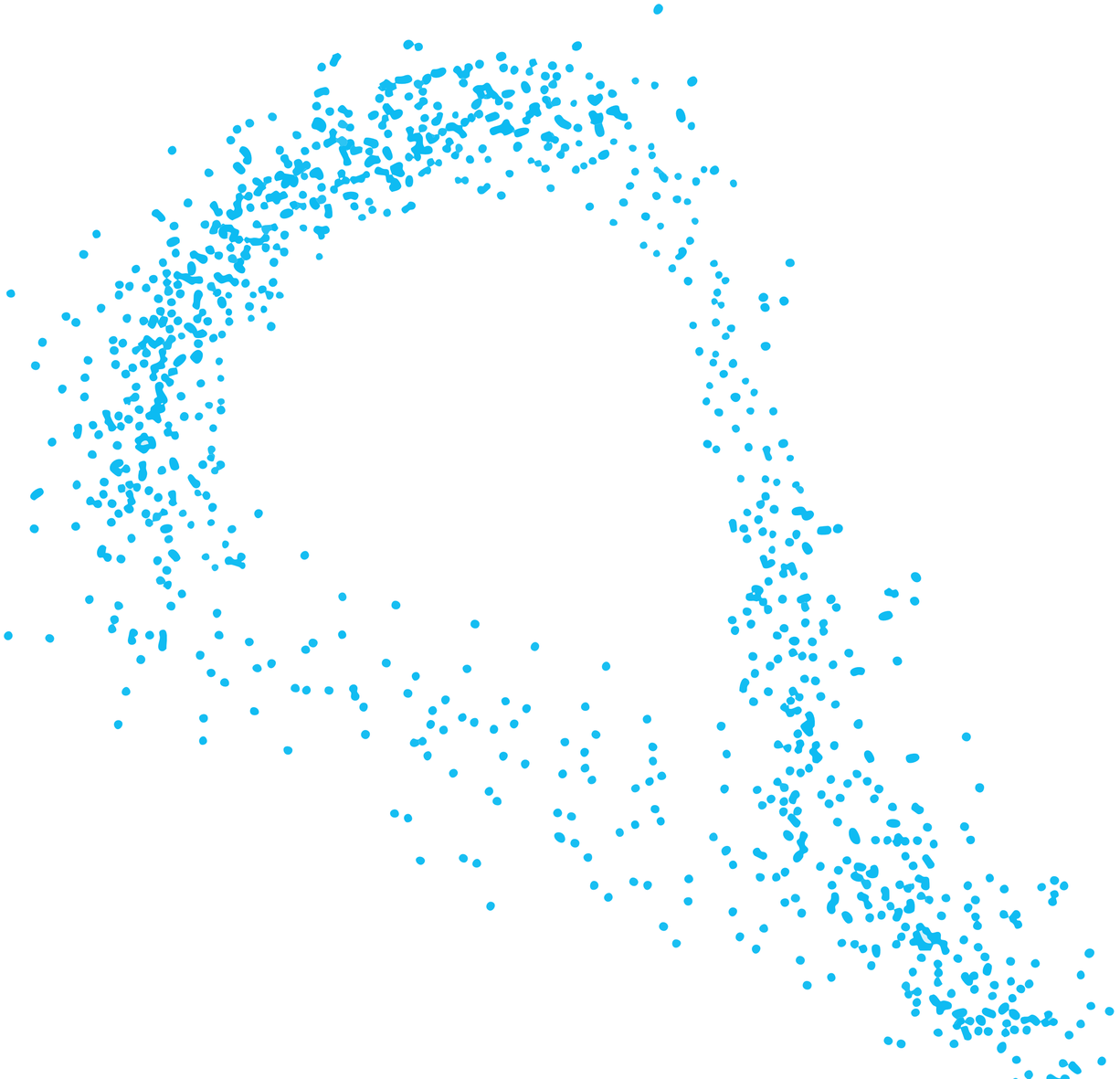
eBook

Transform Your Warehouse Into a Competitive Edge

Order volatility. Labor shortages.
Rising costs.

BlueYonder



Blue Yonder's Warehouse Execution System enables you to seamlessly master these and other challenges via digital transformation.

