Future Series

The Distribution Leader of the Future:

Five Key Capabilities for Success

BlueYonder

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As we enter the 2020s, forget what you know about being a distribution leader. The coming decade will usher in a new era of strategic agility, customer focus, delivery flexibility, supply chain collaboration and extreme speed. Retailers, manufacturers and logistics providers alike need to adopt leading-edge technologies such as artificial intelligence and automation to act decisively, re-plan in real time and accelerate every daily process. Does your business have the core capabilities needed to emerge as a distribution leader in this new era?

Abstract

Rising consumer expectations and new capabilities from mega retailers including same-day and next-day delivery have reshaped the nature of logistics and distribution not just in retail, but in every industry. As customer expectations grow, virtually every company has been forced to reconsider its business strategy and how its physical supply chain must evolve to support distribution leadership.

Options for sourcing labor, transportation and even inventory have expanded exponentially as the service-based economy has been catapulted by technology through uberization, enabling companies to reconsider alternatives to traditional supply constraints. For most retailers and manufacturers, a high degree of complexity is created by the fact that customers have very different delivery expectations for different products, creating the need for flexible delivery models supported by external partners.

This means a radical rethinking of the distribution function. Fortunately, advanced technologies such as cloud computing, machine learning, artificial intelligence and the Internet of Things are available to provide real-time visibility to customer needs as well as support real-time responsiveness in meeting those needs. By leveraging these advanced technologies to support five key logistics capabilities, retailers and manufacturers can be poised to achieve distribution leadership in the next decade. While many of these key tenets apply to pure logistics players, they face their own demands and priorities, which are also covered in this white paper (see "Putting the Future in Focus: Three Core Competencies for Pure Logistics Providers.")

A look at distribution with 2020 vision

The global logistics environment has changed dramatically, driven by mega retailers and their promises to deliver today, tomorrow or even in the next hour. In addition, there are more ways to get products than ever before, from home/office delivery to store pick-up and third-party location pick-up.

To match this level of delivery speed and flexibility, many companies have replaced weekly replenishment with daily or intraday replenishment to forward-fulfillment centers and stores. Both corporate logistics teams and pure logistics providers have formed new partnerships with a range of external partners to support this new level of agility and responsiveness. In short, we've seen a complete rethinking of the logistics function and, in many cases, the larger business model as we redefine what distribution leadership means.

What makes this situation even more complex for the typical retailer or manufacturer? They need to distinguish between more frequently purchased products the products customers expect today and the slower-moving products customers are willing to wait for. This means two entirely different approaches to inventory, replenishment, fulfilment and delivery need to be synergized through partners and infrastructure investments. Localized distribution spots with uberized delivery pools are emerging alongside more traditional warehousing and logistics assets.

Today's hyper-focus on meeting customer expectations is also creating pressures upstream in the supply chain, as manufacturers extend visibility and collaboration beyond their own walls to avoid any disruptions. To improve the entire network's responsiveness to increasingly shortened lead times, trading partners are working together to seamlessly manage product flow throughout the end-to-end supply chain and across all fulfillment channels. Investment in enabling IT solutions has accelerated to empower this collaboration internally and externally.

In addition, the influx of real-time information available has made many existing key performance indicators (KPIs) and performance measurement approaches obsolete. With volumes of data but limited resources, retail distribution leaders need to look less at operational metrics and more at their end-game organizational goals for shelf availability and customer satisfaction. Whether the primary objective is speed, availability, cost contribution or customer service, aligning goals across the

organization and executing on those goals in the marketplace is paramount to differentiating from fast-moving competitors and earning a profit.

The creation of a new digital ecosystem has enabled these and other changes that will shape the definition of distribution leadership in the 2020s and beyond. Digital technologies will allow companies to increase their visibility, collaboration, speed and responsiveness. These capabilities will also help organizations explore and capitalize on new business models and distribution strategies.

