

LEADERS OF THE PACK

2022
LOGISTICS
PLANNER

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SUPPLY CHAIN 2022 AND THE HITS KEEP COMING



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BITE SIZED SUPPLY CHAIN/LOGISTICS INFORMATION



HIGH LEVEL WORRIES

CEOs worry about supply chain disruption:

- **U.S. CEOs:** Supply chain disruption ranks as their 3rd biggest external concern.
- **CEOs globally:** It ranks 4th.

Most CEOs feel unprepared for supply chain disarray.

- **U.S. CEOs:** Just 27% say they are well-prepared to deal with a global supply chain crisis.
- **CEOs globally:** 29% say they are well-prepared.

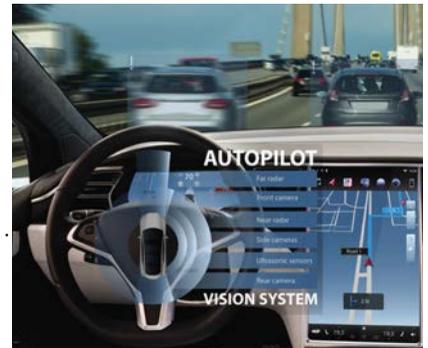
— *The Conference Board, C-Suite Outlook 2022 survey of CEOs and other C-Suite executives*

Hard ACT to Follow

California
Oregon
Washington
New York
New Jersey
Massachusetts

States that have approved the Advanced Clean Truck (ACT) rule, requiring a growing percentage of all medium- and heavy-duty trucks sold to be zero-emission starting in 2025.

Manufacturers must increase their zero-emission truck sales in those states to between 30 and 50% by 2030, and 40 and 75% by 2035.



54 MILLION

Number of autonomous vehicles that will be on U.S. roads by 2024

37%

Estimated growth in the autonomous vehicle market by 2023

— *Thomas Index Report*

“Yes, these are trying times, but this is not necessarily something to be really worried about. We have the best logistics system on the planet. We spend about 10% of our GDP on logistics activities, inventory management, and warehousing. No other country comes close to us.”

— *Madhav Pappu, Professor, Texas A&M University, Business Department*

HOLIDAY RETURNS AND BRUISED SUPPLY CHAINS

Consumers favor retailers who provide quick and painless returns. Retailers need to implement the technology necessary to provide a headache-free shopping experience.

- **61%** of consumers would buy more from a store if the returns experience is guaranteed to be easier.
- **61%** of consumers are expecting the returns process to be more automated to make the experience faster.
- **24%** of consumers say checking inventory availability and pricing via handheld and cart-mounted devices would provide a better in-store experience.

— *SOTI 2021 report*

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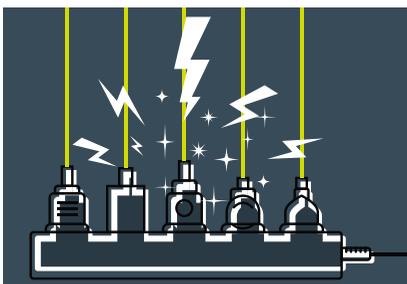


104 SUPPLY CHAIN LESSONS LEARNED: WE WON'T GET FOOLED AGAIN

With three sections covering enterprise-level operations (p. 104), technology (p. 114) and procurement (p. 122), these chart-topping strategies will keep you on track when supply chain challenges spin out of control.

130 9 INNOVATIVE WAYS TO MANAGE AND MEET RETAIL DEMAND SURGES

Supply chain disruptions and other challenges force retailers to find new ways to respond to order spikes, whether they're anticipated or not.



138 2022 SUPPLY CHAIN PREDICTIONS

Use these predictions to play your cards right and beat out everything from limited capacity to skyrocketing material costs.



160 THE (NOT SO) HIDDEN BENEFITS OF INTERMODAL

Sometimes shippers are completely in the dark about intermodal's unique benefits. However, uncovering intermodal can ease capacity challenges and save money on long-haul shipments unburdened by pressing deadlines.

166 HERE'S AN IDEA: 3PLS MANAGE GROWTH THROUGH INNOVATION

With creative thinking and novel solutions, third-party logistics providers support shippers through demand surges, labor shortages, cost increases, and capacity constraints.

174 MANAGING TRANSPORTATION: INSIDER TIPS AND WINNING STRATEGIES

Transportation management has become increasingly complex and challenging. Experts share the steps you can take to reduce costs, mitigate risks, and keep products moving.

182 YOU WEAR IT WELL: WEARABLE TECHNOLOGY HITS THE MARK

Wearable technologies like hands-free barcode scanners and smart glasses are in demand and revolutionizing warehouses. See how logistics providers and customers use them to boost worker safety, improve efficiency, and lower costs.



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Small and mid-sized manufacturers and retailers are killing it in the middle and final miles during the pandemic, thanks to committed relationships with retailers and carriers and optimized data.

198 CARGO SECURITY: HAVE A SAFE TRIP

From exploiting cargo bottlenecks to launching malware attacks, criminals are targeting the supply chain. Here's how to keep your freight—and information—safe.



204 BUILDING CARRIER RELATIONSHIPS THAT WITHSTAND THE STRESS TEST

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222 18 QUICK TIPS FOR 2022

This year may be fraught with the same challenges as 2021, but the *Inbound Logistics* audience has your back. From limiting your SKUs to refining reverse logistics, industry leaders share quick tips to help you navigate with certainty.

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As the pandemic continues to impact supply chains, retailers go shopping for third-party logistics providers to gain end-to-end control.



241 Q&A: TRANSPARENCY BUILDS TRUST

In an exclusive discussion with *Inbound Logistics*, Marty Wadle and Paul Jensen of Ruan reveal the benefits of working with a logistics provider that ensures transparency and aligns with your business objectives.



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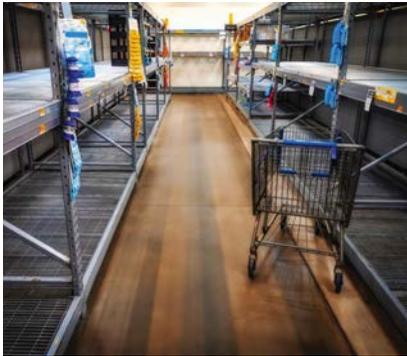
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Grab a warm mug and dig into the latest logistics learnings covering everything from textile supply chain tactics to dominating in the digital age.



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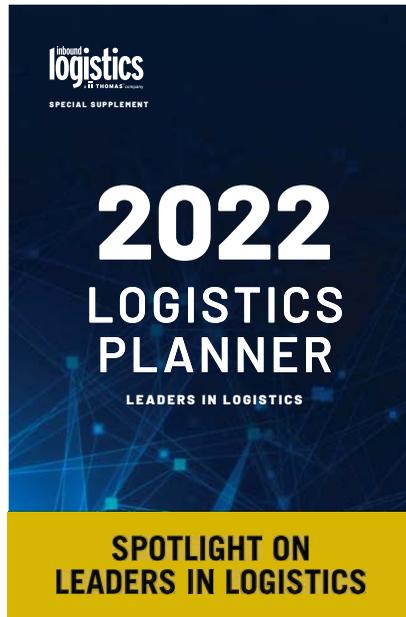
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Alexi Cashen, co-founder of alcoholic beverage distributor Elenteny Imports, drinks up supply chain challenges by staying grounded and communicating with customers with honesty, empathy, and complete transparency.

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By deploying autonomous mobile robots in its Atlanta-area warehouse, automotive equipment specialist Integrated Supply Network increased productivity 266%, boosted employee satisfaction, and kept pace with annual growth.

261 IT TOOLKIT

Paper distributor OVOL USA automated multiple processes and saved time and money by using a transportation management system that suited all its divisions, provided visibility, and offered a straightforward user interface.

265 CASEBOOK

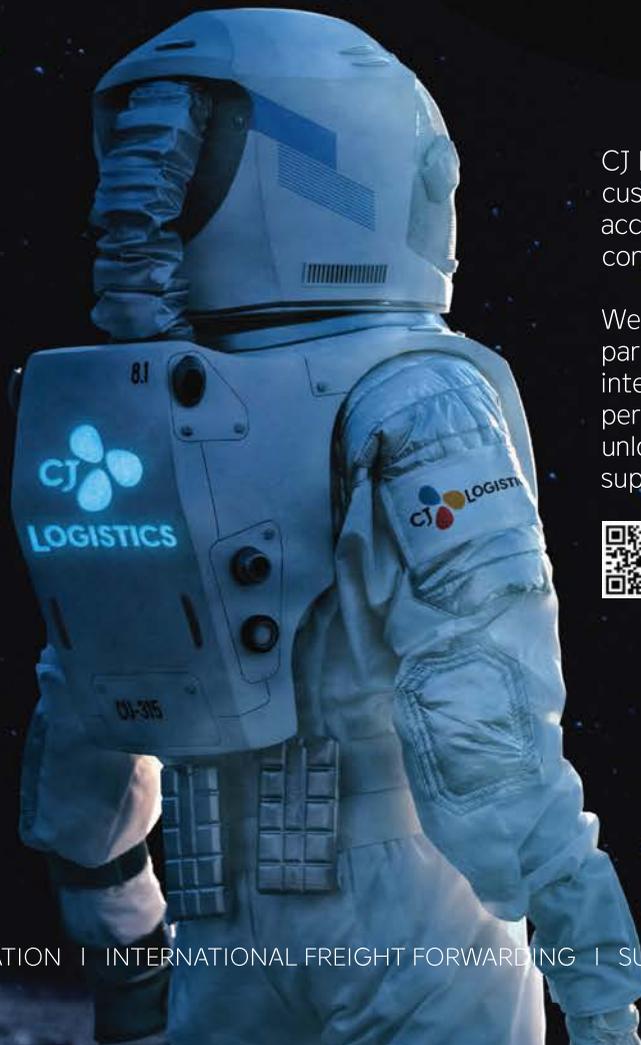
During a period of rapid growth, online grill retailer BBQGrills.com reduced damaged freight claims by more than 75% and lowered shipping costs by working with a logistics services provider for country-wide less-than-truckload services.

