LOGISTICS DIGITALIZATION

First-to-Last Mile Optimization

Today's transformed world demands **a transformed approach to logistics** – highlighted by an end-to-end customer focus.

BlueYonder

A completely transformed world demands a complete logistics transformation

Today the world's logistics teams face incredible pressure. Logistics simultaneously represents the single biggest cost center for many companies – and, increasingly, the single biggest customer service differentiator. The "Amazon effect" continues to increase customer expectations for fast, low-cost delivery to any address, anywhere in the world, with orders placed through multiple channels. And logistics is the vehicle for making that happen, while still protecting profit margins.

That's always been a challenging proposition. But now meeting customer needs is even tougher. Inflation is sending fuel costs and other expenses through the roof. Labor shortages mean there aren't enough drivers and warehouse employees to perform critical tasks. And disruptions continue, in the form of demand shifts, production shutdowns, materials shortages and blocked shipping routes.

How can logistics teams focus on meeting customer needs at every stage, from the first mile to the last mile? One thing is clear: they can't achieve this end-to-end customer focus by relying on outdated legacy systems and manual processes. Today's transformed world demands transformed logistics capabilities – characterized by collaboration and connectivity, and powered by artificial intelligence (AI), machine learning (ML), predictive analytics, robotics and other advanced technologies.

> **Logistics digitalization, from the first to the last mile, is no longer optional. It's a cost of doing business in today's incredibly challenging, customer-centric business landscape.**

End-to-end synchronization and optimization have never been more critical.

Why is digitalization so critical? Because making smart, profitable, customer-centric decisions in today's fast-moving, volatile environment exceeds human cognition. Only advanced technologies, enabled by AI and ML, are capable of monitoring conditions along the end-to-end supply chain, ingesting enormous volumes of near real-time data, performing rapid yet rigorous analysis, weighing sophisticated trade-offs, and determining the best possible course of action – one that protects both profit margins and customer service targets.

But the value of digitalization doesn't stop there. Advanced technology is also essential to connect the end-to-end value chain digitally, from the first mile to the last mile, so all partners can participate in a shared response that's focused on the end customer. Intelligent optimization engines are not only capable of determining the right action, but also executing it – instantly and autonomously – across warehouses, fleets and other logistics assets.

Real-time, end-to-end synchronization and optimization are key to truly mitigating the disruptions that impact customer promises, as well as managing ongoing challenges like inflation and labor shortages. Today's powerful digital solutions ensure that key decisions aren't made on the fly, ad hoc, in a siloed manner, but that they instead represent a strategically sound approach that thoroughly considers costs, service outcomes and other factors.

> **By creating visibility, transparency and accountability across all functions and trading partners from the first mile to the last – and executing an informed, strategic, orchestrated response as conditions change – digitalization is the only way to succeed in today's transformed world.**

Enabling synchronization and optimization via advanced technologies

Forward-looking logistics organizations understand that digital transformation is their means to reinvent themselves, leapfrog the competition, install real-time responsiveness, and establish themselves as strategic, long-term partners with their customers. Logistics teams that are still relying on manual processes and siloed, outdated legacy solutions will never be able to establish the near real-time connectivity, visibility and orchestration that's required for to achieve a customer focus today.

Logistics teams need to acquire six key advanced technologies to maximize their service and cost outcomes today:

> **Logistics teams that aren't actively investing in these capabilities, which are described in greater detail in this eBook, are already falling behind – and they risk losing even more ground as business conditions become even more challenging.**

1 Digital control towers

That sense exceptions and disruptions at the earliest opportunity

2 Intelligent decision engines

Which ingest enormous volumes of data and drive optimal resolutions

3 Collaboration platforms

To connect and synchronize the logistics network around a shared plan

4 Task optimization solutions

To ensure that all processes across the network are as efficient and accurate as possible

5 Robotics & process automation

Which help keep service levels high, reduce costs and combat labor shortages

6 Automated procurement

To digitize key logistics transactions and build a strong carrier network for greater resilience

Digital control towers

Gaining a near real-time, end-to-end perspective

Today's supply chains span thousands of miles and involve dozens of trading partners. Maximizing service levels, while minimizing costs, requires every participant to be aware of disruptions that occur at any point in this network. From the first mile to the last, logistics stakeholders need to monitor conditions in near real time and react quickly, in an orchestrated manner, as changes occur.

