



# Explore the Future of Automotive

Discover how Blue Yonder solutions help automotive leaders transform uncertainty into a competitive edge

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The global automotive industry is unmatched in its complexity. The average car today has 30,000 parts including an increasing number of digital components — sourced from suppliers around the world. Across the industry's vast network of automakers, dealers, original equipment manufacturers (OEMs), multiple tiers of suppliers, third-party logistics providers, and electronics and software companies, any disruption, in any node, can send a bullwhip effect throughout the entire supply chain.

The events of 2020 and 2021 starkly revealed the fragility of the complex automotive supply chain. Faced with parts and material availability issues, extended lead times, rising energy and transportation costs, an unprecedented shortage of labor, port closures, weather disruptions and other events, the world's automakers were forced to shut down or slow their production, even though consumer demand was high.

In an industry traditionally characterized by velocity and precision, these events have alerted both automakers and their suppliers that they need to invest in a digital transformation of their supply chains. Only by connecting their end-to-end networks on a common technology platform, sensing disruptions in real time via internet of things (IoT) based artificial intelligence (AI), and orchestrating a synchronized, strategic response can automotive companies hope to succeed in today's extremely volatile business landscape.

With a proven array of industry-leading solutions, Blue Yonder can help. Auto companies that leverage Blue Yonder solutions to gain a real-time view of both internal and external conditions, predict the future via probabilistic planning, and autonomously correct the course via machine learning (ML) can achieve new levels of precision and responsiveness. By partnering with Blue Yonder to digitally transform their end-to-end supply chains, auto companies can turn uncertainty into a marketplace advantage — as they proactively manage inevitable challenges faster, more strategically and more profitably than their competitors.

## In this eBook, we'll discuss eight use cases

that showcase how Blue Yonder's solutions help discrete manufacturing companies master today's extreme supply chain volatility and optimize their results:

1. Network Design & Optimization
2. Integrated Business Planning
3. Integrated Demand & Supply Planning
4. Supplier Collaboration
5. Omni-Channel Fulfillment
6. Warehouse and Labor Management
7. Transportation Management
8. Real-Time Visibility & Collaboration





# An Industry in Transition

In addition to the enormous challenges of supply chain volatility, automotive companies face another significant hurdle: Their industry is in the midst of being completely redefined, with significant implications for the supply chain.

First, increasing awareness of climate change is placing pressure on automakers to not only introduce product designs with a reduced environmental impact, but also to manage their supply chains in more sustainable ways. Advanced technology can help by increasing visibility and transparency; improving the efficiency of production, warehousing and other operations; and optimizing transportation and logistics.

Second, as cars become more digital in nature, automotive manufacturers are increasingly becoming software companies. They need to master traditional production challenges, but their success also increasingly depends on understanding and meeting consumers' needs for wireless connectivity, autonomy, electrification, and other functionality.

The problem? Software companies operate much differently than traditional manufacturers. Automotive companies must make this shift by increasing their agility and responsiveness, so they can continuously deliver state-of-the-art

features and functionality that represent a competitive differentiator. They need to take a nimble stance that allows them to pivot instantly as automotive technology and consumer needs continue to evolve. This represents a significant change from their historic approach.

Fortunately, Blue Yonder offers purpose-built solutions that address both these urgent challenges, by increasing visibility, connectivity, intelligence and agility across the end-to-end value chain. As environmental regulations, consumer needs and automotive technologies continue to evolve, Blue Yonder solutions help automakers identify and capitalize on new opportunities, while also making data-driven decisions that minimize risk exposure and maximize profitability.



# Blue Yonder Has Delivered Value for Automotive Customers Across the Globe



# Future-Proofing the Industrial End-to-End Supply Chain

While the world's automotive companies face a tough road ahead, Blue Yonder helps them leverage the power of their supply chains to master volatility and meet key business objectives — no matter what the future brings. Blue Yonder offers a scalable methodology that measures the supply chain's real strategic impact, as demonstrated by its ability to contribute to top-level organizational goals over the longer term.