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6 REASONS TO CONTROL INBOUND LOGISTICS

One way trade-dependent businesses can mitigate the risk of critical shortages and reduce costs during a disruption such as a pandemic is taking control of inbound logistics. Take a look at six benefits of managing your inbound logistics.

bit.ly/ControllingInbound



THE ROLE OF IoT IN KEEPING VACCINES SAFE

The historic scale of vaccine distribution made the healthcare industry a crucial application for cold chain monitoring solutions. Here are two ways the Internet of Things (IoT) can ensure vaccine safety for COVID-19 and beyond.

bit.ly/IoTVaccineSafety



BUSINESS SURVIVAL DEPENDS ON MANAGING THE 5 V'S

Logistics has shifted from being primarily a back-office function to a boardroom priority. To avoid bankruptcy, C-suite executives must effectively manage the five V's: supply chain visibility, volatility, velocity, vulnerability, and viability.

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CHECKING IN

You Won't Get Fooled Again



Keith Biondo, Publisher

Sometimes a kick in the pants is a step forward. The past two years have certainly been kicking it, and not in a good way for many of you.

Stress of the type we are still going through can be incentive to change business practices. Incremental changes are a normal part of standard business practices. Catastrophic COVID kicks was nothing anyone could have predicted or planned for.

We asked some business leaders in our audience to

describe what it was like:

“A massive broken unpredictable mess.” —Kevin Ledversis, Newcastle Systems

“A never-ending game of whack-a-mole.” —Brian Higgins, managing director, KPMG

“The biggest dumpster fire ever.” —Chris Peckham, vice president of operations, FreightPlus

Yet people in logistics are a resilient bunch and are prone to pivoting privation into process improvements.

“Antiquated processes unearthed significant disruption.” —Michael Hung, CEO, CBX Software

“Opportunity to excel and evolve.” —Bruce Lancaster, CEO, Wilson Electronics

“Everybody's rethinking their supply chain.” —Mark Robinson, president, UPS Capital

“A digital revolution is happening. Massive disruption, wild unpredictability, and sky-high customer expectations have combined to produce a perfect storm for global supply chains. Shippers have no choice but to abandon outdated ways of working.” —Virgil Ferreira, COO, Magaya

We agree with our audience and this edition contains plenty of examples of the motivation to improve on what this “never-ending game of whack-a-mole” has given us.

But it goes beyond that. The cover of this 2022 Logistics Planner edition features an album with the title song: We Won't Get Fooled Again. What that means is the way forward is not just another case of having a specific business operations problem and then finding a solution to address that one-off challenge. That is an outdated static approach. The way forward must be different in that it has to be ongoing and continuous improvement.

Only then, we won't get fooled again. ■

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GOODQUESTION

Readers Weigh In

What is the biggest supply chain lesson you learned from the past two years?

Be bold to embrace change during challenging times. Move quickly and with purpose.

—Kevin Williamson
CEO, RJW Logistics Group

THE FRAGILITY OR BRITTLINESS OF A GLOBAL MARKETPLACE so deeply dependent on just-in-time inventory. Any event, whether a pandemic, hurricane, or a container ship stuck in the Suez Canal, creates immediate disarray. In response, retailers have reverted to “just-in-case” practices, building up large safety stocks. It has become a choice between risking a stock-out or keeping costly excessive inventory. Where is the balance?

—Joe Dagnese
President and CEO
PECO Pallet

SUPPLY CHAIN PROFESSIONALS SHOULD USE THE EXPERIENCES of 2020 and 2021 to take a fresh look at their supply networks, understand their vulnerabilities, and then take the appropriate actions to improve resilience. Doing so can create competitive advantage; failing to do so leaves an opening to the competition. Supply networks may contain potentially crippling risks, and organizations must identify and remediate them.

—Oliver Lemanski
CEO, OnProcess

CLOSE COORDINATION AND SUPPORT throughout every point of the supply chain is the new normal. Disruptions have had a lasting impact on customer confidence. Detail-oriented supply chain management, enhanced customer service, and data-driven inventory decisions are essential to reestablishing a chain of confidence.

—Angela McNally
Vice President, Global Provider
Solutions, Owens & Minor

THE SUPPLY CHAIN IS RIPE FOR INNOVATION. A singular disruption impacts a sequence of events, creating inefficiencies. The positive outcome of this unprecedented market cycle is collaboration across the supply chain

resulting in technology solutions. This improves productivity by getting goods to shelves efficiently on a go-forward basis.

—Blair Blake
VP, Carrier Strategy, Arrive Logistics

I’VE LEARNED NOT TO TAKE CONSISTENT AIR AND OCEAN SUPPLY CHAINS FOR GRANTED. The past two years have been inefficient, making delays commonplace and causing deficits and surpluses of inventory due to increased freight costs. The solution is to stay informed and listen to suppliers, freight forwarders, and consumers.

—Richard Huang
CEO, Cloudious9

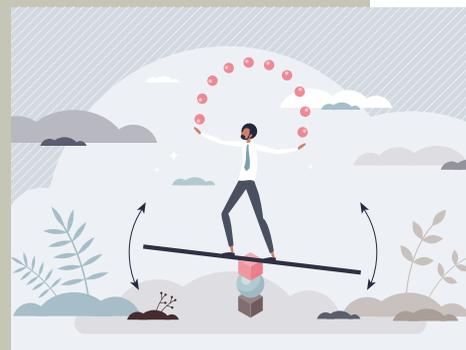
Any Way They Want It

Adaptation is absolutely critical. You have to offer substitutes, source creatively, have a plan B and maybe even C, and be vigilant in getting accurate data.

—Kevin Ledversis
Sales Director, Newcastle Systems

It’s more important than ever to “architect” agility into processes. The growing complexity of supply chains introduces plenty of opportunities for things to go awry. The more shippers can digitize and standardize manual operations, the better equipped you are to pivot when needed and keep shipments moving.

—Virgil Ferreira
COO, Rate Management, Magaya





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GOODQUESTION

What is the biggest supply chain lesson you learned from the past two years?

FLEXIBILITY IN PLANNING beats perfect execution. The market is in flux; the businesses succeeding are the ones adapting to what is being thrown at them. If I've learned anything over the past two years, it's that perfectly planning for the long term doesn't necessarily lead to success.

—Sean Elliott
Chief Technology Officer/
Chief Digital Officer
Körber Supply Chain

OUR RELIANCE ON A FEW KEY PORTS AND JOBS (dock workers and truck drivers) highlighted our supply chain fragility. It only takes one or two bottlenecks to have ramifications and ripple effects throughout the entire economy.

The recent supply chain challenges also demonstrated how critical the ports of Los Angeles and Long Beach are specifically to the United States—these ports are in earthquake-prone regions, and a large earthquake impacting one or both of these ports could make COVID-19 related challenges seem more like a nuisance than a major disruption.

—Megan Linkin
Senior Parametric Nat Cat Underwriter
Swiss Re Corporate Solutions

THE COMPANIES THAT SUCCEED ARE THE ONES THAT COMMUNICATE most effectively. Because there are so many players (vendors, manufacturers, 3PLs, carriers) and software all working together to run a supply chain, the companies that create a common vision, communicate the vision, and hold all parties accountable to the same standard are the ones that have adapted to the pandemic successfully.

—Keith Moore
Chief Product Officer, AutoScheduler.AI

INVENTORY IS NOT NECESSARILY THE "EVIL" that supply chain professionals once thought. Having distributed inventory in strategic locations at an inventory carrying cost that does not burden your balance sheet can be the key to supply chain resiliency and winning.

—Tom Nightingale
CEO, AFS Logistics

With a Little Help from My Friends

The pandemic highlighted the need for a much closer relationship between manufacturers and their 3PL partners. We are working more closely with our partners than ever before—developing innovative and collaborative approaches to tackling these new, longer-term challenges.

—Jim Saponaro
President, Life Sciences & Healthcare, DHL Supply Chain

Relationships now are more important than ever. Whether it's developing partnerships with secondary and tertiary suppliers to meet rising demand, or managing the expectations of vendors and customers during challenging times, the importance of establishing and cultivating strong, lasting relationships cannot be overstated.

—Jonathan Parks
Senior Vice President, Supply Chain, iGPS Logistics

Amateurs hunt dollars, professionals hunt relationships.

—Whit Smith
Director of Operations, TA Services

HAVING THE RIGHT SYSTEMS AND TECHNOLOGY MATTERS. The supply chain changed in a hurry, our systems and technology helped us to adapt quickly with it. We were able to quickly identify obstacles and overcome them. By embracing forward thinking, we were able to limit the impact of supply chain issues.

—Lonny Holston
Export Operations Coordinator, Mickey

TWO THINGS WE HAVE LEARNED: We must: 1) understand data to minimize risk and 2) identify weak spots in the supply chain to improve workflows. Organizations that have met the challenge of the past two years have done so by making calculated investments in technology and processes to limit disruptions.

—Mark Casiano
SVP, Sales, Marketing &
Customer Experience
Odyssey

THE PAST TWO YEARS EXPOSED INFRASTRUCTURE CRACKS in our industry—specifically when looking at effective capacity at ports and

equipment availability. Simply adding more ships and more containers will not get us anywhere if there is not more capacity in the system to receive those containers.

—Nathan Strang
Director,
Ocean Trade Lane Management
Flexport

VISIBILITY IS VITAL. The shortages of raw materials and extended supplier lead times have drastically increased stock-outs. You need complete visibility of 1) inventory indicators to ensure you can meet demand and 2) knowing how well your suppliers perform.

—Ara Alec Ohanian
Group CEO, NETSTOCK

WE NEED TO FULLY DIGITIZE OUR SUPPLY CHAINS if we want them to be resilient in the face of unexpected disruptions. By unifying our digital systems, applications, and processes, we will be able to efficiently manage supply chain operations.