Digital control towers provide the solution. As they sit in the center of the supply chain ecosystem, gathering current data, they can identify exceptions to plan at the earliest possible opportunity. From small events like a missed delivery to sweeping disruptions like a natural disaster, digital control towers sense the problem in advance, communicate it both internally and externally, and facilitate a proactive, synchronized response across the entire network.

By integrating a digital control tower with their digital transportation management system (TMS), logistics teams can leverage AI and ML to apply predictive analytics, run scenarios, see the expected results and make recommendations that are automatically and seamlessly executed by the TMS.

The world's leading logistics providers are utilizing this powerful combination to create an autonomous, self-correcting logistics network that pivots, strategically and profitably, at the speed of change.

ARMADA

Armada, a 3PL leader, has used a digital control tower to reduce its disruption response time by 65% compared to manual methods. Exceptions are recognized and communicated to all stakeholders within one hour, 96% of the time.

Intelligent decision engines

Translating data into strategic action

One of the benefits of digitalization is the ability to collect enormous volumes of near real-time data, from inside and outside the organization, that has the potential to affect logistics results. From inventory levels and customer order history to local weather predictions and current fuel costs, modern logistics teams have access to all the information they need to optimize their performance.

However, that large data volume also represents a challenge. Human analysts, manual planning processes and spreadsheets are insufficient to manage all that information, let alone translate it into action plans and recommendations.

That's where intelligent decision engines come into play. Enabled by advanced AI and ML – and capable of ingesting virtually unlimited amounts of internal, external and third-party data – decision engines are purpose-built for this kind of analysis. They weigh countless factors that could affect logistics performance, consider intelligent trade-offs and make recommendations with a "good for the network" perspective that goes far beyond functional targets.

From long-term forecasting to daily activities like truck loading and route planning, AI- and ML-enabled decision engines are at the core of logistics digitalization. They give logistics teams the power to react instantaneously and autonomously to inevitable changes and disruptions – without the need for days or weeks of analysis, or teams of human planners.

In today's fast-moving world, there's simply no way to react swiftly enough, or intelligently enough, without the power of decision engines.