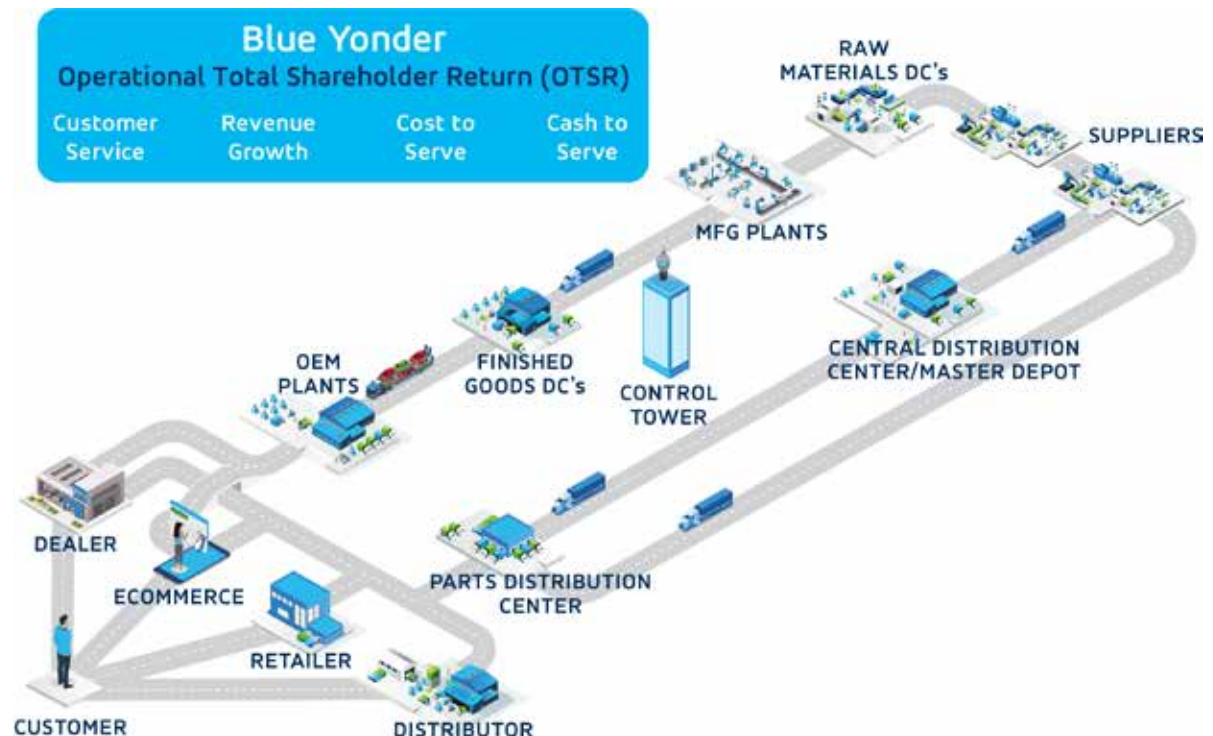
By connecting business strategy, financial strategy, supply chain strategy and operational strategy under a common business plan, Blue Yonder supports a process of value creation that is repeatable, adaptable, and sustainable.

How does it work? Advanced solutions from Blue Yonder, enabled by AI and ML, help automakers gain a holistic view of the supply chain by breaking down data siloes and streamlining the process of generating and sharing insights. This enables fact-based decision making, as well as everyday operational tactics that are directly tied to strategic, organization-level KPIs including customer service levels, sustainability targets, and OSTR (Operational Total Shareholder Return) metrics like revenue, cash to serve and cost to serve.

With support from Blue Yonder, auto companies can master their current and forward-looking challenges by focusing on eight strategic actions:

- Designing an end-to-end network that maximizes transparency and responsiveness
- Driving a synchronized response by closely integrating their business planning processes
- Integrating demand and supply planning to minimize shortages and excess inventories
- Collaborating more closely with their network of global suppliers

- Ensuring accurate, cost-effective fulfillment across all channels
- Optimizing the warehouse and labor for speed, efficiency and responsiveness
- Maximizing the transportation network's ability to meet goals for cost, service and sustainability
- Achieving real-time visibility to deliver an immediate, orchestrated response to disruptions



# Network Design & Optimization

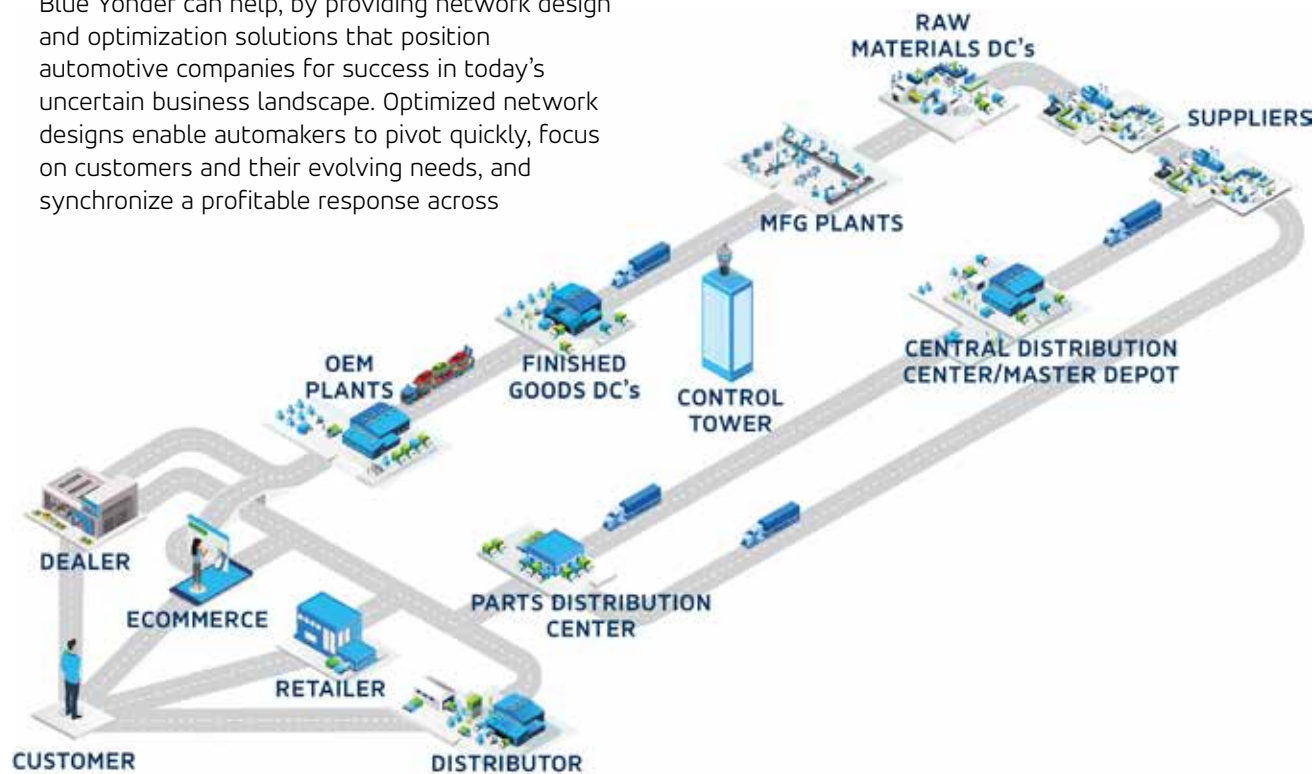
Recent events have demonstrated the shortcomings and vulnerabilities of many automotive supply chain networks. Component shortages, long lead times, transportation roadblocks and other disruptions left the world's automakers scrambling to respond.