—Antony Francis
Supply Chain and Logistics Consultant
Endava





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GOODQUESTION

What is the biggest supply chain lesson you learned from the past two years?

RETAILERS NEED BETTER

INFORMATION to navigate quickly. As supply chain bottlenecks have impacted every retail touchpoint, winning means knowing your options and what the market is doing. With AI-driven market intelligence, brands can make better and faster decisions to deliver great customer experience and grow revenue.

—Juliana Prather
CMO, EDITED

WE LEARNED HOW TO STAND UP BRAND NEW DISTRIBUTION

OPERATIONS in new markets at warp speed. In some cases, we went from no market presence at all to lease, equipment, and team in place and completely RF-integrated in just three weeks. We also delivered a building five months ahead of schedule.

—Dale Young
Vice President
Warehousing & Distribution
World Distribution Services LLC

THE PANDEMIC is by no means a short-term crisis event. Its impact on the work of people and the functioning of the supply chain in the organization will be long term. Therefore, in order to effectively confront the challenges of the future, the business must increase long-term resilience along the entire supply chain. To do this, supply chains must leverage platforms that offer access to applied analytics, AI, and machine learning solutions, and provide end-to-end transparency.

—Dmitri Fedorchenko
CEO and Co-Founder, Doft

THE RETAIL SUPPLY CHAIN CAN NO LONGER BE PROTECTED

from the impacts of omnichannel. The volume of omnichannel purchases and fulfillment has grown to the point that retailers can't treat it like a rounding error. They must make supply chain strategy and network changes or risk losing their shirt—literally and figuratively.

—Nikki Baird
VP, Retail Innovation
Aptos

Everybody Wants to Rule the World



We need to be able to plan and face the consequences that result from the consolidation trend of brands and businesses. Consolidation has caused massive inefficiencies and created a lack of options due to the absence of competition. Many companies have benefited in the short term from these mergers but do not recognize their role in the supply chain or do not plan accordingly.

This has resulted in practices that can be monopolistic in nature and can have disastrous results in the operation of the chain, especially for smaller brands and product lines. However, big actors, who have actively promoted mergers and consolidations did not realize—maybe until very recently—that their operations are at risk as well. Until these larger groups and brands realize that their practices have affected the overall functioning of the global supply chain, logistic partners need to be prepared for disruptions.

—Eric Gomez
CEO, maxiaNET

THE MOST SURPRISING LESSON I LEARNED

was how much the supply chain relies on commercial uplift. The airlines fly passengers all over, and airline companies reserve space for cargo on commercial flights.

We saw firsthand how much companies relied on airplanes, so when the pandemic hit, and there were fewer flights happening, that contributed to the bogged down supply chain. As more passenger flights come back, that has the potential to ease supply chain challenges.

—Dustin Hansen
CEO, InXpress

THE MAGNITUDE OF DISRUPTIONS

supply chains faced over the past two years demand rapid innovation. The world around us has changed fundamentally, so legacy systems and their outdated approaches no longer serve supply chains well.

Adapting an adage, futility is doing the same things and expecting the same results, even when the underlying assumptions have shifted. Supply chain leaders who have digitally transformed their organizations are the ones positioned to address emerging trends, mitigate risk, and identify new opportunities.

—Polly Mitchell-Guthrie
VP, Industry Outreach and
Thought Leadership, Kinaxis

Have a great answer to a good question?

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What's the difference between traceability and transparency in the supply chain?

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MUNCH ON THIS



Frank Mullens @FrankMullens
 Tequila lime grilled chicken and veggie bowl with @ILMagazine's Expedited Transport: Quick Tips. "How to keep freight moving when it seems like the whole world is conspiring to slow it down."

IN THE HEADLINES

"Supply chain" went from relative obscurity to an everyday term due to global delays. When it works well, it's not a concern or trending topic. It's fantastic people are more aware of the industry, and I look forward to the day supply chain doesn't need to be a top headline.

-Lindsey Shellman

Chief Commercial Officer, Centerboard



Empty produce shelves at Stop & Shop in Orangeburg, New York, grab shoppers' attention on January 16, 2022.

Photo: Pin Arabe

TRUCKER PERSPECTIVE View from the Port of Houston

I see all kinds of bureaucracy in transportation these days that limits our effectiveness. We have warehouses scheduling the arrival of empty containers for export so we have *one day* to get the empty there.

If that day is missed (which could be 7 days before cargo cutoff back at the vessel) the warehouse tells the shipper that the cargo has to roll to another vessel. This starts the ongoing avalanche of emails to reset and possibly rebook to another shipping line.

For decades there has been a small window to drop empties on; this "one day" is detrimental to overcoming the daily challenges in the import/export market.

At the Port of Houston, we have an incredible amount of inefficiency on drayage these days. Here are the facts as they exist today from the trucker experience:

- Sometimes we show up with a load for a vessel that the computer shows

"receiving" but when we get there it has changed (due to forwarder, shipper, ship line, or port) and we have to leave with the load and take it back someplace to hold it.

- The rebooking process is supposed to take a few hours—but it takes days, and some export loads are loaded and sitting in containers on chassis for 4+ weeks because of inefficiencies in rebooking and moving targets of the ship line.

- Sometimes a vessel "opens up for receiving" in the computer in the middle of the morning, and also the last day to receive (cutoff) is the same day. So it's a sudden scramble to get all loads in; all the trucks are sitting in the same areas in the ports waiting for cranes.

There isn't much the Department of Transportation/Washington, D.C. can do to fix these things except get out of the way by suspending any regulations that can be suspended without causing immediate harm.

-Danny R. Schnautz

Clark Freight Lines

Via email, November 17, 2021

Re. Good Question: How would you summarize the supply chain in 2021 in five words?

bit.ly/GQ_SCin5words

Gloom, despair, agony on me.

-Brian C. Gaffney
 Supply Chain Specialist
 Natural Fiber Welding

There is no reset button. Historically high container shipping rates, meet historically low service levels. While logistics networks could have performed better in 2021, things couldn't have gotten much worse. Shippers and logistics service providers need to take a hard look at the processes and flow of information between supply chain partners.

-Matt Gumm
 VP Solutions Marketing, Slync.io

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10 TIPS

Deploying a Robotics System

Automation is necessary to meet customer demand and companies have no other option but to deploy these technologies in their warehouses and fulfillment centers to remain competitive now and in the future. Here are 10 suggestions to help you get started.

1 UNDERSTAND THE CURRENT BASELINE.

What are the facility's operating parameters today? Gather one year's worth of performance metrics to understand where the transformation to robotics is starting from. This is a valuable input to the robotics solutioning design efforts and gives you a way to determine the business value of the potential outcomes robotics enables.



PHOTO: GREYORANGE

2 EVALUATE AND GROW TO UNDERSTAND THE ROBOTICS MARKET.

Different suppliers provide very different robotics solutions to address various business use cases. Do the research (third-party market reports are best) to understand which vendors should be on your short list for evaluation. Do you need a robotics AS/RS, goods-to-person, mobile sortation, or co-bot strategy?

3 CONSIDER HOW YOUR SUPPLY CHAIN WILL EVOLVE IN THE SHORT TERM.

Are you supporting multiple channels from the warehouse/DC? How is the balance between those channels changing? Will you ship more units versus cases in the future? Omnichannel fulfillment and the evolution of that strategy should strongly influence your evaluation of robotics.

4 UNDERSTAND YOUR INTEGRATION STRATEGY.

Software application integration is typically on the critical path for implementing a robotics solution strategy. Understand which robotics vendors have already integrated their control systems software into your warehouse management system or ERP solution.

5 SELECT YOUR ROBOTICS VENDOR CAREFULLY.

Most robotics companies are small and may not have done a project in your specific industry segment. Understand the actual experience they bring to the transformational program for your warehouse/DC.

6 MAKE SURE YOUR PEOPLE ARE READY.

From hourly associates to senior executives, the change in both thinking and execution is substantial. An effective change management

program is critical to the project's success.

7 SELECT A STABLE VENDOR.

Understand the viability of the robotics vendor you partner with. Mergers, IPOs, and acquisitions are common in the robotics vendor community today. Will the vendor you are considering be around in three years to continue your partnership?

8 DETERMINE STAKEHOLDERS.

Think about who inside your company should "own" robotics in fulfillment. Is this a supply chain operations function? Is this an IT function?

Is this an engineering function? The answer varies from one company to the next depending on how they envision the utilization of robotics in fulfillment and how they see it scaling in the future.

9 CREATE A BUSINESS CASE FOR ROBOTICS INVESTMENT.

Unify on the vision for what capabilities robotics are enabling. Define this vision using the same metrics you operate with today to create a way to define accountability for success of the program. Evaluate throughput enhancements and labor reduction in the context of the robotics solution.

10 THINK ABOUT THE LONG TERM.

As the value proposition continues to improve for robotics, how will your strategy evolve and be fully integrated? Think about the warehouse execution software and its ability to support multiple robots from multiple suppliers over time.

SOURCE: JOHN SEIDL, PARTNER, GREYORANGE



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WHAT'S THE WORD

The Language of Logistics

Upstream

vs.

Downstream

Some organizations divide the supply chain into two parts to simplify management: upstream and downstream.

- The **upstream supply chain** includes all activities related to the organization's suppliers, which source raw material inputs to send to the manufacturer.
- The **downstream supply chain** refers to activities post-manufacturing, namely distributing the product to the final customer.

Downstream supply chain can also be thought of as the "demand" while upstream supply chain is the "supply." Supply chain managers seek to balance demand and supply to make sure there are no lost sales, inventory shortages, or over-ordering. Supply chain inefficiencies can waste up to 25% of operating costs, so matching supply and demand is of paramount importance.

Delineating upstream vs. downstream portions of the supply chain can help supply chain managers get a handle on three main flows—materials, money, and information—that happen in the creation and distribution of a product.