Which companies will master today's distribution challenges and win in the next decade? Based on these competitive imperatives, Blue Yonder has defined five key distribution capabilities that organizations need to create and master. By capitalizing on emerging technologies and new ways of doing business, companies with these five essential capabilities will succeed, even as the competitive environment grows ever more challenging. While many of these imperatives apply to pure logistics providers, these companies also face their own unique challenges as we look to the future (see "Putting the Future in Focus: Three Core Competencies for Pure Logistics Providers.")

1 Create a supply chain focused on demand and fueled by AI

Big Data, IoT and advanced analytics have created the ideal mix of capabilities for companies that truly want to understand and serve customer demand. By gathering data, then applying algorithms and probabilistic modeling, today organizations can see correlations and predict demand with greater accuracy than ever before. They can also make real-time forecast adjustments as conditions change and sense potential disruptions before they impact customer promises.

The real secret to distribution leadership in the 2020s is using highly accurate, real-time demand insights to inform decisions across the end-to-end supply chain. While creating a demand-driven supply chain means ingesting and interpreting large volumes of data, advances in cloud computing make data-based decision making easy and cost-effective.

Ideally, this demand data should be shared upstream with suppliers and other trading partners, creating a unified demand fulfillment strategy and a collaborative response to any deviations from plan. It should also be shared downstream. In the hyper-connected world of the future, the entire network can proactively sense and respond to potential supply chain disruptions caused by weather, port congestion, equipment failure, capacity shortages and labor shortages. Connected via a common

technology platform, the end-to-end supply chain can also respond to unexpected demand volatility caused by social media, news reports or special events that are identified via AI and analytics.

The ultimate use of AI, however, lies in its ability to make autonomous decisions across the end-to-end supply chain when disruptions do occur. By relying on an analysis of historic events and probabilistic outcomes, in most cases AI and ML are capable of pulling the right levers to correct supply chain performance, with no human intervention. As employees decrease their focus on exception management, they can devote their time and attention to more strategic activities such as market research, and data science.

For companies looking to emerge as true distribution leaders in the next decade, automating supply chain decision making must become the de facto approach to managing demand volatility, which is only going to increase in the 2020s.

In fact, IDC predicts that, by the end of 2021, more than 50% of all manufacturing supply chains will be making investments in AI to increase their resilience, driving an average productivity improvement of 15%.[1]

2 Ensure fulfillment Is profitable via cross-enterprise orchestration

As Amazon, Walmart and other mega retailers have rewritten the rules of distribution over the past decade, many companies have been led to make "me too" delivery promises that delighted customers but significantly eroded profit margins. Often, meeting these service-level commitments led companies to invest in solutions that offer little more than knee-jerk reactions, often resulting in net losses.

These companies failed to realize that profitable order promising relies on a mixed bag of capabilities including demand segmentation, inventory reservation, available-to-promise analysis, strategic sourcing, intelligent substitution policies, flexible shipping options, and effective pricing and promotions management. The good news is that the digitalization of the end-to-end supply chain is making the complex process of order promising much easier.

In the future, the hyper-connected supply chain will support profitable fulfillment by using AI to make intelligent sourcing decisions, optimize warehouse space and transportation assets, choose the best fulfillment node and minimize shipping costs. Upstream sensing intelligence will proactively identify disruptions and deliver recommended resolutions to eliminate supply chain risk before it impacts consumer demand. Warehouse automation and robotics will dramatically reduce labor costs, while increasing accuracy and eliminating human error.

In a recent report, IDC estimates that 65% of warehousing activities will rely on robots and situational data analytics by 2023. The payoff? A 20% increase in capacity and a 50% reduction in order processing time.[2]

Fueled by machine learning and enabled by uberization, the expansion of delivery options will make last-mile navigation increasingly cost-efficient, as the entire supply chain becomes more aware of last-mile labor constraints, commercial and residential delivery constraints, and customers' actual delivery expectations. By analyzing real-time insight and historical performance, AI and ML will work together to make service levels progressively higher, while simultaneously growing the profit margins associated with fulfillment activities.