Burdened with outdated networks that only focused on cost reduction, many auto companies lacked the end-to-end, real-time visibility, agility and resilience that would allow them to create a strategic, orchestrated response to these events. An absence of digital connectivity and collaborative problem-solving strategies across the network only exacerbated the problem.

Blue Yonder can help, by providing network design and optimization solutions that position automotive companies for success in today's uncertain business landscape. Optimized network designs enable automakers to pivot quickly, focus on customers and their evolving needs, and synchronize a profitable response across

increasingly complex networks of multi-tiered suppliers. With Blue Yonder's help, automotive companies can increase visibility and collaboration, prevent supply gaps and disconnects, and improve overall velocity.

Supply and demand conditions are a moving target, always characterized by change. But, by digitizing their operations via Blue Yonder solutions, automakers and their suppliers can simulate scenarios and act quickly to configure, and reconfigure, their networks for extreme speed and responsiveness.



## Key Benefits

- **Optimize end-to-end decisions** by quickly evaluating production cycles, product handling, process and transportation lead times, and safety stock
- **Improve sustainability** by reducing the carbon footprint and travel miles, while also driving cost reductions
- **Create network-wide agility** by increasing planning cadence, leading to multi-year strategic or weekly network plans
- **Increase competitiveness** via globalization, digital transformation and customer centricity

## Solutions

- Network Design
- Transportation Modeling



# Integrated Business Planning

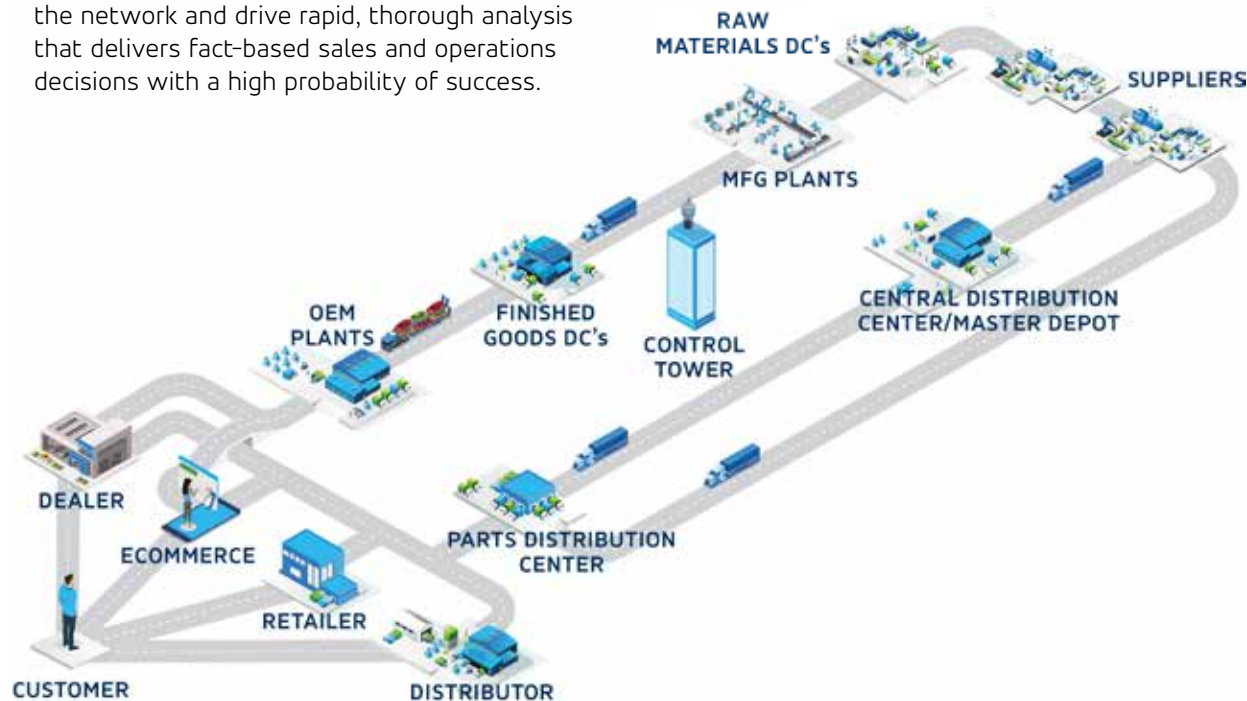
Today's worldwide automotive industry is characterized by volatility and disruption, on both the demand and supply sides. Wherever exceptions originate, integrated business planning (IBP) enables automakers to respond in a manner that's consistent with their long-term strategic plan and overall business objectives.