SAY WHAT?

Shelf accuracy

Refers to end-to-end supply chain efficiency that culminates with what's available on the store shelf. While identifying on-shelf availability is critical to keeping shoppers satisfied, retailers can't rely on point-of-sale data alone to understand inventory levels. Shelf accuracy is impacted by any number of events that happen along the way, which is why it's important retailers have AI-driven, real-time insights to provide a holistic view of inventory.

—PATTY McDONALD

Global Solution Marketing Director, Symphony RetailAI



PHOTO: ALYSSA JOY TUMBOKON

WHAT'S THE DIFFERENCE BETWEEN LOGISTICS AND SUPPLY CHAIN?



Logistics can be described as the legs of the overarching supply chain body. Running is good, but running at the right speed in the right direction at the right time is what makes a great supply chain.

—CHRISTINA VALI

Director of Client Solutions, Teccsys



Supply chain encompasses the end-to-end process; logistics executes the plan. Here's an analogy: In chess, the supply chain includes finding a partner, scheduling the game, securing the gameboard, and planning your opening move. Logistics entails the physical movement of pieces to win. Logistics without the view of the supply chain is a loss.

—JEREMY TANCREDI

Partner, Operations Excellence/Supply Chain, West Monroe



Think of a rideshare app. The app itself is the supply chain. It processes requests, sources drivers, plans trips, and ensures riders arrive at their destinations. The driver physically moves the rider from point A to point B. That's logistics.

—SAM LURYE

CEO and Founder, Kargo

SUPPLY CHAIN SURFACE AREAS

These are the sum of all the products, processes, and networks that compose the supply chain and represent touchpoints that can be affected by risk events, according to Gartner, Inc.

"Chief supply chain officers should reduce the surface areas of their supply chains by simplifying processes, reducing movement within their supply chains, and reducing the number of sites and suppliers that compose their networks. With a higher cadence of risk event, a smaller surface area is an asset, a large surface a major liability."

—SUZIE PETRUSIC, Director, Research, Supply Chain Practice, Gartner

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Consumer Packaged Goods



GREEN THINGS COME IN SMALL PACKAGES

The Sustainability Consortium, a global nonprofit focused on transforming the consumer goods industry, formed a new recycling coalition to address small-format packaging, which is commonly used in cosmetics and food supply chains.

Small-format packaging consists of items such as beverage bottle caps, lip balms, travel-size shampoo bottles, and other small packaging components that are unrecyclable in most curbside recycling programs due to the size of the screens used for sorting.

Consequently, most small-format items end up in landfills or become litter, rather than being repurposed in other products through a circular path.

The recycling coalition includes nonprofits, universities, and companies such as P&G, Burt's Bees, and Colgate-Palmolive. Its aim is to improve circularity for small-format packaging of all material types through collective, science-based projects.

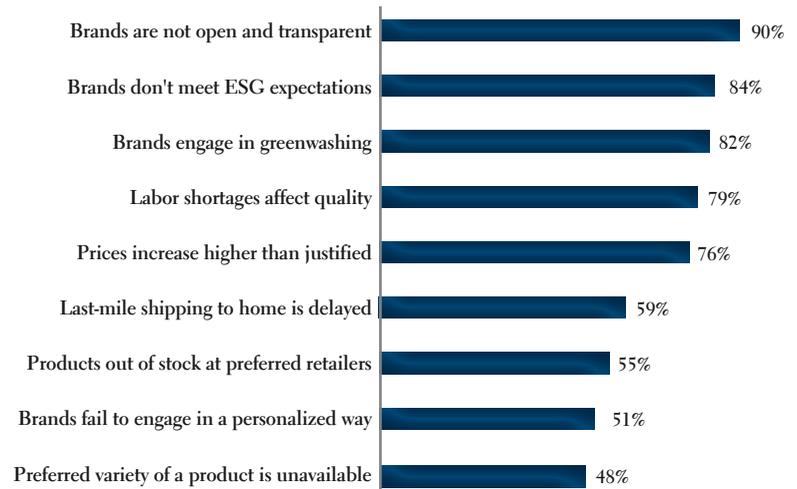
The coalition will perform a study involving a projection of the scale of collection to estimate economic value, and testing secondary sortation technologies. The findings will help create tools that can be used globally to create a more circular supply chain for small consumer products.

CONSUMER LOYALTY IS BUILT ON TRUST

Most executives say they're investing significantly to prevent trust erosion on multiple fronts (see *chart*), a Deloitte report says, and it's not hard to see why: 95% of consumer product companies that have high consumer trust are more resilient. Here are three things consumer product brands should keep in mind when it comes to maintaining trust, the report says:

- 1. Supply chain issues result in stockouts.** Stockouts break the inherent promise of reliable availability and hurt perceptions of competence—not just of retailers but also of brands themselves.
- 2. Labor shortages reduce production and, in some cases, affect quality and service levels, further harming a brand's perceived ability to deliver on its promises.** Workers who don't trust a company to create a sense of belonging are also unlikely to accept job offers or stay.
- 3. Rising prices that increase beyond what consumers view as justified break the promise of a fair deal.** The intent and motive of the brand comes into question.

EXECUTIVES SAY CONSUMERS LOSE TRUST IN BRANDS WHEN...



Source: Deloitte 2022 Consumer Products Industry Outlook Survey

LEADING CONSUMER PRODUCT BRANDS WILL WORK TO BUILD TRUST IN THREE PRIMARY WAYS IN 2022:

- 1. INCREASE TRANSPARENCY**
- 2. EXPAND DIGITAL ENGAGEMENT**
- 3. INVEST IN THE FUTURE OF WORK**

— Deloitte



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Consumer Packaged Goods



PENNEY FOR YOUR E-COMMERCE STRATEGY?

Like many department stores such as Neiman Marcus and Sears, J.C. Penney filed for bankruptcy during the pandemic. However, the decades-old American mall mainstay is getting more adaptable, says a *Chain Store Age* report. Some of its recent e-commerce upgrades include:

New fulfillment options: J.C. Penney expanded its curbside pickup and buy-online-pickup-in-store services by partnering with on-demand delivery platform DoorDash to offer same-day delivery from more than 600 stores. Shoppers can browse and order items such as makeup, skincare, fragrance, and haircare, as well as home goods, via the DoorDash mobile app or e-commerce site.

Smart predictive technology: To better understand how online shoppers make their purchase decisions, the retailer is using artificial intelligence technology from Metrical to streamline its digital customer experience. Since deploying the platform, J.C. Penney saw an 18% reduction in cart abandonment.

Tech-focused hires: Former Gap and Walmart executive Sharmeelee Bala joined the company as its chief information officer, responsible for the technology systems that support its stores and supply chain. Bala will help combine J.C. Penney's physical assets with its digital footprint. Katie Mullen, previously with Neiman Marcus, was named chief digital and transformation officer and will lead the growth of its e-commerce business.

The appointments come shortly after Marc Rosen, who previously drove digital strategy at Levi Strauss and global e-commerce at Walmart, was named Penney's chief executive officer in October 2021.

THE GROCERY STORE OF THE FUTURE

With the explosion of food delivery and contactless checkout, grocery stores offer a more seamless shopper experience across digital and physical interactions, with an emphasis on data collection and efficiency across the supply chain. Here's what your trip to the grocery store will look like in two years, says a CB Insights report:



Text-based customer service. Phones and chat-based service options, such as Albertsons' live chat for online grocery support and ShopRite's registered dietitian chat, will be essential resources for grocery shopping.

Virtual and robotic kitchens. Virtual kitchens and robotic tools will gain traction. For example, Kroger partnered with delivery-only restaurant ClusterTruck to trial fresh meals for delivery, DoorDash acquired robotic salad maker Chowbotics, and grocery platform Ocado invested in made-to-order meals robot provider Karakuri.

Micro-fulfillment. As online grocery shopping grows, making fulfillment profitable is key. The micro-fulfillment market is projected to grow 10 times in the next four years, with Walmart already adding automated micro-fulfillment to several stores.

Sustainable packaging. Attention to reusable packaging reached an all-time high in 2020, aided by the EU's ban on a variety of single-use plastics. Consumer product giants assert sustainable packaging commitments: P&G introduced refillable aluminum shampoo bottles, and Nestlé piloted in-store dispensers for pet food.

Cashierless self-checkout. Contactless payment will take over. Brands such as Dollar General already offer buy-online-pickup-in-store options. Just-walk-out technology has also spread among Kroger, 7-Eleven, Circle K, and Giant Eagle.

CLOUDY WITH A CHANCE OF INTELLIGENT INVENTORY

As consumer demand pushes retailers and consumer goods manufacturers to their limits, a new software-as-a-service solution can help them better anticipate demand surges.



SAS collaborated with Microsoft to create the SAS Cloud for Intelligent Planning. Available on Microsoft Azure, the solution predicts demand signals including when, where, and how sales will happen. With the benefits of the cloud, retailers can access timely data, increasing supply chain transparency and reducing the time it takes to complete a forecast.

The artificial intelligence creates self-tuning plans and makes sure the right products are in the right place at the right time, provides short-term demand sensing that turns consumer insight into action, and displays forecasts on any device.

By using comprehensive shopper data, the software recommends balanced, profitable commercial plans across a retailer's channels and customers. Automated with machine learning, the cloud offering is always up to date. That means better on-shelf availability and a maximum return on investment for inventory dollars.



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READERPROFILE *as told to Karen Kroll*

Honed for the Holidays



MICHAEL SHAUGHNESSY is senior vice president, supply chain, operations, and emerging markets, with Balsam Brands, which designs and offers home décor, including under its flagship brand, Balsam Hill.

RESPONSIBILITIES: Lead outbound customer logistics, reverse logistics planning, ocean freight selection and negotiation, international warehousing and fulfillment operations, and customer service.