3 Enable a seamless, efficient flow of product from end-to-end

The traditional supply chain has often been characterized by blind spots, which are caused when a lack of collaboration makes trading partners unable to see key information such as product location, available-to-promise inventory or a realistic customer delivery date. These blind spots can no longer be tolerated in today's environment of ultra-high customer expectations.

Fortunately, IoT, AI and ML are combining to illuminate this kind of critical information and enable true visibility and responsiveness across the supply network. Trading partners now have the ability to see potential disruptions in the product flow to the marketplace, as well as gain a probabilistic view of the potential impacts. In addition to seeing upstream supply obstacles, trading partners can also recognize downstream demand fulfillment risks and issues such as low store-level inventories.

This new level of visibility and collaboration creates a shared focus on maintaining seamless product flow across all nodes of the supply chain. Profit-driven product flow means looking beyond warehousing and transportation to see inter-connectivity across all customer orders and shipments. Real-time analytics can ensure that activities such as the unloading of trailers, the cross-docking of trucks, and the allocation of product across stores and channels are prioritized based on real numbers, not guesswork. Because data science exceeds the abilities of human cognition, AI can gather granular information on real-time shelf quantities, demand projections, shelf capacities, item substitution and historical lost sales, and then
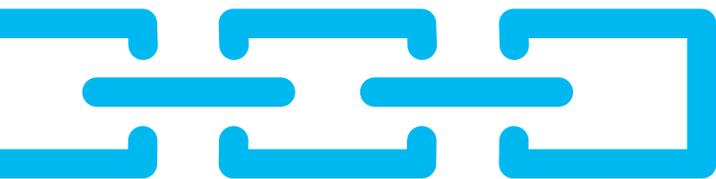
autonomously make recommendations for decisions that keep the flow of product moving in the most profitable way.

Warehouse operations will also be managed automatically to ensure product flow and profitability, as AI defines intelligent facility profiles, product-level storage profiles, item footprints and velocities. Both upstream and downstream signals will increasingly pull products from supplier warehouses and corporate distribution centers alike, seamlessly and profitability. Production runs will be iteratively optimized. The line between planning and execution will continue to blur, as real-time optimization and re-optimization of product flow becomes an achievable goal.

4 Gain a marketplace perspective on transportation, labor and warehousing

The need to keep up with mega-retailers has made many companies blind to the true costs of their transportation, labor and warehousing activities. Digitalization is increasing companies' ability to gain a marketplace perspective on these capabilities, treat them as commodities and compare the financial contributions of various options. This is foundational to distribution leadership.

IoT capabilities have long helped to track the location of transportation assets, and support real-time collaboration. The real financial value of advanced technology resides in its ability to sense real-time demand, identify and recognize capacity to re-structure transportation and labor assets dynamically, and execute as needed to serve customers and protect margins.

In the past, incurring extreme cost increases on the spot, due to disruptions, was seen as a standard practice a cost of doing business. But today's expanded transportation networks and labor pools provide companies with many more options, which means greater bargaining power. Both transportation assets and human workers can be optimally scheduled, and rescheduled, based on real-time or near-term demand signals. Extending visibility of available capacities in the market enables a more effective result, often delivering win-wins for collaborative trading partners.

The marketplace concept is not limited to managing and securing resources in transportation and labor; it will also be applied to warehousing. Companies can expect to see the emergence of an AirBnB-like warehousing ecosystem, with an open market for warehouse storage and 4PLs stepping in to provide templatized warehousing solutions. Extended offerings around value-added services, co-packing, co-manufacturing and even 3D printing will continue to deliver options to allow scale in supply chain operations, with 3PLs coordinating much of this capacity as super-grid logistics services providers.

As the supply chain becomes increasingly digital and collaborative, new partnerships may be formed by retailers, distributors and manufacturers to collectively source services and capitalize on economies of scale. This will help optimize the customer experience and also drive profits for all trading partners.