Warehouses represent a huge cost center. It's time to maximize your return on investment.

Whether you call them warehouses or DCs, distribution hubs are an enormous cost center for the average manufacturer, retailer, wholesaler or thirdparty logistics (3PL) provider. Every year, companies worldwide spend at least $325 billion on warehousing — with 85% of that cost devoted to operating expenses such as labor, space and equipment. Inflation and rising wages are pushing those expenses higher and higher.

To maximize their investments in warehousing, companies need to ensure their facilities are operating as profitably and productively as possible. Labor, equipment and other resources need to be matched accurately with order volumes. Tasks must be accomplished quickly, correctly and efficiently. Orders must be picked, packed and shipped in the most economical way — while still supporting high service levels.

Yet today's business environment is making that kind of precise orchestration nearly impossible to achieve. Consider these three trends that have added an incredible level of complexity:

The Rise of E-Commerce

The rise of e-commerce has not only created ambitious new fulfillment scenarios that companies need to comply with, such as next-day or same-day delivery, but it's also impacted virtually every warehouse process. While distribution hubs used to manage a smaller volume of large orders, and ship in bulk, today they're faced with a high volume of smaller orders that need to be shipped individually. And, as demand gets dispersed across more channels, it's extremely unpredictable. Warehouses need to stock more and more SKUs to meet omni-channel demand.

Global Talent Shortages

Global talent shortages have driven wages higher and significantly increased employee turnover, creating a new source of warehouse instability. **Less than a third of companies believe they can manage their warehouse workloads with their current staff.** Companies struggle to have the right human resources available to meet unpredictable demand, and any mistakes are costly. Understaffing means service levels are at risk, while overstaffing means wasted dollars and eroded margins.

Companies are exploring automation

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Before we discuss how companies can overcome these challenges and maximize their return on their warehouse investments, it's worth taking a look at how they got here in the first place.

Modern warehouse optimization is a complex problem. Any solution must be equally sophisticated.

The main problem companies face with regard to warehouse optimization is that they're applying outdated technology tools and time-consuming manual processes to manage a completely transformed environment. They're creating static plans in an extremely dynamic landscape. Just as the fundamental nature of warehousing has changed dramatically, so must the processes and solutions used to optimize end-to-end warehouse operations.

Matching warehouse resources to fluctuating demand, balancing work across humans and machines, minimizing costs while supporting outstanding service, replanning in real time as conditions inevitably change — all of these are extremely complicated problems thatexceed human cognition and manual analysis.

Most organizations are using a warehouse management system, a form of automation, and a scheduling or labor management solution. However, many of these tools weren't built for today's tough resource management challenges — and they're probably not adequately integrated with one another.

To truly maximize their return on their enormous warehousing investments, companies need a new digital solution that's purposebuilt to autonomously gather real-time signals from across the warehouse; apply artificial intelligence (AI) and machine learning (ML) to create plans and solve problems; and streamline and optimize every process in the distribution center.

11%
Rising Hourly Workforce Labor Costs YOY

6.6%
Inflation

500%
Increase in BOPIS since 2020

48%
Cannot Find and Retain Talented Workers

63%
Retail Accurate Inventory is Lacking

28%
Rents are Increasing in Rents and Premium

70%
Reported Poor Digital Transformation Experience

6%
Lack of Fully Automated Warehouses

What is Warehouse Execution System (WES)?

Tasking Automation

- Work Priority
- Task Chaining

Resource Automation

- Onboarding
- Orchestration

Introducing Blue Yonder's Warehouse Execution System.

Blue Yonder's Warehouse Execution System (WES) is an intelligent, cloud-native solution that leverages AI, ML, data science and analytics to unlock opportunities for greater speed, accuracy and profitability across the warehouse. The solution brings together Blue Yonder's Warehouse Tasking, Robotics Hub and other advanced solutions, along with in-depth analytics and reporting capabilities.

Fast and easy to launch via a cloud delivery model, WES builds on the power of Blue Yonder's industry-leading Warehouse Management System by gathering real-time insights and providing prescriptive recommendations that keep the warehouse running smoothly and profitably, no matter how dramatically operating conditions evolve minute by minute.