EDUCATION: MBA, Tuck School of Business, Dartmouth College; Professional Studies, U.S. Air Force Air Command and Staff College; B.S., Electrical Engineering, University of Massachusetts, Amherst.

EXPERIENCE: Principal, BDD, Inc.; president and CEO, Cold Chain LLC; lt. colonel; U.S. Air Force and Idaho Air National Guard; Air Force officer; regional business development manager, EnerNOC; director of finance, Willowview Consulting; investment management professional, Goldman Sachs & Co., co-founder, captain/pilot, assistant director of operations ESAir; naval officer.

In my role leading an e-commerce company's supply chain organization, I tell my team we need to do three things: First, ensure when someone hits buy, our products show up on their doorstep. Second, receive on time the products our partners manufactured for us—a huge challenge now. And third, manage costs so we're efficient and predictable. In 2021, that has also been difficult.

On top of that, our goods are seasonal, and essentially perishable. Christmas décor needs to arrive by Christmas. There also are a lot of traditions and emotion tied to the holidays. We have to give our customers the best information possible.

To get there, I've worked with my team to come up with creative ways to manage amid the recent disruptions. We partnered with customer service and merchandising to set customers' expectations.

"We try to be good partners with our carriers. By maintaining strong relationships, our carriers will think of us first when they have additional capacity."

We try to be good partners with our carriers. For instance, we shifted our schedules to align with the times our outbound carriers are less busy. By maintaining strong relationships, our carriers will think of us first when they have additional capacity.

We outgrew our order management system and are shifting to a new one. While there is never a great time to implement a new system, this will allow us to scale without adding headcount.

Some people plan every step of their careers, but I think you have to be willing to take the journey. One thing leads to another and you follow the kernels of popcorn on the ground.

My dad was an electrical contractor and I've always been interested in electrical things, so electrical engineering was a natural course of study for me. And a lot of work in the military is engineering-based, while much of flying involves math.

My 23 years in the military, where I flew for the Navy and the Air Force, was a formative experience. Business situations, no matter how crazy they get, usually don't carry the same sense of gravity.

When I returned from my last tour in Iraq, I thought about a different career path. I studied finance and worked for a Wall Street firm throughout the financial crisis. Then, I decided I would rather be involved in making things and using my

analytical side to solve the next challenge. I also like leading teams.

I was offered a position to run the supply chain and operations for Balsam Hill's international business. It has been great. Our offices are in Boise, which has become a vibrant city, and Balsam Hill has a growing presence. My role also suits my background, as so much in the military is about timing and movement.

Since I've been with Balsam Hill, revenue has grown about seven times. I joined an office that had 10 people and I did a lot of everything, like managing back-end IT systems. Eight years later, we've added about 60 employees and have a chief technology officer. I provide input but my role is more strategic. I think about future growth and make sure operations run efficiently.

My team at Balsam Hill is a smart, exceptional group and we've become like family. Even though the company has grown, we're still small enough to know everyone. ■

Michael Shaughnessy Answers the Big Questions

1 What activity has made you better in your job?

I'm an avid skier and my daughter is a ski racer. Years ago, I was president of the largest ski club in the northeastern United States, with more than 1,000 members. It was an amazing opportunity and taught me the foundations of management.

2 What event, from any time in history, would you like to have witnessed?

The second Yalta Conference, when U.S. President Franklin Roosevelt, British Prime Minister Winston Churchill, and Soviet Union Premier Joseph Stalin divided up Europe and the Mideast. They had to make decisions quickly and created both some of the discord and much of the harmony we see today.

3 How would you describe your approach to life?

To be thankful. I've seen some awful things, such as people who were displaced and live in abysmal conditions. While people have challenges in the United States, it's truly amazing.

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LEADERSHIP

Conversations with the Captains of Industry

Getting into the Spirits



Alexi Cashen
Co-founder and CEO
Elenteny Imports

Alexi Cashen drinks up supply chain challenges by staying centered, and listening and talking to customers with honesty, empathy, and complete transparency.

by Merrill Douglas

Companies that import wine, beer, or spirits into the United States face all the challenges COVID-19 has unleashed on the global supply chain—tight capacity, congested ports, and the rest. And if that weren't bad enough, wine companies also face extra supply woes apart from the pandemic.

"There have been tremendous shortages, predominantly due to weather events, both in Europe and in the United States," says Alexi Cashen, co-founder and "chief executive optimist" (CEO) at Elenteny Imports, a New York-based provider of logistics solutions to the alcoholic beverage industry. Hot summers and wildfires have produced hard times for some recent vintages.

We sat with Cashen to discuss how Elenteny helps its customers in this difficult era, learn about her leadership approach, and hear about some of her other ventures.

IL: What led you to co-found Elenteny Imports?

As a new college graduate working in the restaurant industry, I loved learning about wine. When I moved to New York, I soon started working in sales for a wine supplier and then a wine wholesaler. Because New York is such a multicultural city, it provided a great opportunity to try wines from many regions and learn how the industry works.

My foray into entrepreneurship started when I met Tim Elenteny, who had an idea to provide freight forwarding, logistics, and distribution services to the beverage industry. I was drawn to the idea, and we became co-founders in 2010.

IL: What's one important lesson you learned early in your career that has helped to shape you as a leader?

I recently read a quote from *The Tao of Leadership*: "The wise leader stays centered and grounded and uses the least force required to act effectively." Early in my career as a leader, I was sometimes afraid of something—losing a customer, or not training an employee fast enough. Because of that fear, I would keep doing things myself. I forced my energy, expectations, or the relationship's outcome with a customer or vendor.

I have learned to become more centered, to ground myself, act more effectively, and force things less. As a leader, you have to be aware of your emotions, allow yourself to pause and say, "I don't have an answer. I need to think about that." Then you can come back to conversations in an authentic way, leading with empathy and honesty.

IL: How is Elenteny helping customers with challenges such as supply shortages, congestion, and volatile demand?

The biggest thing is to do what we do best, provide service. As experts, we're focused on this industry's situation 24/7, constantly looking for new ways to strengthen our position during this challenging phase.

We also emphasize transparency. The delays are terrible, and we often have to bring our customers bad news. But we're transparent about how things look, how long they're taking, and what factors are involved. This kind of context allows our customers to manage.

IL: How do you spend a typical workday?

I'm on the West Coast, Elenteny is on the East Coast, and we have customers we talk to in Europe. I also have three kids. So there's a lot of crucial early-morning activity. I commit chunks of my day to e-mail and other forms of communication.

I'm protective of screenless time when I need to think, be with a customer, or engage in a marketplace in some way, whether through conferences or other leadership activities. I draw so much from that face-to-face interaction. Making good decisions for my business starts with listening and talking to lots of people, particularly my customers and employees.

IL: What's your leadership style?

I'm optimistic and positive by nature, and I'm very curious. I'm not the type of leader who jumps in and solves problems. I try to temper my voice in conversation with our managers—for example, by asking what would happen if I don't make the call and let one of our managers problem solve on their own.

IL: What makes you excited to go to work in the morning?

I like to be of use, and so I love that Elenteny is a very useful company. We help customers make their businesses perform greater and scale faster. And we allow our employees to grow as individuals and professionals.

IL: What's the hardest aspect of your job?

It's living with the risks inherently involved in business ownership. It's just you holding the bag, making the decisions, and navigating the risks and vulnerabilities.

St. Hildie and the Coach

You'd think running a logistics company would keep Alexi Cashen busy enough. But Cashen has somehow also found time to launch a new beverage brand, St. Hildie's Spiked Tincture Tonics, with two partners, Christine Peck and Meghan Deroma.

Named for the 12th century mystic Saint Hildegard of Bingen, St. Hildie's combines alcohol, fruit juice, and herbal extracts to make a bubbly, canned beverage that Cashen calls "a better-for-you booze option."

The new drinks, which currently come in three flavors, have become Cashen's own go-to refresher at the end of the day. "They are delicious and lower in alcohol," she says. Consumers can buy them in stores in California and on the company's e-commerce site.

Cashen also serves as a coach to fellow entrepreneurs, working in the Accelerator Program run by the San Francisco chapter of the Entrepreneur's Organization. The goal is to help business owners reach \$1 million in revenues, and Cashen especially enjoys working with women toward that end.

"More than 50% of U.S. businesses are owned by women, but fewer than 1% of those businesses surpass revenues of \$1 million," she says. "There's a real disparity there."

Cashen hopes to help close that gap.

IL: If you could trade places for a day with anyone, alive or from history, who would that be?

Georgia O'Keeffe. I'm no painter, but I love and admire the arts, and she was such an inspiring woman. I also deeply love her region, the Southwest, having grown up in Western Colorado.

IL: Why did you create "The Alexi Cashen Podcast"?

I first thought of podcasting as an opportunity to promote my business and engage with a community. But now that I've been doing it for two years, it has given me a deeper sense of the industry. I don't know that I would have talked to those people, or had the same depth of conversations, if it had just been me as CEO of Elenteny trying to get a meeting with those people.

IL: How do you like to relax at the end of a workday?

Cooking helps me de-stress and unplug. Being in the beverage industry my entire career, I almost always know what wine to pair with dinner when I cook for my family every night. ■

[IN FOCUS]

NOTED

The Supply Chain in Brief

> GOOD WORKS

► **Sunset Transportation** volunteers worked with the Greater St. Louis Area Boy Scouts, scout leaders, and parents to execute Scouting for Food, the largest one-day food drive in the United States. The 2021 event was the most successful since 2016, collecting 653,026 pounds of donated food in one day.

• **SEKO Logistics** is partnering with retail services client Buyer Connected to launch a new logistics training program to create employment opportunities for previously incarcerated men and women in Atlanta, Georgia, as part of the not-for-profit City of Refuge initiative. The two-week program helps recently released, non-violent offenders re-enter the workplace and begin successful careers.