IBP enables real-time visibility across the global supply chain, so participants can sense when something goes wrong. It also allows auto companies to quickly define and enact the right strategic response, via advanced analytics and what-if scenario planning.

Supported by best-in-class digital capabilities from Blue Yonder, IBP positions automotive businesses to eliminate supply chain blind spots and disconnects, optimize daily operations across the network and drive rapid, thorough analysis that delivers fact-based sales and operations decisions with a high probability of success.

By relying on Blue Yonder's exception-based, real-time planning framework, enabled by AI, auto companies can identify supply-demand imbalances at the earliest possible moment. Then they can explore a variety of resolution alternatives, making probabilistic trade-offs in a collaborative manner until they determine the right course of action. They can closely analyze impacts on operations, costs and service levels before taking action.

To address the harsh realities of today's automotive industry, Blue Yonder supports continuous monitoring, real-time alerting and a continuous feedback loop that spans planning and execution. The result? More synchronized, harmonious operations and more certain results, even in an environment of uncertainty.



## Key Benefits

- **Streamline the consensus forecasting process** via better collaboration, leading to less waste, optimized labor and improved sustainability
- **Increase planning speed and productivity** with a highly automated forecasting process
- **Improve customer service levels** at a lower cost through reduced inventory
- **Enhance understanding of business performance** via better, more comprehensive reporting, data and analytics.

## Solutions

- Sales & Operations Planning

# Integrated Demand & Supply Planning

The past two years have seen automotive companies scrambling constantly to adjust to the “next normal,” matching their long production cycles with fast-changing market demand. In this volatile environment, the long-term advantage will go to manufacturers that link demand and supply planning as closely as possible, tying production directly to forecasted demand and planned inventory.

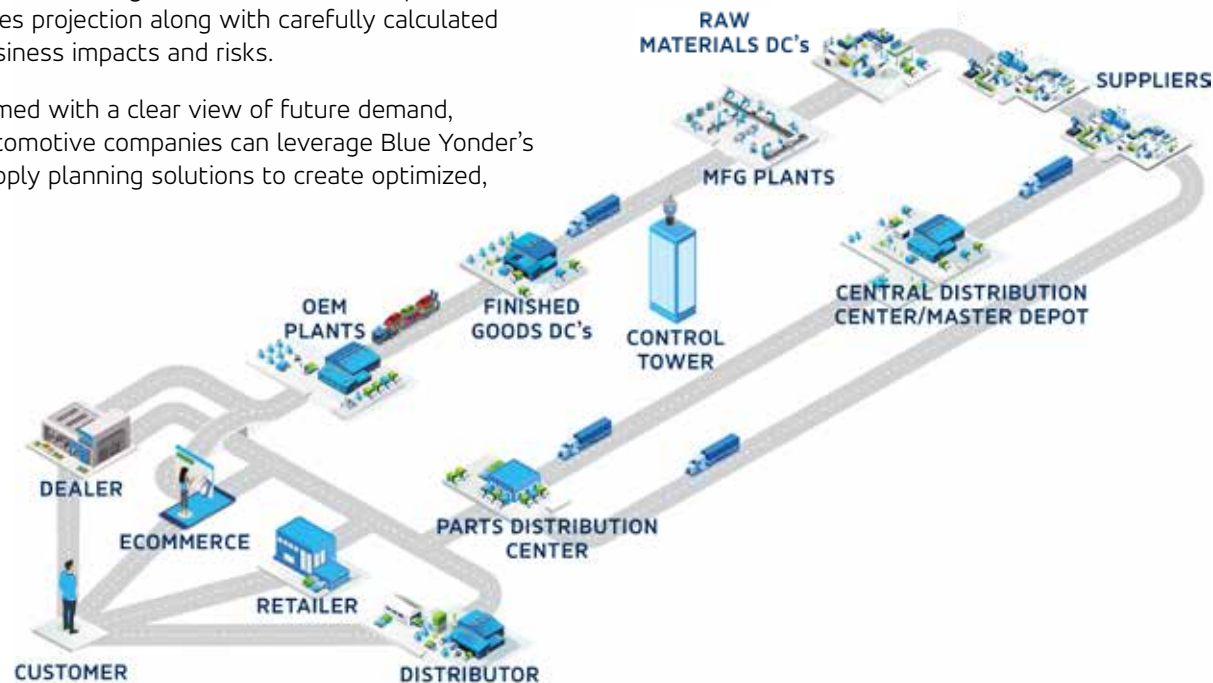
Too often, a lack of real-time visibility into demand drivers leads to a disconnect between demand and supply plans, causing misaligned inventory and product shortages. The solution? Tightly integrated planning systems that can sense actual demand from all sources, not just extrapolate historical trends, to form an accurate picture of future demand. Blue Yonder can help, with machine-learning capabilities that ingest a variety of demand-driving variables and create a precise sales projection along with carefully calculated business impacts and risks.

Armed with a clear view of future demand, automotive companies can leverage Blue Yonder’s supply planning solutions to create optimized,

executable plans across their global networks. Consistently named to Gartner’s Magic.