WES makes every warehouse more omni-channel aware as it reacts in real time to changes in order volumes, task priorities and resource availability. WES defines and re-defines task chains on an ongoing basis, to ensure that resources are always focused on the most important job at hand.

In today's volatile, fast-changing world, traditional task-management solutions aren't enough.Companies need to consider multiple complex factors, including customer priority and overall cost-to-serve. Enabled by AI and ML, WES balances service goals with cost targets, considering factors like resource location, product location, and travel distances and times as it assigns work.

It coordinates tasks across humans, robots and static automation to deliver the right work to the right resource at the right time — resulting in decreased steps, capacity smoothing and operational excellence.

This smart, hard-working Blue Yonder solution not only makes it easy to onboard new robots and integrate them with other systems, but it also automatically divides work among humans and machines in a strategic, profitable manner. WES truly optimizes cost-to-serve by maximizing all the resources within the four walls of the warehouse.

Blue Yonder's Warehouse Execution System enables five core capabilities that are imperative in the modern DC.

Today's complex warehouse environment demands a dynamic, always-on optimization solution that's built to consistently match the right resource with the right work. WES is that solution.

For the first time, companies can leverage a large volume of real-time data to accelerate and streamline everyday work, on a dynamic basis, reflecting the fast-moving nature of today's omni-channel distribution landscape. WES from Blue Yonder helps companies establish five critical capabilities they need in order to achieve true warehouse optimization — all in a single, cloud-based solution:

Warehouse Optimization via Five Core Competencies

Autonomous resource orchestration

Priority and proximity awareness

Streamlined automation onboarding and daily management

Agile task assignments and flexible allocation

Accurate forward-looking resource forecasting

Autonomous resource orchestration.

WES automatically and invisibly orchestrates the warehouse as conditions change throughout the day. To maximize service and efficiency, tasks are fluidly assigned to either robots or human resources based on their individual skills and availability, then interleaved based on proximity, priority and permissions. As conditions change — for example, a high-priority customer order arrives, or a robot experiences downtime — WES intelligently re-assigns tasks and pulls additional resources in. Work stays on track, surprises are minimized, and costs are controlled via real-time visibility, coupled with advanced intelligence that exceeds human cognition. WES keeps track of the capabilities, location and status of every resource in the warehouse in real time — which would be impossible for a human manager. WES also applies Blue Yonder's industry-leading AI and ML for predictive task assignment, in which it looks ahead to assign future activity to the best available resource at that time.

Priority and proximity awareness.

Warehouses represent giant physical spaces featuring thousands of SKUs, hundreds of human and machine assets, and complex floorplans. All warehouse activities need to be streamlined and optimized based on resources navigating that physical space most efficiently. But all warehouse activities must also be guided by pre-defined business rules, including customer prioritization and cost constraints.

Via dynamic task assignment, WES establishes a balance between order priority versus the proximity of the next task. It ensures that high-priority demands are met, even during high-volume days, and proximity efficiencies are exploited during typical operations. Intelligent pairing capabilities allow WES to identify order fulfillment activities that logically group together based on geographic locations, priorities and travel times.

Streamlined automation onboarding and daily management.

Today companies are challenged to identify the right automation tools, integrate them with existing systems, and quickly get them up and running to add value. Based on Blue Yonder's technology leadership and decades of hands-on warehouse experience, WES is designed to bring robotics and automation onboard rapidly and seamlessly. Standardized and public application programing interfaces (APIs) provide flexibility and support the onboarding of one or multiple robotic vendors through a completely vendor-agnostic solution.

Blue Yonder WES is designed to provide a "one-stop shop" that helps companies easily solve the complex problem of combining human and machine assets in their warehouse operations. WES helps warehouse managers assess the real contributions of robots via value metrics, and its advanced troubleshooting features expedite issue resolution across multiple robotics vendors.

Agile task assignments and flexible allocation.

Static plans and task lists have no place in today's modern warehouse — and companies who rely on them are at a cost and service disadvantage. WES allocates tasks agilely, based on pre-defined parameters, while it also keeps track of labor shift lengths, individual employee skillsets and their current physical location. It creates the most efficient tours that include multiple picks to maximize efficiency, accuracy and job satisfaction. As new orders come in, WES flexibly allocates the associated tasks. Simply put, WES is designed to match the traditional job of task assignment to the flexible and ever-changing nature of the modern order fulfillment process.