Collaboration platforms

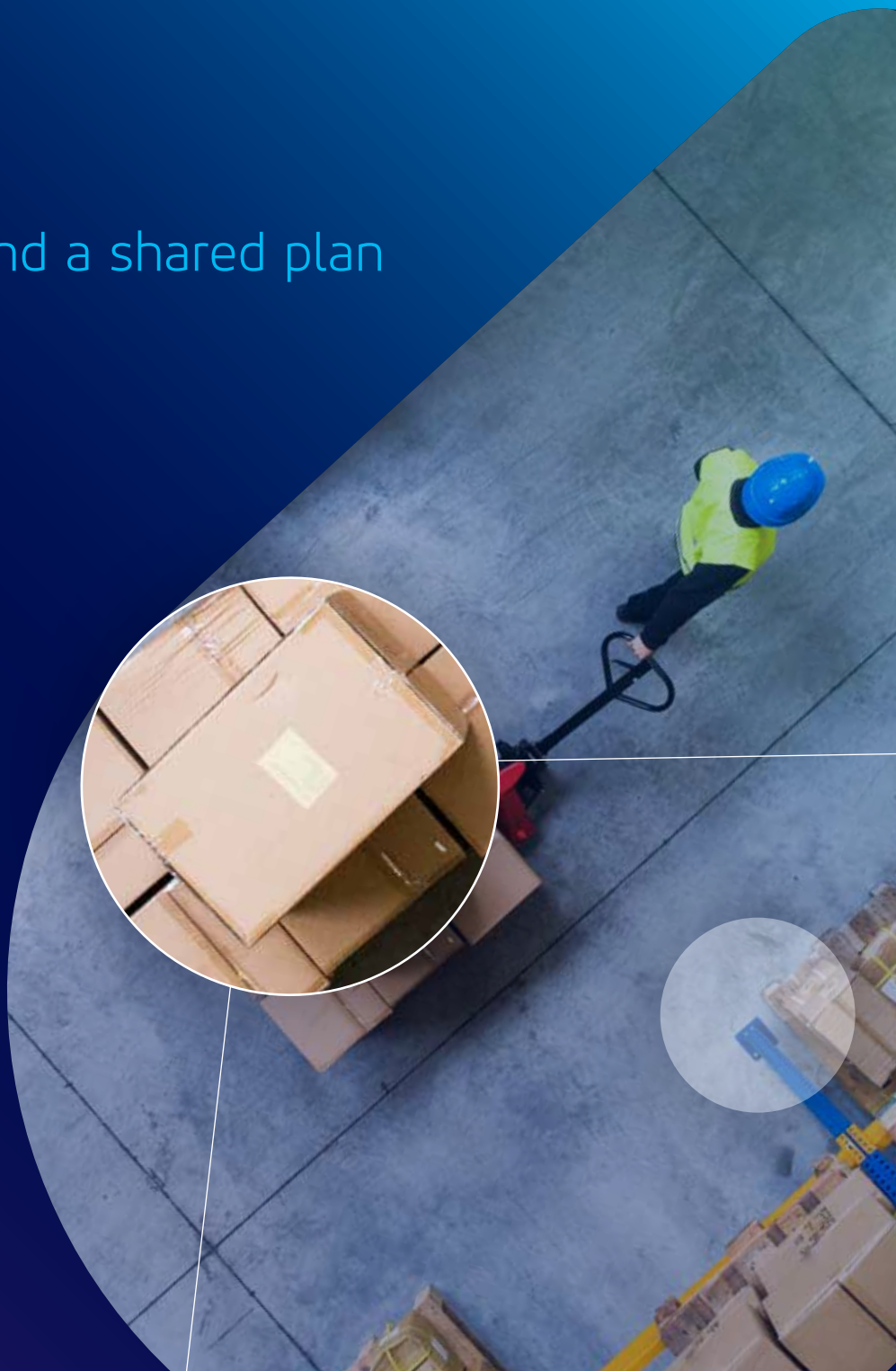
Connecting the network around a shared plan

No disruption takes place in a vacuum. Just as disruptions affect every part of the extended logistics network, the entire network must participate in executing a response that maximizes outcomes for every participant. Gone are the days when an event is merely a "warehouse problem" or a "transportation problem" that must be solved by only that function.

Executing a collaborative, orchestrated response depends on creating real-time connectivity across the network via collaboration platforms. Blind spots, caused when trading partners are unable to see key information such as product location or available-to-promise inventory, must be eliminated. The obvious need to share visibility is steering logistics teams toward commercial networks and platform business models.

Not only do collaboration platforms help re-set the logistics network as disruptions occur, but these platforms also help trading partners work together to optimize freight capacity, labor resources, warehouse space and service levels on a daily basis. Enabled by AI, today's new level of collaboration and connectivity creates a shared focus on maintaining seamless product flow across all nodes.

Near real-time analytics ensure that all logistics activities, across the network, are prioritized strategically. In addition, AI and data science reveal the impacts of each decision on every customer order, creating an environment where all events are unique, yet connected via a digital thread.



Task optimization solutions

Maximizing the efficiency, and accuracy, of daily work

Today's logistics teams are being asked to manage smaller orders, perform more specialized tasks and deliver orders to more locations than ever, faster than ever. Complicating the situation? They must accomplish this profitably, when faced with both scarce labor resources and rising costs.

The only solution is to make every logistics task, from the first mile to the last, as accurate, fast and efficient as possible. Digitalization provides the capabilities to do that.