• **Realterm's** Europe Logistics Fund facilitated the donation of 86 decommissioned solar panels to Paam Laafi Hospital in West Africa, which houses 120 beds for patient care. Local power is expensive and unreliable, occasionally going out for more than 24 hours. Given the sun-drenched terrain, solar energy is an efficient and stable way to provide power to the hospital.

• **Lineage Logistics** launched the Lineage Foundation for Good, an independent nonprofit aimed at reducing food waste and fighting food insecurity. About 30% of temperature-controlled food products in the United States travel through the Lineage warehouse network, allowing the company to identify and facilitate donations of items that may have gone to waste.

• When many Afghan refugees were taken to the Dulles Expo Center in Virginia for quarantine and processing, area residents dropped off donations of clothing, diapers, and other essentials. The **American Trucking Associations** helped deliver the donations where they were needed as the refugees relocated to U.S. military bases.



> RECOGNITION

• Logistics company **ArcBest** and its chief executive officer **Judy R. McReynolds** have been recognized by brand reputation platform Comparably. ArcBest received the **Best Company for Women** award, which is chosen based on feedback from female employees, and McReynolds earned the **Best CEO** award.

• **Arlin Keck**, an engineer at Steel King Industries, a manufacturer of storage rack and materials handling products, has received the **Material Handling Education Foundation's Exceptional Contribution Award**. The award honors Keck's extraordinary contributions to engineering standards for storage materials across the industry.

• The Containerization & Intermodal Institute presented the **2021 Connie Award to Eugene D. Seroka**, executive director of the Port of Los Angeles, for leading the port's response to the pandemic and keeping cargo flowing as an essential service.

• Global logistics company **Ascent** was named a top-performing supplier at **Ford's World Excellence Awards** in the Create Must-Have Products category for providing excellent just-in-time services during 2021's disruption.



◀ Along with other landmarks around the globe, a **ZIM Qingdao** container ship displayed purple lights while docked in the Port of Haifa, Israel, to help create global awareness for the International Day for Persons with Disabilities.



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> SEALED DEALS



▲ Athletic performance brand **Under Armour** is rolling out **Nedap's iD Cloud** inventory visibility platform throughout 400 of its owned and operated stores across the globe. The goal is to achieve accurate stock visibility in its retail stores, optimizing item availability and enhancing real-time inventory visibility.

• Beauty retailer **Sephora** selected same-day delivery platform **Delivery Solutions** to enable on-demand fulfillment for online shoppers in the United States and Canada. The platform provides access to a network of same-day delivery providers, including independent contractors and major parcel delivery services. It also provides e-commerce delivery intelligence while consumers browse, post-purchase tracking, and communication.

• **E2open** and automotive manufacturer **Jaguar Land Rover** expanded their multi-year partnership to help address supply chain issues in the automotive industry. In addition to E2open's multi-enterprise inventory optimization, Jaguar Land Rover will benefit from its unified platform to optimize safety stocks and improve collaboration, supply chain performance, and stability for suppliers.



▲ **Vestas'** wind farms across the United States and Canada will be managed by **Hellmann Worldwide Logistics**, operating from a new 130,000-square-foot warehouse in Houston, Texas. Hellmann will manage the time-critical supply of spare parts and components, including inventory management, kitting, and load consolidation as well as pick, pack, and ship operations.

• **Master Electronics**, a global distributor of electronics components, will deploy **Swisslog's** warehouse automation solution to streamline fulfillment in its existing warehouse. The system brings together AutoStore and picking stations, optimized by Swisslog's SynQ software. Its bins are electrostatic discharge compliant to protect Master's sensitive inventory from static electric discharge.

• Healthcare company **Roche Pharma France** selected **Arvato Supply Chain Solutions** as its logistics service provider. Arvato will handle warehousing and fulfillment as well as the distribution of pharmaceutical products throughout France, including the French overseas territories. Its solution covers all pharmaceutical logistics requirements in both ambient and cold temperature ranges.

> UP THE CHAIN

• **Beyond Meat** hired **Doug Ramsey**, who oversaw Tyson's poultry and McDonald's businesses, as its chief operations officer and **Bernie Adcock** as its chief supply chain officer. The two 30-year Tyson Foods veterans will help Beyond Meat expand into retail and food service in the United States and abroad.

• **ShipBob** hired **Harshal Wanjari** as its chief technology officer. Harshal brings more than 20 years of experience in product development leadership roles, spending the past nine years at Amazon, including Amazon Grocery and Amazon Middle Mile Logistics.

• Household appliance e-commerce company **Goedeker** appointed **Mike Barry** as its director of home delivery. Barry comes to Goedeker with more than two decades of experience building and managing supply chain, transportation, and distribution operations, holding senior roles at several logistics companies such as Pilot Furniture Direct and Last Mile Home.

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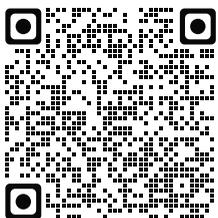
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> SHOVEL READY



▲ **Walmart** plans to open its first fulfillment center in Salt Lake City, Utah, to support its growing e-commerce fulfillment network. The 1 million-square-foot facility, set to open in 2022, will fulfill online orders and add more capacity to the retailer's supply chain.

■ **Toyota** is opening an automotive battery plant in North Carolina's Greensboro-Randolph megasite. The manufacturing plant, set to open in 2025, will have four production lines, each capable of delivering enough lithium-ion batteries for 200,000 hybrid and electric vehicles.

■ **Elkay**, a manufacturer of sinks, faucets, bottle-filling stations, and drinking fountains, is opening a new distribution facility in Lumberton, North Carolina. The 387,302-square-foot custom site will help grow the company's global manufacturing and distribution network.

> M & A

■ Dedicated transportation and fleet management company **Ryder System** entered into a definitive agreement to acquire **Whiplash**, a national provider of omnichannel fulfillment and logistics services.

■ **3PL Central**, a cloud-based logistics technology company for third-party logistics warehouses and brands, acquired **CIO Technologies** and its CartRover e-commerce integration tool.

■ **The North American Chassis Pool Cooperative** acquired the **Pratt Industries Intermodal** line of business.

■ **Knight-Swift** acquired trucking company **MME** and its subsidiaries, which operate under the brand names Midwest Motor Express and Midnite Express.

■ **Quantix**, a portfolio company of Wind Point Partners, acquired **Delaware Express**, a provider of dry and liquid bulk transportation services.

■ Global port group **PSA International** signed an agreement to acquire **BDP International**, a global provider of logistics and transportation solutions.

■ **DispatchTrack**, a global last-mile logistics software-as-a-service platform, acquired **Beetrack**, a Latin American route-planning software company.

■ Transportation and bulk logistics company **Groendyke Transport** signed an agreement to acquire all the tank truck assets of **Georgia Tank Lines**.

■ **CMA CGM Group** agreed to acquire most of **Ingram Micro's** commerce and life cycle services, including Shipwire and its logistics businesses in North America, Europe, Latin America, and Asia-Pacific.

■ **TFI International**, a transportation and logistics company, acquired **D&D Sexton**, a refrigerated transportation company based in Missouri.

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> GREEN SEEDS



▲ **U.S. Steel, Norfolk Southern, and The Greenbrier Companies** are creating a sustainable steel gondola railcar, which transports loose bulk material. Using a formula for lighter-weight steel developed by U.S. Steel, each gondola's weight decreases by up to 15,000 pounds. Norfolk Southern will acquire 800 of the Greenbrier-engineered gondolas.

• **Canadian National Railway (CN)** was recognized by global environmental non-profit CDP for its leadership in corporate sustainability, including its actions to cut emissions, mitigate climate risks, and develop the low-carbon economy. CN is one of 200 high-performing companies to make the A list of nearly 12,000 companies.

• **Crowley** has committed to net-zero greenhouse gas emissions by 2050, reducing overall emissions by 4.2 million metric tons of greenhouse gases per year. Crowley and Salesforce co-developed a greenhouse gas emissions monitoring platform that provides benchmarking, transparency, and custom disclosures.

• **The Rhenus Group**, a global logistics service provider, will neutralize the carbon emissions of all its less-than-containerload products by 2030. In 2022, cargo shipped with the Rhenus Consolidation Box out of Hilden Gateway will be carbon neutral. The service will gradually roll out through all Rhenus gateways worldwide.

• **Deutsche Post DHL Group** introduced a global DHL Green Carrier Certification to reward road transport subcontractors for their efforts to become more sustainable. The company aims to reduce greenhouse gas emissions to below 29 million tons by 2030 and net-zero by 2050.

> MILESTONES



▲ **UPS** has delivered one billion doses of the COVID-19 vaccine worldwide with a 99.9% on-time rate. The company trains governments of Covax nations on how to safely store and distribute the vaccine and has made millions of in-kind vaccine deliveries to facilitate equitable distribution to remote and rural areas throughout Africa, South America, Asia, North America, and Europe.

Tucker Company Worldwide, family owned and operated since 1961, celebrates its 60th anniversary. Currently owned by third-generation executives Jeff Tucker and Jim Tucker, the Tucker family has built its reputation as one of the leaders in North American freight transportation.

Consolidated Chassis Management's **Denver Consolidated Chassis Pool (DCCP)** celebrates 16 years of providing neutral chassis pool management in the region. Launched to bring all chassis in the area together in a cooperative environment, DCCP was one of the first interoperable gray chassis pools in the United States.



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TAKEAWAYS

Shaping the Future of the Global Supply Chain



PORT EVERGLADES SAILS AHEAD

Port Everglades has broken several records in its cargo operations as the cargo trade rebounds. It recently welcomed Mediterranean Shipping Company's *Kotor Bay* (pictured), the largest container ship ever to call on the South Florida port.

Kotor Bay has a container handling capacity of 8,566 twenty-foot equivalent units (TEUs), carrying a variety of cargo from India and the Mediterranean. At 1,114 feet, it's even longer than the U.S. Navy's largest class of aircraft carriers.

