfaction levels
- Maximized profit margins based on optimal decisions

Capability Details

Support for complex decision-making hierarchies

Making optimal choices about order re-allocation is tough, especially when products are scarce following a disruption. Operations teams must carefully consider individual customers, customer tiers, channels, business segments and available inventory. They have to apply order sequencing rules like FIFO and Customer Priority, as well as custom attributes defined by the business. They need to analyze product eligibility, location eligibility, order eligibility, demand eligibility and supply eligibility. The complexity of the problem exceeds human cognition and is best addressed with a cognitive, configurable, dynamic solution that complements your existing planning solutions. Intelligent Rebalancer easily performs the complex analysis and arrives at an optimal allocation and fulfillment resolution.

Easy application of advanced allocation algorithms

The science behind Intelligent Rebalancer's decision algorithms is sophisticated and complex, but it's easy for non-technical users to apply that complexity via an intuitive, user-friendly interface. The solution provides configurable rules to dynamically determine

order resequencing, and varying allocation policies and methods. No matter how complex the rules are, Intelligent Rebalancer performs the heavy lifting and arrives at the right re-allocation plan quickly, to minimize any damage to customer relationships and any mis-use of inventory. Once a resolution path is identified, process automation and digital connectivity ensure that the right action is taken immediately.

Composable solutions for rapid implementation and endless scalability

Today's complex order management and fulfillment operations rely on a range of systems and tools. Blue Yonder's microservices-based, modular approach makes it fast and easy to augment those existing technology and systems giving you freedom and flexibility to launch the capabilities you need. Intelligent Rebalancer requires less time and fewer resources to deploy, manage and maintain than a monolithic system. Blue Yonder delivers the flexibility to support customers' immediate need for order rebalancing, while also supporting infinite growth through a scalable architecture.



Key features

- Connect planning and execution strategies
- Learn and improve forecasting and execution with cognitive feedback loop
- Provides visibility across every stage of the order lifecycle
- Creates dynamic inventory visibility and availability from production to execution
- End-to-end order management orchestration, in near real time
- Profitable, strategic and accurate supply-demand matching as conditions change
- Evaluate best fulfillment options in dynamic scenarios
- Automate order re-allocation and supply rebalancing

Benefits

5%

Revenue lift from improved fill rates

3%

Added revenue from increased customer satisfaction

20%

Reduction of fulfillment & freight costs

40%

Associate productivity improvement

Order Sequencing	Allocation Policies	Allocation Methods
<p>First-In-First-Out (FIFO)</p> <p>Inventory allocated to orders based on order receiving sequence, full requested quantity</p> <p>Priority-Based</p> <p>Inventory allocated to orders based on customer priority</p> <p>Attribute-Based</p> <p>Further refine prioritization based on dynamic attributes</p>	<p>Fair-Share and Weighted Fair-Share</p> <p>All orders for the item-node combination are allocated at a pre-determined weighted % or fair-share %</p> <p>Substitutions</p> <p>Automatically change product with the substituted product on the order</p>	<p>Near Real-Time, Periodic and Scheduled</p> <p>Run allocations at different intervals based on the type of disruption, and rebalance across the impacted line or entire order.</p> <p>Global Optimization</p> <p>Optimize allocations across multiple orders, all of them together</p>