Quadrant for supply chain planning, Blue Yonder solutions deliver industry-leading planning, capacity planning, distribution planning and production scheduling capabilities for complex, global, asset-intensive production. Auto manufacturers can seamlessly balance changing customer needs with the realities of the physical supply chain, from materials and inventory levels to asset utilization and production capacities.

Purpose-built to manage the extreme volatility that characterizes today’s global auto industry, Blue Yonder’s integrated demand and supply planning solutions provide real-time visibility into all critical functions and holistically optimize end-to-end planning.



## Key Benefits

- **Increase the quality of demand forecasts**, using leading-edge ML technology
- **Create material- and capacity-optimized supply plans**, including fast demand-supply scenarios, to maximize customer service and revenues
- **Strategically allocate limited supply to different channels and customers**, in line with business objectives
- **Promise orders in real time**, aligned with supply allocations
- **Optimize cost-to-serve** with intelligent segmentation, automated planning parameter tuning and optimized inventory targets
- **Create optimized factory schedules** to maximize throughput, while minimizing inventory and operating expenses
- **Boost planner productivity** with collaborative, outcome-based planning

## Solutions

- Demand Planning
- Supply Planning
- Inventory Optimization
- Production Planning
- Allocation Planning & Order Promising



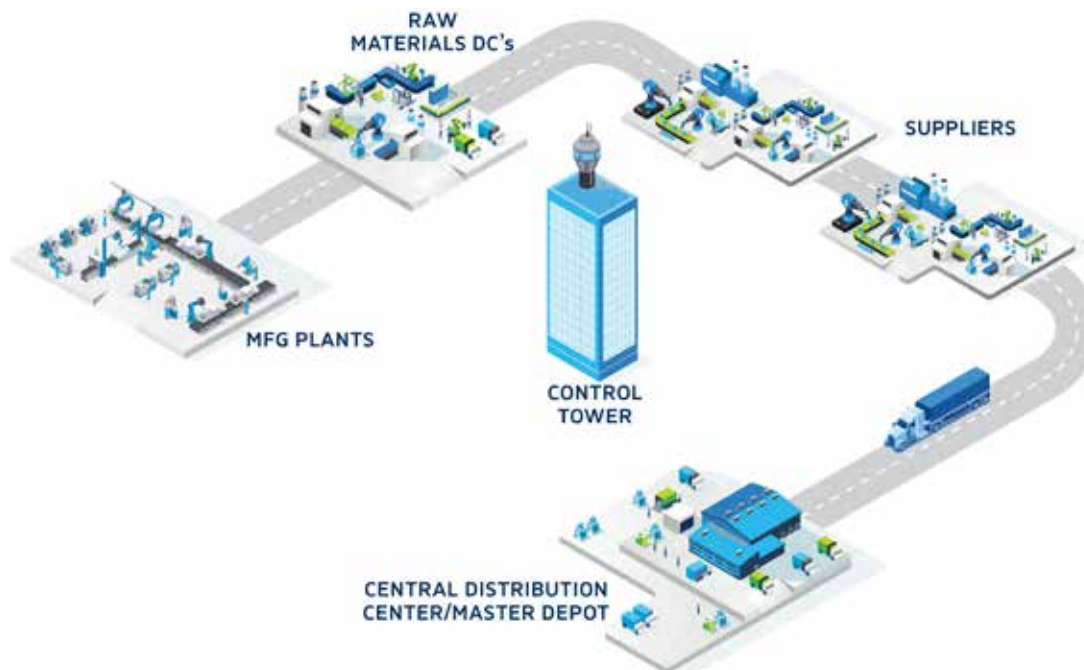
# Supplier Collaboration

Today's extreme volatility demands that automakers work much more collaboratively with their global network of suppliers. They need to adopt an extended, digital network model that's based on a shared demand forecast, real-time visibility to changing conditions and a synchronized response to any exceptions on both the demand and supply sides.

All trading partners must break down functional and organizational barriers to identify any potential supply gaps at the earliest possible opportunity, then work together on an orchestrated resolution. This means sharing market forecasts, operating data, logistics insights and other critical information via a shared platform of supply chain solutions. Only by recognizing and responding to both upstream and downstream events can all partners optimize their financial and service results.

Blue Yonder's Control Tower is built with an AI- and ML-enabled framework that delivers end-to-end visibility of the entire supply chain, across the extended partner network, via a shared technology platform. Proactive alerts inform all supply chain participants of disruptions in real time, then powerful business analytics help identify the root cause and expected impacts.

Machine learning helps surface resolution recommendations, based on data patterns, leveraging capabilities that exceed the cognition of human planners. Shared playbooks and situation rooms bring together internal and external stakeholders in real time, so each trading partner can maximize its own outcomes, while also considering the holistic performance of the entire supply network.