The *MSC Rachele* recently arrived at Port Everglades along its route on the East Coast. During her stay, 4,894 containers were off-loaded and loaded, making it the single largest container movement for a ship at the port.

Port Everglades also set a record for container volume in October 2021. At 94,588 TEUs, container volume was up 5.5% from the previous record set in October 2018.

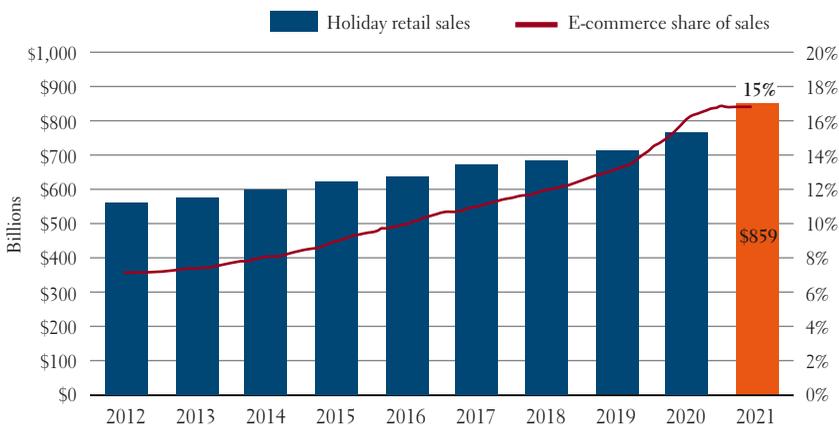
Finding a Home for Holiday Returns

Record retail sales, including a growing share of online purchases (see chart), mean that more returns than ever are flooding warehouses. U.S. holiday retail sales were up 8.5% compared to 2020, says data from Mastercard, and 66% of consumers will likely return at least one gift. At 18%, the e-commerce return rate is almost twice as high as retail returns overall.

Worker shortages and low industrial vacancy only add to the difficulties with reverse logistics, which is both labor and space intensive. Most returns end up in warehouses, where they're sorted manually. Here's what to consider when shopping for a reverse logistics warehouse:

- Sites in close proximity to consumer households and retail stores are preferable to keep transportation costs low for reverse logistics.
- Proximity and easy access to infrastructure, such as recycling centers, is key.
- Aim for larger, flexible footprints. Reverse logistics requires 20% more warehouse space than forward logistics.
- A state-of-the-art distribution center is not typically needed for returns processing; a second-generation facility can adequately meet demand. The rent discount compared to new construction can be steep, offering significant value.
- With more manual labor and less racking and automation required, lower clear heights and less efficient layouts are often adequate and can be leased at lower rents.
- Demand is often seasonal, with retailers needing extra space only during peak periods. Manufacturing buildings as well as converted retail stores present flexible opportunities.

Holiday Retail Sales and E-commerce Penetration



Source: U.S. Census



FedEx Aims for Anti-Missile Lasers

In a new move for a carrier, FedEx has requested permission from the Federal Aviation Administration to equip a fleet of its Airbus A321-200 aircraft with an anti-missile laser system that disrupts heat-seeking missile tracking.

FedEx referenced prior incidents in which attackers used portable air defense systems against civilian aircraft, such as Iran shooting down a Ukrainian airliner in January 2020, reportedly due to mistaking the jet for a cruise missile.

The Federal Aviation Administration says it's open to approval, but outlined special conditions FedEx has to meet before the system can enter service, including fail-safes to prevent activation on the ground and not causing harm to any aircraft or people.

This type of defense isn't new—some commercial aircraft in the United States have used anti-missile systems since 2008, and FedEx helped trial a Northrop Grumman defense system around the same time. Israel's El Al airline has used anti-missile systems since 2004.

Drained Lithium Batteries Get a Life

A team of scientists from the Department of Energy and Stanford found a way to revive dead lithium-ion batteries, extending their battery life up to 30%.

The lithium-ion batteries found in most modern electric vehicles (EVs) tend to lose energy capacity as they get charged, spent, and re-charged. That happens because small bits of lithium get cut off from the battery's electrodes during the charging process. The scientists discovered how to reactivate the "dead" lithium that causes EV batteries to lose capacity.

The diminishing usefulness of its battery is a major criticism of EV adoption. If this new technology can extend battery usefulness, that means fewer emissions and lower-priced EVs that are more accessible to shippers.

The scientists validated the results of their study with multiple test batteries and through computer simulations. The results also demonstrate how isolated lithium ions could be recovered in a real battery by changing the charging protocol.



4 Trends for 3PLs in 2022

Order volumes grew for 79% of third-party logistics (3PL) providers in 2021, but that growth was tempered by inventory availability and disruptions that cost the U.S. economy \$228 billion, says a report from 3PL Central.

Disruptions, technology innovations, and consumer demands will persist in 2022. These are the four key trends impacting 3PLs in the coming year, the report says:

1. **Supply chain disruptions** will continue to plague the industry through much of 2022, creating more pressure for 3PLs to provide strategic insight into inventory and risk management and provide greater demand planning sophistication.
2. **Omnichannel fulfillment** will become even more prominent as companies seek to expand sales channels and leverage the same inventory to fulfill across all channels, pivoting to support where demand is highest.
3. **3PLs and 4PLs** will need to collaborate with other warehouses to create integrated ecosystems that support the level of sophistication in today's supply chain.
4. **Technology is transforming rapidly**, with companies shifting to more highly adaptable cloud-based software that leverages fulfillment innovations and integrates with the broader logistics ecosystem.

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RETAILERS BRUSH UP ON RETURNS

With increased e-commerce adoption, returns are set to grow exponentially in 2022 and beyond, says a recent report from Incisiv, and retailers' digital experience plays a big part in both reducing returns and making the return experience seamless.

Retailers can achieve significant savings and enhanced customer satisfaction if they look at returns as an integral part of their supply chain strategy. Key findings of the report reveal:

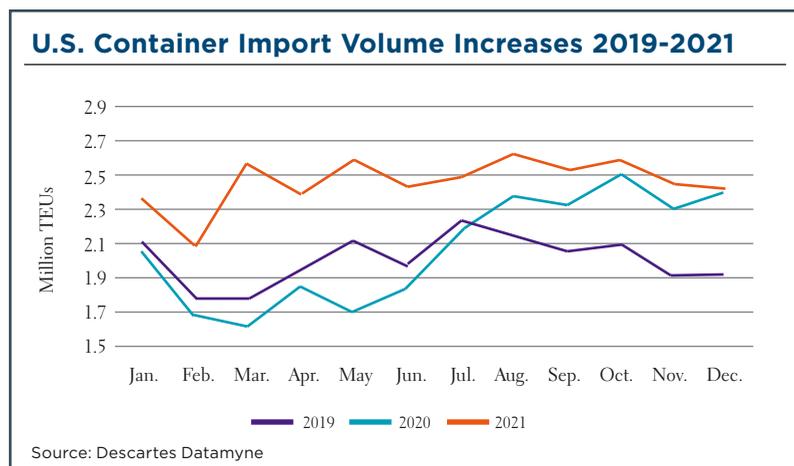
- Health and beauty retailers offer the most advanced functionality around product information and guided content, reducing the occurrence of returns based on poor product details.
- Although 60% of retailers allow shoppers to cancel an order before it ships, only 16% allow order modifications.
- The apparel segment is the most mature when it comes to offering flexible returns. They typically allow online orders to be returned in stores, and 90% allow replacement or exchanges.
- Leading retailers offer more flexible return policies, including as a special benefit for loyal shoppers. One-quarter of retailers have return windows greater than 60 days.
- As shoppers demand more convenient return options, new and differentiating capabilities are emerging. Some have chat bots that help shoppers initiate returns, and allow shoppers to return items curbside.

No Congestion Relief in Sight

It's shaping up to be another congested year for global supply chains as the ongoing pandemic keeps consumers from spending on services versus goods, exacerbating resource shortages and delays. Logistics services providers must view this as a longer-term situation and plan accordingly, says a recent report from Descartes Systems Group.

U.S. ocean container import volumes will remain high in 2022, which indicates similar levels of disruption as 2021. While December 2021 was the second month in a row with declining container import volumes (*see chart*), it was still a record month, with volumes up 1% from 2020 and 25% from 2019.

Consumer behavior is driving a high ratio of goods-to-services expenditures and doesn't appear to be changing. Volumes in 2021 were 18% higher than 2020 and 22% higher than 2019. When considering the extent of the increase, delays and disruption were inevitable, the report says.



Toughest Job in the C-Suite

Although executives who dream up new products, market expansions, or patents typically get all the praise, the pandemic and its disruptions have made getting items to shoppers a more complex and crucial task, says a Fortune report. The fluctuating demand for consumer goods and ships idling in major West Coast ports have only added to the challenge. As a result, a new hero has emerged: the chief supply chain officer (CSCO).

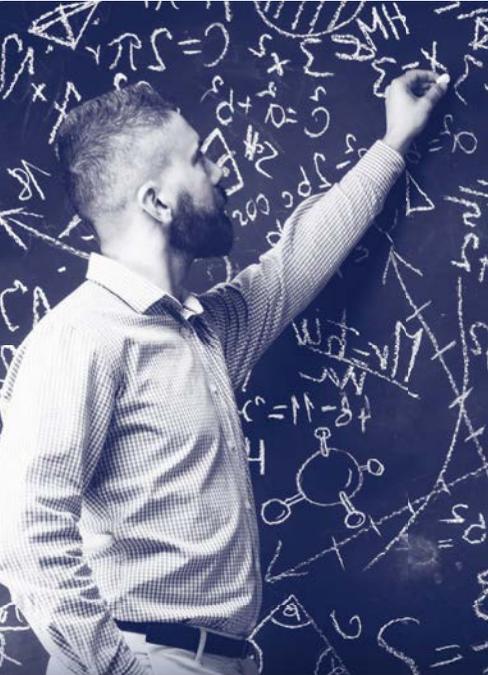
Supply chain management is a core competency within companies that creates competitive advantage if done well, the report says. The role's focus has gone from cost control in production and shipping to shaping strategy.