Advanced technologies make the logistics workforce much more productive by reducing travel times, increasing throughput and capacities, improving fill rates, and maximizing the accuracy of everyday tasks such as picking and load building. Across the logistics network, digital solutions enable a granular, moment-by-moment assessment of labor productivity and task completion. Resources can be strategically re-assigned in real time as conditions change and, over the long term, associates can be coached to achieve continuous improvement.

Similarly, digital solutions ensure that physical assets such as trucks, loading docks and warehouse space are utilized optimally. Keeping up with demand changes and disruptions means constantly adjusting not only staffing levels, but also inventory positions, equipment placement, truck-loading plans and yard management plans.

As conditions evolve, digitization supports a fluid, profitable response across the end-to-end logistics network. Accuracy, speed and efficiency are maximized as human resources, tasks and physical assets are continuously monitored, re-prioritized and re-assigned.

SuperFrio
LOGÍSTICA FRIGORIFICADA

SuperFrio, a leader in refrigerated logistics, achieved a 99.95% picking accuracy rate by replacing manual work and human errors with automation and AI.

Robotics and process automation

Delivering high levels of service, profitably

As labor shortages continue across the logistics sector, robotics and process automation simply make good business sense. By leveraging today's advanced robotics to pick items, transport pallets, load trucks and even deliver goods via autonomous vehicles, logistics teams can drive down costs – while also increasing speed, accuracy, productivity and reliability. As disruptions occur, it is much easier and more cost-effective to scale robotics up and down, compared to the investments required to recruit and train new associates.

An emerging trend is for humans and machines to work together in seamless, fluid ways – where the best resource is chosen for the task at hand, in real time, as conditions change. Leading logistics teams are leveraging robotics, collaborative robots or "cobots," drones, and a variety of automation tools such as picking bots to complement their human capabilities.

Logistics represents a huge cost center for most companies. Both the warehouse of the future and the transportation fleet of the future need to incorporate robotics and automation to deliver high service levels and positive financial outcomes in the face of mounting disruptions, skyrocketing fuel costs and talent shortages.

These advanced technologies must be seamlessly integrated into the synchronized, optimized logistics network where they can create a competitive advantage as supply chain conditions change.

DHL Supply Chain has implemented robotics and automation at 2000 worldwide sites, linking these capabilities directly to the warehouse management system at each facility.

Automated procurement

Controlling costs and building resilience

One of the key challenges of modern logistics is assembling a robust, flexible transportation network that can be scaled cost-effectively as conditions change. Another challenge is seamlessly securing, and paying for, that transportation capacity. As volatility increases, legacy systems and manual processes are insufficient to build a carrier network, analyze all the transportation options in real time and secure the best price.

Again, digitalization provides the answer.

Dynamic price discovery solutions act as a single point of integration for shippers and carriers, replacing tedious manual processes with single-click speed and accuracy. Logistics teams can dynamically access the best freight rates across both contracted and non-contracted carriers, enabling them to procure additional capacity during peak demand periods. By seeing real-time prices – which reflect current demand-and-supply effects – they can make better informed, more profitable tendering decisions.

Digital freight bidding is another powerful tool for balancing service with cost control. By connecting a logistics team with its entire carrier network in near real time, digital freight bidding solutions provide one unified platform for this process, configured to optimize collaboration and communication.

These digital solutions make it easy and seamless for logistics teams to incorporate dozens of carriers into their transportation network.

The obvious benefit is driving down costs through competition. But having a large carrier network also increases resilience. Companies can be assured of having many options as demand ebbs and flows, and as unexpected disruptions continue.

By leveraging digital freight bidding capabilities, companies have reduced their truckload costs by up to 12%, with value realization within 12 weeks enabled by a cloud hosting model.

Introducing First-to-Last-Mile Optimization

Creating real-time synchronization and customer focus from end-to-end

The six advanced technologies outlined in this eBook work together to create a truly digital supply chain. They make logistics networks as seamless as possible, increase collaboration across organizations, and enable both inbound and outbound visibility and control. At Blue Yonder, we have a name for this capability: First-to-Last-Mile Optimization.