## Key Benefits

- **Increase end-to-end collaboration and results** via a common technology platform
- **Maximize transparency** by sharing critical forecasts, data and plans
- **Identify resolution strategies quickly** by collaborating, planning and executing contingencies quickly and efficiently
- **Increase cost savings** via automated processes and long-term supply chain collaboration
- **Monitor supplier status in real time** to enable an immediate response when disruptions occur

## Solutions

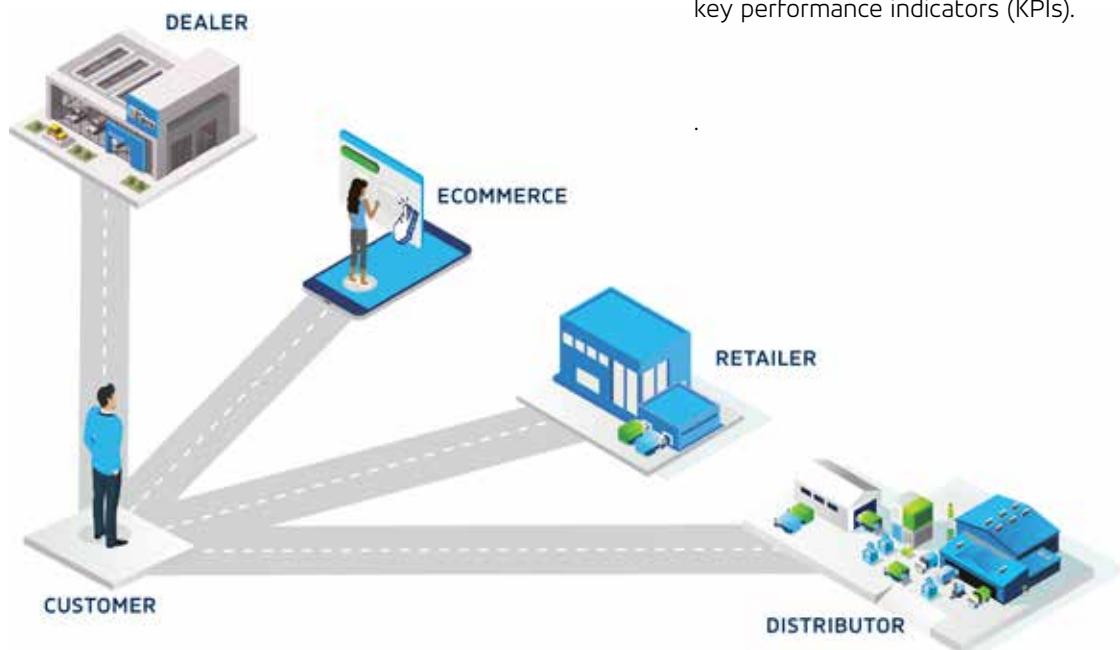
- Control Tower — Collaboration

# Omni-Channel Fulfillment

Service-level requirements in the automotive industry vary greatly among channels, including dealers, distributors, e-commerce and fleet. But, whatever the channel, success depends on optimizing the process of receiving, confirming and fulfilling customer orders. That means orchestrating personalized, experience-aware supply chains across a complex structure of products, assemblies, parts families and SKUs.

Blue Yonder accelerates and automates every part of the omni-channel fulfillment process, ensuring that every channel and every customer receives the highest possible level of service and transparency. Blue Yonder solutions help auto companies optimize inventory, minimize costs, maximize service and meet sustainability targets — all while making a profit.

Inventory and order management capabilities from Blue Yonder provide real-time inventory visibility across the network. Automakers and their suppliers can match specific products with individual customers and fulfill orders most effectively based on cost, location and transit times. Blue Yonder's advanced fulfillment optimization engines ingest real-time data and make fact-based, on-the-fly decisions that balance a wide range of outcomes and support multiple key performance indicators (KPIs).



## Key Benefits

- **Deliver accurate and reliable inventory commitments** to customers across every channel in real time
- **Increase revenue by delivering accurate data to customers**, including in-stock/out-of-stock, local inventory and available product quantities
- **Deliver personalized experiences** based on customer preferences
- **Optimize the cost to fulfill**, considering product location, cost of merchandise, product selection, profitability, transportation, and supply chain costs

## Solutions

- Inventory & Order Management
- Transportation Management
- Warehouse Management
- Labor Management

# Warehouse and Labor Management

The rapid growth of e-commerce has significantly impacted warehouses in every industry, including automotive manufacturers. Delivering vehicles through multiple channels from multiple locations, amidst well-publicized product shortages and supply chain issues, has created an unprecedented level of warehouse complexity.

A lack of real-time connectivity and synchronization between warehouses and other key functions, including transportation, is only exacerbating this situation. Without visibility and transparency across functions, ever-changing omni-channel conditions are driving order fulfillment delays, out-of-stocks, frequent inventory movements and high expediting costs. Adding to the complexity are extreme global labor shortages and high turnover rates.

Blue Yonder is uniquely qualified to address both warehouse management and labor management challenges, with industry-leading solutions in each area.

Recognized as a Leader in every Gartner Magic Quadrant for WMS published since 2012, Blue Yonder's warehouse management capabilities connect inventory management and fulfillment activities with both upstream, demand-facing data and downstream transportation insights

in real time. Wherever a change occurs, the warehouse can react optimally to hit service targets, while also controlling costs to protect profit margins. By leveraging this solution to gain real-time visibility into demand, automotive manufacturers can position both inventory and human resources optimally. Blue Yonder warehouse management utilizes AI and automation to make fact-based decisions in real time, to keep pace with omni-channel demand shifts.

In addition to ensuring that the right talent and skillsets are in place, Blue Yonder's labor management solution provides a real-time, granular view of workforce performance, supporting coaching and continuous improvement. Automakers can define and share best practices, set performance expectations, track warehouse activities, and support ownership, buy-in and accountability.