5 Establish sustainable, profitable logistics practices

Sustainability is gaining a level of urgency across every industry and every business function, fueled first by customer expectations for responsible practices and also, increasingly, as a risk-mitigation strategy for growing regulatory challenges. Distribution professionals have always championed sustainable practices, because they simply make good business sense. Not only do waste minimization, fuel efficiency and other responsible practices help protect the environment, but they also increase profits.

In the next decade, companies may create new network designs that take sustainability to the next level by pooling physical assets and streamlining operations. These consolidated networks will make it more sustainable and more profitable to respond to extreme demand volatility.

Companies will also leverage AI and autonomy to manage products with limited shelf life ¬ such as fresh foods and pharmaceuticals with much greater precision, minimizing waste. New strategies will be implemented to help divert and repurpose these products as they approach expiration. In addition, the back-hauling of materials for re-processing including corrugate, hangers, scrap plastic film and recyclables will become increasingly relevant as our world transitions to a circular economy.

Food traceability and quality will also benefit from the additional visibility enabled by the digitalization of the end-to-end supply chain. By using AI and ML, companies can tie sustainability issues such as animal welfare, green agriculture, and responsible sourcing and packaging of products to price premiums. This will afford both retailers and suppliers the opportunity to differentiate and profit appropriately from responsible business practices.

In general, autonomous decisions made by AI will increasingly consider environmental factors such as waste, fuel consumption, emissions and water usage. Machine learning will help the end-to-end supply network become ever more sustainable over time.

There's a reason

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of Gartner's Top

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supply chain companies rely on Blue Yonder to set the stage for success in the 2020s.
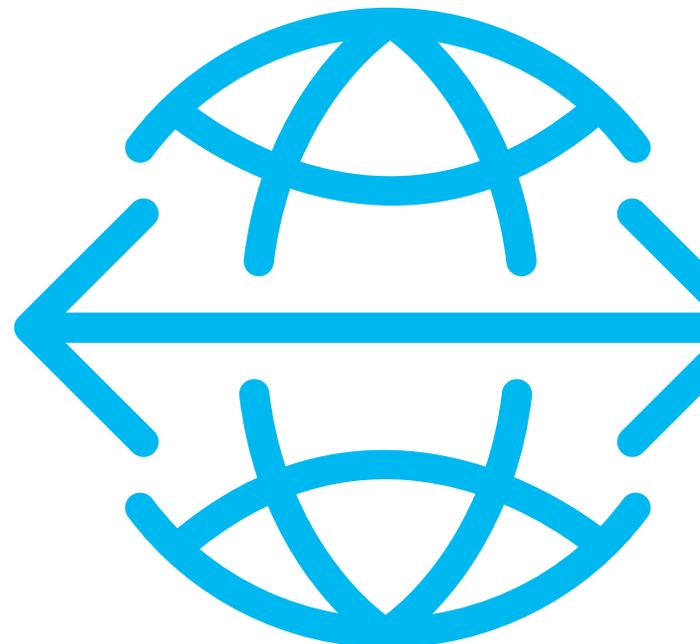
Blue Yonder: your partner today, and tomorrow

Artificial intelligence, machine learning, supply chain autonomy and other concepts discussed in this paper may seem like futuristic concepts out of reach for most companies today. But the world's distribution leaders are already using these advanced technologies to deal with demand volatility, increasing service requirements, the need for enhanced collaboration, the drive toward sustainability and other challenges.

Backed by the experience gained across 4,000 customer engagements, Blue Yonder understands the challenges companies are facing in 2020. Blue Yonder can help you master these challenges and gain the five core capabilities described above via:

- Industry-leading, advanced solutions in demand, fulfillment, warehousing and transportation that leverage the power of IoT, AI and ML to fuel autonomous decision making

- Smart, standalone control tower solutions that sense and manage exceptions in real time across the distribution network

- A robust, extensible technology platform built to unite all trading partners and support the seamless sharing of information across multiple enterprises

- A cloud-enabled software-as-a-service (SaaS) delivery model that quickly and cost-effectively gets Blue Yonder's industry-leading solutions up and running, for a fast return and a low lifetime total cost of ownership (TOC)

- Software customization and consulting services that make emerging concerns such as sustainability a centerpiece of your business model and distribution strategy

With deep customer experience, a library of best practices and a full range of end-to-end supply chain solutions enabled by AI, Blue Yonder is uniquely qualified to equip you for distribution leadership in the future. From greater visibility to more impactful partnerships, Blue Yonder can help you achieve significant time and cost savings today and set the stage for a fully autonomous supply chain tomorrow.