Blue Yonder offers the only technology suite that delivers on the promise of First-to-Last-Mile Optimization, incorporating transportation management, warehouse management, and order management – along with the power of Luminate Control Tower and Luminate Platform.

From the first mile to the last, Blue Yonder's advanced solutions enable connection, automation and transparency. No matter how conditions change, Blue Yonder's leading AI, ML, predictive analytics, intelligent decision engines and other capabilities enable the entire logistics network to re-set, both quickly and profitably.

Introducing First-to-Last-Mile Optimization

Mastering the challenge of omni-channel execution

One of the biggest challenges facing logistics teams today is the need to serve and execute across multiple channels. Blue Yonder's First-to-Last-Mile Optimization suite is purpose-built to address this challenge. Solutions in order management, warehouse fulfillment and transportation enable a connected, automated and transparent response to customer needs, across the entire supply chain and throughout the extended partner network.

Advanced solutions from Blue Yonder have the capability to optimize end-to-end order fulfillment and delivery, no matter where orders originate. Intelligent decision engines make strategic trade-offs among all channels, allocating inventory and other resources in a way that maximizes overall cost and service outcomes. Executing across channels is simply beyond the capability of human planners – but Blue Yonder automates this process to ensure both high levels of service and strong profit margins.

Connected, Automated, Transparent

ORDER MANAGEMENT

- Precise inventory availability
- Forward inventory promising
- Increased fill rates
- Balance load across network
- Order Re-allocation
- Visibility for customer order

WAREHOUSE FULFILLMENT

- Labor optimization
- Inventory efficiency
- Capacity balancing
- Reduce manual intervention
- Just-in-time order tasking
- Visibility to available to promise and order release

TRANSPORTATION

- Resource utilization improvement
- Visibility to available to promise
- Automated load capacity/consolidation
- Dynamic route planning
- Last-Mile visibility/tracking

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Envision a more synchronized future with Blue Yonder

Few software providers understand the modern world of logistics like Blue Yonder. We're backed by 30 years of experience, hundreds of successful customer engagements and the industry's leading portfolio of end-to-end solutions. From our proven warehouse management and transportation management systems to our innovative new control tower and platform offerings the Blue Yonder solution footprint is designed to answer evolving logistics challenges.

Blue Yonder has been named a Leader in Gartner's Magic Quadrant for Warehouse Management for 11 years, and a Leader in the Magic Quadrant for Transportation Management for 12 years. This long track record of success is evidence of Blue Yonder's commitment to continuing innovation.

The world of logistics doesn't stand still. So Blue Yonder doesn't stand still.

With over 430 patents – and counting – Blue Yonder has invested more than $1 billion in research and development to identify and apply leading capabilities in AI, ML, analytics, decision support, automation and other areas. Acquisitions have brought special capabilities into the Blue Yonder portfolio, to address emerging needs like e-commerce. And strategic partnerships with like-minded industry leaders, including Microsoft and Snowflake, are aimed at maximizing our customers' return on investment.

> It all adds up to the industry's most complete and advanced portfolio for First-to-Last-Mile Optimization and omni-channel execution.

Discover the Blue Yonder difference today.

ACCEL Logística · americold · ARMADA · AW · C.H. ROBINSON · CJ LOGISTICS · DHL Supply Chain · DSC LOGISTICS · FedEx · GEODIS · KENCO · KUEHNE+NAGEL · loadsmart · MB MARTIN BROWER · NFI · PENSKE · RÖHLIG SUUS LOGISTICS · DB SCHENKER · SCHNEIDER · SuperFrio LOGÍSTICA FRIGORÍFICADA · TRAXION · UNIPART · XPO

BlueYonder

Get in touch with us today to discuss where you are on your digital transformation journey and where you need some help, connecting and synchronising your end-to-end supply chain.

CONTACT US