## Key Benefits

- **Achieve end-to-end visibility** to support fast and profitable inventory management
- **Grow revenue** with accurate inventory levels and placement
- **Deliver personalized experiences** based on customer preferences
- **Maximize employee productivity, speed and accuracy** to combat talent shortages while delivering superior service
- **Reduce cost-to-serve** with unified logistics optimization across warehouse, labor and transportation

## Solutions

- Warehouse Management
- Labor Management
- Transportation Management
- Inventory & Order Management



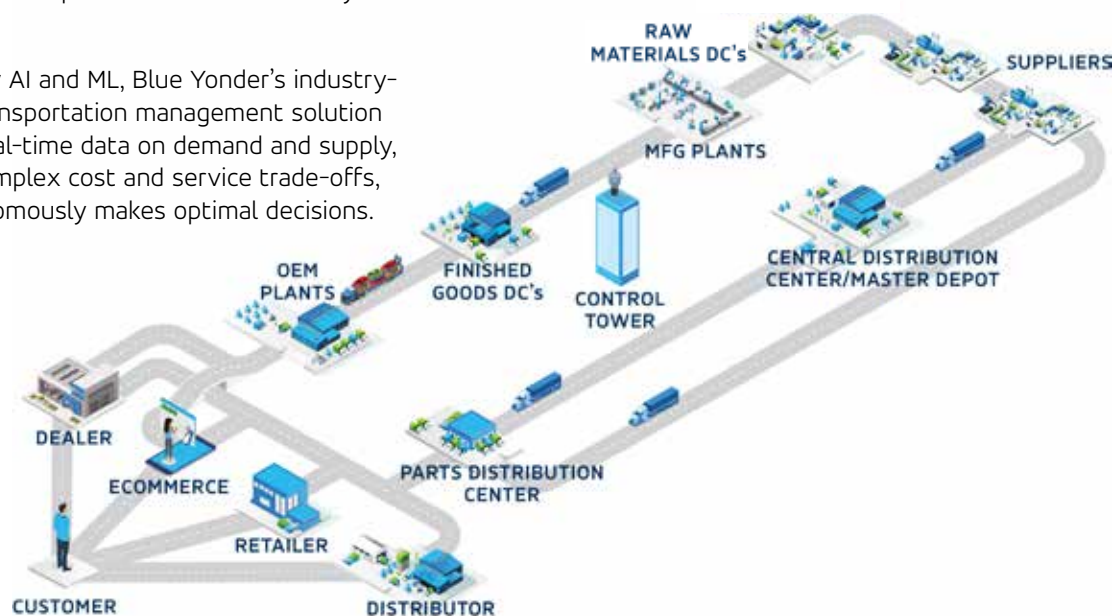
# Transportation Management

As demand and supply volatility have increased, many automotive manufacturers have compensated by building larger distribution networks and relying on expedited delivery.

However, this strategy is not sustainable or profitable in the face of ongoing demand shifts and product shortages.

Automakers don't need larger distribution networks. They need smarter transportation capabilities that are directly connected to real-time data from the demand forecast, internal execution partners like warehousing, the external carrier network, and third-party data sources for news, traffic and weather. Via digitalization, the transportation function can more efficiently match available assets with customer demand, while also responding agilely to changing conditions like port closures, blocked transportation lanes, geopolitical events and extreme weather. Automakers can make profitable promises and consistently deliver on them.

Enabled by AI and ML, Blue Yonder's industry-leading transportation management solution gathers real-time data on demand and supply, weighs complex cost and service trade-offs, and autonomously makes optimal decisions.



Blue Yonder's predictive modeling and advanced analytics consider not only cost and service, but also other KPIs such as creating and executing transportation plans. As conditions inevitably change, Blue Yonder's optimization engines conduct iterative analysis to keep plans on track. Blue Yonder's transportation management solution is designed for practicality and usability, as it easily optimizes routine daily tasks such as freight bidding and procurement, routing and asset utilization.

By enabling the creation of a digitally connected ecosystem, with real-time visibility between transportation and other key functions, Blue Yonder drives greater resilience to disruption, increases asset productivity and significantly improves long-term financial results. Blue Yonder has been recognized as a Leader 11 consecutive times in the Gartner Magic Quadrant for TMS.

## Key Benefits

- **Gain end-to-end traceability** for accurate, reliable inventory handling and delivery
- **Achieve in-transit visibility** for optimized real-time decision making as conditions change
- **Leverage advanced routing and load-building capabilities** to reduce the cost-to-serve
- **Reduce lead times** with unified logistics optimization in transportation, labor and warehousing
- **Support sustainability and control costs** by optimizing capacity, maximizing asset utilization and reducing miles

## Solutions

- Transportation Management
- Transportation Modeling
- Load Building
- Warehouse Management