Putting the future in focus: core competencies for pure logistics providers

While logistics service providers have certainly been affected by the same-day delivery promises of retailers, they also face distinct challenges based on their own unique business models. They need to offer unique and differentiated services to win in an increasingly crowded logistics marketplace. They need to adopt a network mindset and a broad view of all threats and opportunities across that network, in real time. And they need to increase both the accuracy and the cost efficiency of all their activities, to delight customers while also protecting profit margins.

How can they accomplish these objectives, establish their own distribution leadership and stay relevant for their customers in the coming five years? Among many other foundational activities they need to address, the following two core competencies, enabled by advanced technology, will be essential:

Solution innovation and supply chain orchestration

In order for logistics providers to remain attractive partners for their customers the retailers and manufacturers of this world and continue to grow revenues and profits, solution innovation and service evolution will be key. The ability to manage

end-to-end supply chains on behalf of their customers, supported by the adoption of relevant tools and the acceleration of network thinking, will be essential.

New logistics solutions will move toward supergrid logistics, the operation of logistics marketplaces, the creation of fresh and cold chains, omni-channel management and other forward-looking capabilities that require basic techniques such as demand forecasting, inventory and fulfillment optimization and inventory financing.

What also will differentiate 3PLs and other logistics players is their strategic capability to gain a "control tower" view of the many threats and opportunities available to them, in both the short and long terms. Armed with artificial intelligence (AI), the Internet of Things (IoT) and other leading-edge technologies, logistics providers will increasingly have this high-level vision.

They will be able to sense and manage opportunities and disruptions in real time, while also looking ahead to actually predict events in advance and re-plan. By gathering data and applying advanced analytics, logistics providers will become masters of the intelligent response differentiating themselves by adding a new layer of

value and innovation for their customers.