Accurate resource forecasting.

In today's tight labor market, it's important to schedule resources accurately in advance to drive both greater employee satisfaction and higher utilization of limited assets. While WES is a dynamic, near real-time orchestration solution, it also leverages AI and ML to look ahead and anticipate future order volumes, resource availability, desired performance and throughput levels, and potential bottlenecks. It helps warehouse managers prepare for what's next based on real-time signals and short-term trends, instead of relying on historical order volumes that are outdated and lack relevance.

Typical Benefits of WES

Reduce administrative costs by up to 80%

Increase units per hour (UPH) by up to 12%

Reduce new robotics onboarding time by up to 50%

Improve on-time SLA achievement by up to 10%

Increase throughput by up to 15%

What Benefits Can You Expect?

Why should companies partner with Blue Yonder to digitally transform their warehouses? Because Blue Yonder's Warehouse Execution System is designed to apply the most advanced technology, and associated best practices, to create an environment for success. WES enables companies to:

- **Maximize** the utilization of assets like human labor, robots and equipment via more accurate planning and dynamic replanning
- **Reduce** overhead and manual task intervention by leveraging AI and ML to orchestrate warehouse processes autonomously
- **Increase** efficiency and throughput by using advanced algorithms to plan everyday work based on achieving the best time, cost and service outcomes
- **Minimize** administrative costs by relying on digital solutions and optimization engines to manage work in the warehouse, with limited human intervention
- **Maximize** the performance and financial returns of robotics and automation, WMS, ERP and other technology systems by seamlessly integrating all warehouse solutions
- **Improve** real-time visibility into changing conditions for more accurate short-term and longer-term planning
- **Increase** on-time deliveries and achievement of service-level agreements (SLAs)

Blue Yonder is committed to three principles as it helps its warehousing customers maximize their return on investment:

- **Integration and interoperability**
  In today's omni-channel world, Blue Yonder's customers are challenged to predict orders, place inventory and labor in ideal locations, and fulfill orders at the speed of demand. This requires connectivity and collaboration across multiple functions and multiple systems. Blue Yonder brings its warehouse, transportation, store execution and order management solutions together in one portfolio to offer end-to-end capabilities and seamlessly deliver results.

- **Sustainability**
  In addition to optimizing cost and service outcomes, Blue Yonder solutions enable customers to make their operations and practices more sustainable via realtime visibility and tracking. Customers can leverage performance metrics to understand their sustainability impacts and make improvements as needed to reduce waste, emissions and other adverse effects.

- **Unified resource management**
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Blue Yonder has committed to investing over $1 billion in product innovations over the next three years, as well as onboarding more than 1,000 supply chain technology and cloud experts.

Why Blue Yonder? Technology innovation and leadership, combined with decades of warehouse experience.

Why should companies partner with Blue Yonder on warehouse optimization? It's simple: No one knows advanced warehouse technology better than Blue Yonder.

Blue Yonder has delivered results in thousands of customer warehouses that span the globe — as well as spanning the manufacturing, retail, wholesale distribution, and third-party logistics industries.

Blue Yonder has been named a Leader in Gartner's Magic Quadrant for Warehouse Management for 12 years in a row — every year since this report has been published.

Whether customers are using Blue Yonder's industry-leading Warehouse Management solution or its Warehouse Execution System — or both — Blue Yonder is committed to applying the most advanced AI, ML, data science and analytics to deliver practical value. Blue Yonder understands the modern warehouse and the real-world challenges customers face today.

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Blue Yonder'st Category Management solution can be integrated in a phased approach to unlock value at the pace suited to your company. Solutions can be deployed in a standalone manner to unlock value fast.

Blue Yonder's cloud-native solutions are designed to be launched quickly and cost-effectively, for rapid deployment and a fast return on investment. A SaaS delivery model also means that customers can capitalize on Blue Yonder's $1 billion investment in R&D to continuously access the newest features and functionality.

Proven results in warehouse management and execution.