# Real-Time Visibility & Collaboration

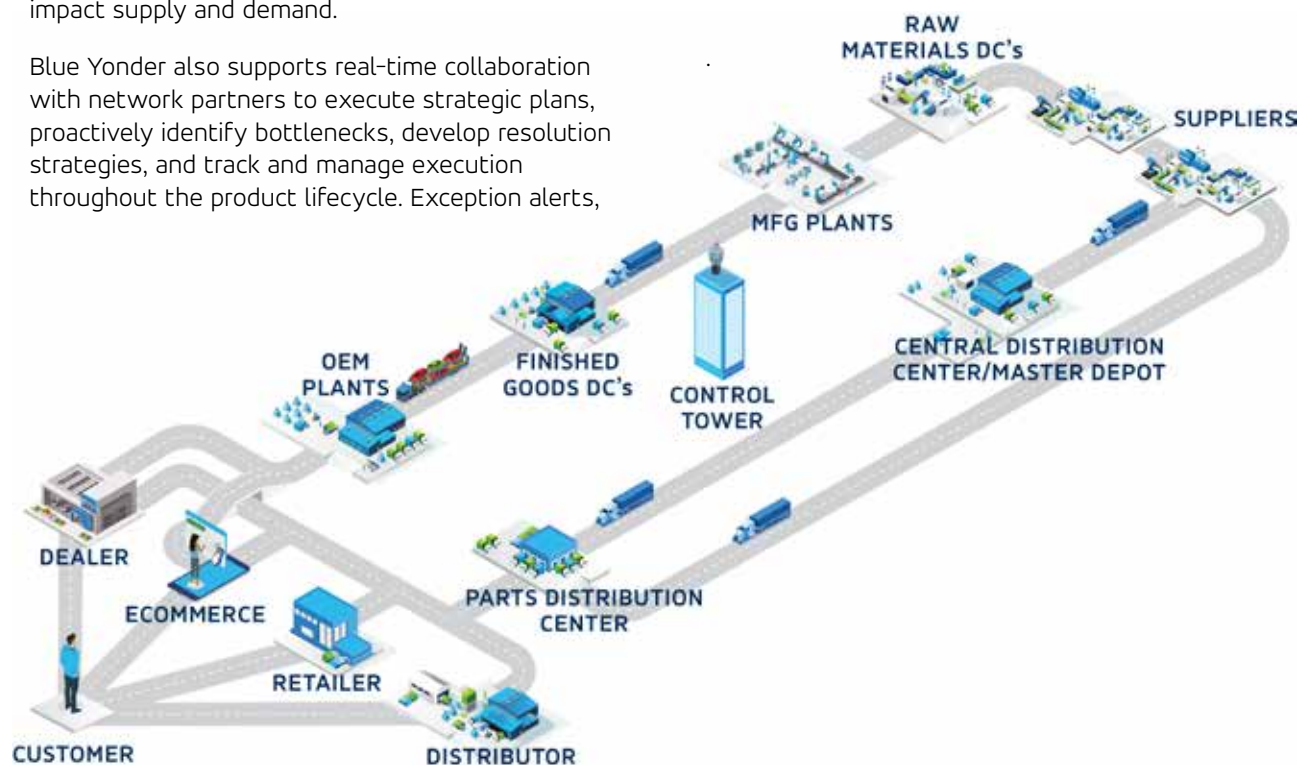
Given the extreme volatility in the worldwide automotive industry today, it's essential for companies to be able to see, analyze and act on information across their supply chains in real time. It's also critical to learn from experiences such as product shortages, and become better at sensing and responding to supply chain risks and opportunities in the future.

Blue Yonder's Control Tower was designed to address that need by providing real-time, end-to-end supply chain transparency. By visualizing the current flow of goods across suppliers, factories, distribution centers, customers and distributors, automotive companies can identify and address any events or exceptions that will significantly impact supply and demand.

Blue Yonder also supports real-time collaboration with network partners to execute strategic plans, proactively identify bottlenecks, develop resolution strategies, and track and manage execution throughout the product lifecycle. Exception alerts,

playbooks and situation rooms ensure that all supply chain participants are involved in optimizing overall supply chain results. Control Tower also supports the development of a "digital twin" of the end-to-end supply chain network including items, locations and inventory — so various scenarios can be tested in a risk-free environment.

Backed by artificial intelligence and machine learning, Blue Yonder solutions exceed the abilities of human cognition to recognize and address complex supply chain issues. They continually improve in their ability to recognize exceptions, prescribe actions and automate the execution of new plans.



## Key Benefits

- **Empower and engage planners** to be more productive and effective decision makers, with end-to-end visibility in real time
- **Improve resource utilization** through prioritization of issues and actions
- **Collaborate systematically with suppliers** on forecasts and capacities
- **Enable control, visibility and accuracy** from suppliers' production all the way through to the end customer
- **Support fast responses** to any changes in demand and supply

## Solutions

- Control Tower

# Blue Yonder Drives Success in the Challenging Automotive Industry

As the global automotive industry has evolved in its capabilities and competitive challenges, Blue Yonder's industry-leading solutions have evolved along with it.

Today, Blue Yonder is unique in its ability to support a true digital supply chain transformation via advanced artificial intelligence and machine learning, predictive analytics, real-time probabilistic forecasting and autonomous decision-making. Because Blue Yonder spans every supply chain competency, no software provider is better equipped to support a fast, synchronized network-wide response when disruptions inevitably occur. It's not a coincidence that Blue Yonder is consistently named to multiple Gartner Magic Quadrants, including supply chain planning, year after year.

The supply chain challenges facing the automotive industry are not going away; in fact, they are expected to increase as vehicle electrification, autonomy and other trends continue to gain momentum. The only way automakers can succeed in this tough environment is by building the end-to-end visibility, speed and agility that enables them

to respond to changing conditions faster, and more strategically, than competitors. Today, a complete digital transformation of the automotive supply chain is the key to success and Blue Yonder can get you there.







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