Enacting a digital strategy: the road to the autonomous supply chain

Of course, a key factor in logistics solution innovation is adopting advanced technologies across the network, so real-time data can be collected, analyzed and applied to key decisions, making supply chains both prescriptive and predictive. Outdated technologies need to be replaced by up to-the-minute solutions, deployed in a Software-as-a-Service (SaaS) model for maximum speed, relevance and flexibility. As the entire logistics network becomes connected in real time, and supported by the right algorithms and analytic engines, response times are slashed
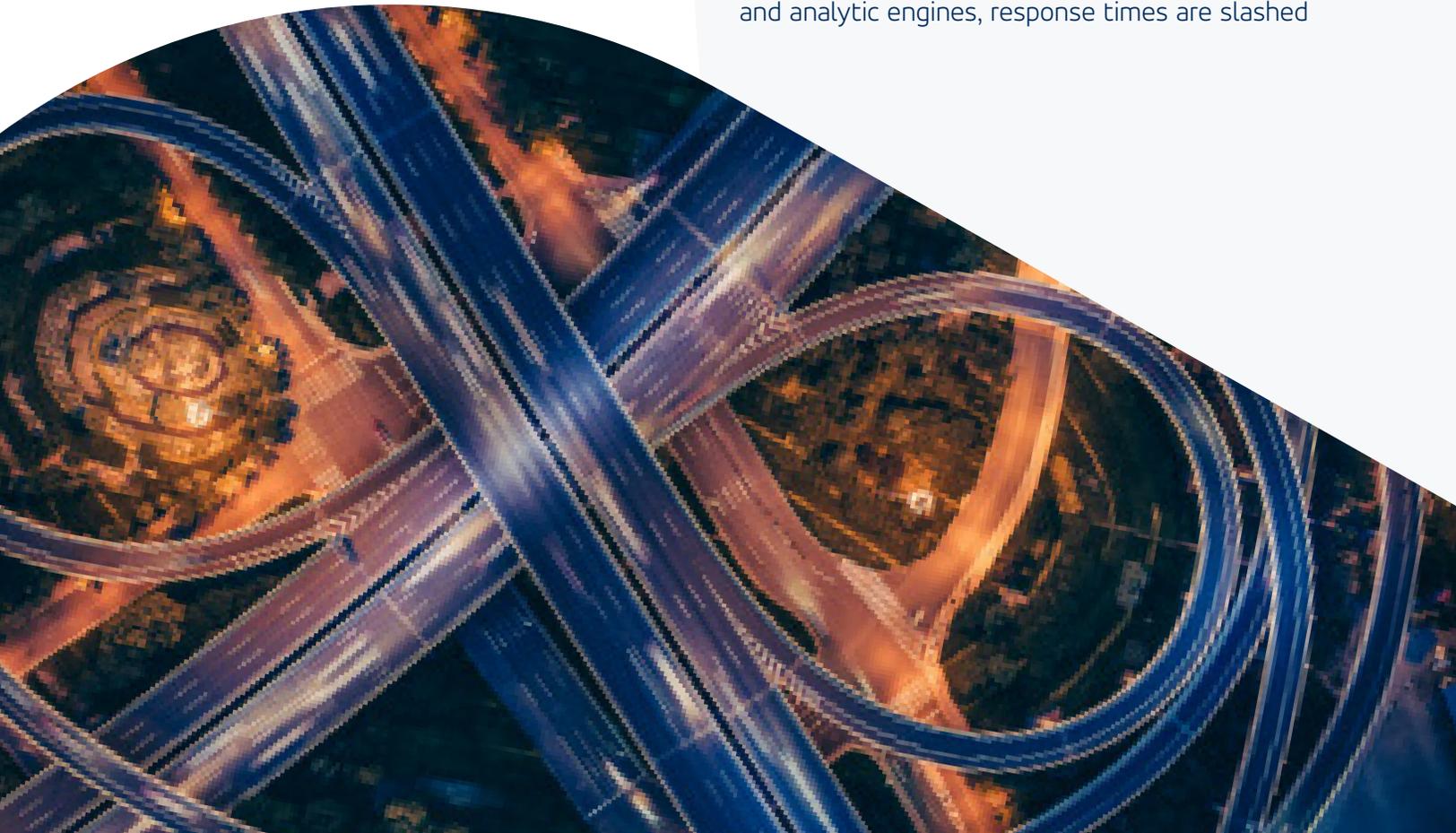
and every decision becomes fact-based and strategic in nature. In the 2020s and beyond, estimates and best guesses simply won't cut it. The entire logistics business needs to be connected and supported by best-in-class digital solutions.

In addition, in all future logistics initiatives whether they involve the development of new logistics solutions or improving the performance of existing logistics solutions information and information technology will play a crucial role. Data and IT will be essential for logistics service providers, as the ability to position IT in the core of the organization will become the most important driver for growth. With the advent of the advanced application of the IoT, the emergence of edge technologies and the introduction of more IT-savvy millennials into the logistics community, a new breed of logisticians will grow to more effectively execute digital strategies.

Just as they need to discard old technologies, logistics providers need to abandon tedious and error-prone manual processes as they look to the future. Once the organization is connected and unified via digitalization, the foundation is created for true autonomy the ability for the logistics network to make and execute decisions with zero human intervention. Backed by AI, along with a set of constraints and decision factors, the logistics supply chain can begin to make

strategic choices and self-correct autonomously when plans go off course. Thanks to machine learning (ML), the supply chain can continuously improve and become better at making decisions on its own. While AI and ML sound like futuristic concepts, they are here today and they represent the only Profitable, efficient way to navigate the increasingly complex, ever-changing landscape faced by pure logistics providers.

1,2 IDC FutureScape: Worldwide Supply Chain 2020 Predictions, October 2019, IDC #US45573518

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