Blue Yonder helped a **global third-party logistics company** — one of the world's logistics leaders, operating in over 200 countries and territories — with optimized warehouse tasking under the Warehouse Execution System umbrella. The company delivers more than 1 billion parcels per year, many of which represent emergency shipments. Blue Yonder helped this logistics leader reduce manual tasks by 40%, while also decreasing emergency shipments by 24%. Overall productivity increased by 13% and ETA accuracy improved by 10%.

Henkel is a 20 billion € multinational company and a leader in both the consumer goods and industrial sectors. The company's hundreds of distribution facilities around the world were relying on time-consuming, error-prone manual processes and a variety of outdated technology solutions. Blue Yonder helped Henkel adopt best practices, advanced digital capabilities and process standardization across its worldwide network. Blue Yonder's warehouse management and warehouse labor management solutions have driven improvements in speed, accuracy, efficiency, service and cost control. With improved visibility, the company can prepare some shipments up to 48 hours in advance, while also pivoting its warehouse operations flexibly as supply and demand conditions change.

Nebraska Furniture Mart is North America's single largest home furnishings retailer, with millions of square feet of warehouse space attached to its retail stores. Blue Yonder helped the retailer increase labor productivity in one warehouse by 50% just seven months after implementation. Blue Yonder helps the company combat challenges such as rising wages, increasing employee turnover and more stringent scheduling requirements for workers. The company can maximize both margins and customer service in an environment of growing competition, increasing price pressures from consumers and rising product costs from suppliers.

Clipper Logistics is one of the UK's leading independent logistics companies, with turnover of circa £700 million. At 54 sites, Clipper employs over 10,000 core people and operates circa 16 million square feet of logistics space. For over 20 years, the company has relied on Blue Yonder's warehouse management capabilities to optimize the warehousing and management of 500 million products per year for leading retailers. This solution helps Clipper deliver the extreme level of speed, efficiency, accuracy and responsiveness that's required as demand volatility increases and customer expectations grow. With Blue Yonder software, Clipper can establish new warehousing services for customers in just four days.

Proven results in warehouse management and execution.

SuperFrio is South America's leader in refrigerated logistics, with more than 1.8 million cubic meters of refrigerated space. The company's warehouse operations are complex, with 10,000 stored SKUs, 300,000 pallet positions and 15,000 vehicles dispatched monthly across 22 distribution centers. By providing robust control and visibility of all these activities, Blue Yonder's warehouse management solution has significantly decreased the manual efforts of employees. As a result, SuperFrio has reduced labor costs by 16%. The company has also increased its picking accuracy rate to 99.95%.

Americold is the largest temperature-controlled warehousing and distribution services provider in the world, with over 150 locations. Americold relies on Blue Yonder's warehouse management and warehouse labor management solutions to achieve real-time visibility into delivery, labor management and operations to satisfy escalating customer expectations, save valuable resources and reduce overhead. The company reduced labor costs by 5%-10% through more effective labor standards, monitoring and incentives. Baseline metrics and KPIs provide the measuring stick to calibrate and reward performance, resulting in up to a 5% improvement in productivity.

ThaiNamthip (TNT) is Coca-Cola's bottling partner in Thailand, manufacturing and distributing the full Coca-Cola portfolio. After using Blue Yonder's warehouse management and labor management solutions for two months, the company saw an improvement in data accuracy, more accurate delivery of goods to customers and improved customer service. The number of goods that were returned due to incorrect data was decreased to almost zero. Productivity was also increased. The utilization of equipment and forklifts was higher. These are key benefits for TNT's business.

Happy Fresh is the fastest-growing online grocery platform in Southeast Asia, serving. millions of consumers in 14 cities across Indonesia, Malaysia and Thailand. As demand increased for online grocery delivery, HappyFresh partnered with Blue Yonder to digitally transform its warehouse operations to maintain its high level of real-time responsiveness, including customized order handling and delivery in as little as one hour. The company optimized workflows to eliminate wasted time and unproductive steps. It also reduced travel time by allowing picking operators to start their next task right where their previous task ended. These improvements add up to a higher level of service, at a lower cost. In fact, HappyFresh has achieved a 25% reduction in its delivery time via optimized picking.