CSCOs have been on the rise for a while as companies diversify production and face mounting complexities presented by e-commerce, which involves faster delivery times and far more touch points in a distribution system, the report says.

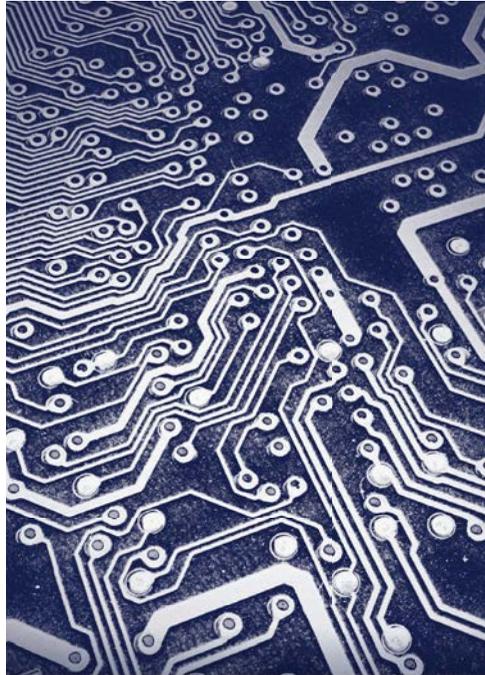
In 2016, 71 new CSCO roles had been created at S&P 1500 firms between 2000 and 2012. Now, 85 companies have a CSCO or someone with a title filling a similar role, according to an analysis of S&P 500 filings and websites by Equilar and Fortune.

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7 Biggest Robotics Predictions for 2022

In the past five years, robots have moved from a developing technology to an indispensable tool for many businesses. With their ability to predict market change or supply chain disruptions, automation programs are increasingly adopted across many industries, says a report from software company Meili Robots. This will continue to change the way business is conducted into the future. Take a look at some of the biggest robotics trends and predictions for 2022, the report says:

1. Process Automation

Robotic process automation will accelerate and may become one of the standard technologies of businesses, especially those with repetitive tasks, such as healthcare. Many hospitals automate processes such as inventory management, invoice management, and appointment scheduling.



2. Robotics-as-a-Service

One of the biggest barriers to robotics adoption has been the high initial investment. Small businesses can attain greater access to automation through Robots-as-a-Service models, which often include analytics, monitoring, and preventive maintenance, while offering rapid scalability and continuous adoption.



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3. Autonomous Mobile Robots as Data Acquisition Platforms

The demand for autonomous mobile robots is rapidly growing, driven by e-commerce, labor shortages, and personalization of goods. They carry out a wide range of tasks autonomously, such as scanning inventory levels or measuring temperatures, and provide real-time data to streamline operations.

4. Multipurpose Cobots

Many retail managers reap the benefits of robot adoption when it comes to moving inventory and cleaning the floors. As shopping demands continue to grow, retailers are expected to add multi-purpose cobots, or collaborative robots, to their teams to carry out multiple tasks at once.

5. Addressing Interoperability

Interoperability allows robots to communicate with each other and other systems to enable an efficient and safe working environment. If not tackled, it can be a pain point

that halts the productivity of the facility. It is expected that this critical issue will be addressed to promote further development and avoid stagnation in the robotics market.

6. More Delivery Robots

The market for delivery robots is expected to see tremendous growth in the next few years. Key factors include the reduction of delivery costs in last-mile deliveries as well as increased venture funding. In addition, there's an increased demand for delivery robots in the retail and food industries.

7. Improved Abilities

During the past 10 years, the demand for robotics has increased steadily across industries and is expected to grow exponentially in the next 10 years as well. As more manufacturing facilities, warehouses, and distribution centers automate their processes, industrial robots will be able to operate faster, more efficiently, and more accurately.



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The Future of Work in Logistics

To meet growing e-commerce demand, alleviate labor shortages, and build more supply chain resilience, businesses will need to deploy strategies to attract, retain, develop, and motivate workers in a digital era, says a report from DHL. Highlights from the report include:

Millennials and Gen Zers seek jobs with more purpose, less repetitive tasks, and more flexible work environments. For the first time in history, digital natives will begin to outnumber those who began their careers pre-internet. This influx of younger people in the workforce is accelerating a shift of values in the workplace to sustainability, diversity and inclusion, wellness, and tech-forward environments.

Most logistics workers believe technology has been beneficial to their role in the past five years and will remain so in the next



10 years, yet more than 50% still view technology as a potential threat. While the logistics sector won't instantly flip the switch from human labor to full automation, logistics leaders see a gradual 30-year period of change in which more roles will collaborate with technology instead of competing with it.

Address the needs and concerns of the workforce. Most logistics leaders say they want to work in the office anywhere from part time to full time, with 60% of operations workers wanting to work remotely at least once per week. Consider ways to make flexible work more accessible through new company policies and technologies. It's important to ask employees how they feel and what they want.



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State of the North American Supply Chain

Most shippers responding to a survey by Averitt Express expect more delays, increased shipping volumes, and higher transport rates in 2022. Findings from the report reveal:

- **76%** of shippers anticipate increased shipping volumes in 2022, the highest percentage recorded in the survey's seven-year history.
- **37%** struggled with capacity challenges within their supply chain in 2021 compared to 25% that reported issues in 2020.
- **57%** experienced delays with truckload shipments in 2021 compared to 42% in 2020.
- **71%** foresee higher less-than-truckload rates in 2022, an 11% increase from 2021.
- **43%** say they will use residential shipping services in 2022 compared to 34% five years ago.
- **33%** say they were challenged with on-time inland container deliveries in 2021, nearly double the rate in 2020.

Get Into Outsourcing

Logistics outsourcing to third-party logistics (3PL) providers has been on the rise, and it won't likely slow anytime soon, says a recent Gartner survey, with 66% of logistics leaders increasing their outsourcing budget in 2021 and 74% set to increase their budgets in the next two years.

At the same time, nearly two-thirds of logistics leaders responding to the survey say 3PLs have a "positive" or "extremely positive" effect on their competitiveness.

Although 3PLs can help address key priorities for shippers, it requires collaboration on both sides, the report says. For example, a 3PL can upgrade new technologies on behalf of a shipper, but it's only possible if the shipper extends the contract agreement and/or partly shares the financial burden. Logistics leaders say their top three logistics priorities include:

1. Improve or update technology (37%)
2. Cost reduction/cost optimization (31%)
3. Increase customer satisfaction (29%)



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The Relationship Between Supply Chain Resiliency and Sustainability

Companies with robust sustainability programs learned supply chain resiliency is an inevitable side effect of those initiatives. Here's how sustainability supports resiliency.

The COVID-19 pandemic shined a spotlight on the frailty of the global supply chain. As a result, business leaders have spent the better part of two years pursuing solutions and strategies that can help build more resilient supply chain operations. This enhanced focus on agility and resiliency has also driven increased interest in supply chain sustainability efforts—and for a good reason.

Companies that already had robust sustainability programs in place before 2020 learned that supply chain resiliency was an inevitable side effect of those initiatives. As a result, advocates of environmental, social, and governance (ESG) programs may now find it easier to get support from the boardroom as the world moves beyond the pandemic.

Why Does Sustainability Create Resiliency?

In a Stanford Graduate School of Business study, 63% of buyers and 73% of suppliers said their sustainable procurement practices helped them endure the pandemic. The same study showed 70% of procurement leaders saw supply chain resilience as the desired outcome for their sustainability efforts. In addition, MIT's State of Supply Chain Sustainability report showed many companies maintained or increased their sustainability investments throughout the pandemic.

Sustainability intersects with resiliency in a variety of ways:

- **Responsible partnerships.** When suppliers, carriers, logistics partners, and

other stakeholders willingly share data about their operational practices, it becomes easier to identify risky partnerships. Building a sustainable operation requires eliminating contracts with businesses that behave in risky ways. When markets become volatile, the company can then rely on a more robust partner network to help it weather the storm.

- **Established visibility.** Sustainable companies already have visibility in their supply chains, and visibility is a cornerstone of resiliency. With transparency between supply chain partners, all parties can identify mutual risks and implement measures to mitigate them. As a result, sustainable companies communicated with partners and reacted more quickly to disruptions caused by COVID-19.

- **Climate change.** The effects of climate change have already begun showing themselves in the form of more frequent storms, flooding, wildfires, droughts, and more. These events have a disruptive effect on the supply chain, meaning decarbonization efforts tie directly into future supply chain resiliency.

Does Your Logistics Partner Support Your ESG Efforts?

Third-party logistics (3PL) companies play a crucial part in supporting broader corporate sustainability initiatives. Your 3PL can support your ESG efforts in the following ways:



- **Transportation.** Logistics providers can optimize routes to use less fuel, locate inventory nearer to your customers to minimize delivery distances, and consolidate shipments to reduce the number of trucks on the road.

- **Packaging.** A 3PL can help you identify greener packaging options for your shipments to reduce landfill waste.

- **Energy-efficient warehouses.** Simple adjustments such as climate control, LED lighting, and solar panels optimize energy usage in the warehouse.

- **Reverse logistics.** Your 3PL can optimize your reverse logistics practices, keeping usable inventory out of landfills and allowing you to resell or dispose of returns responsibly.

- **Fair labor practices.** When it provides a good work/life balance, fair wages, and responsible labor practices, your 3PL functions as an extension of your ESG initiatives.

- **Data transparency.** Sharing data allows you to work with your 3PL to identify risks and areas for improvement.

If you want to have a sustainable supply chain, choosing a logistics partner that can align with your company values and practices is essential.

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—By Robert Kriewaldt



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About Phoenix Logistics. Strategic Real Estate. Applied Technology. Tailored Service. Creativity. Flexibility. These fundamentals reflect everything we do at Phoenix Logistics. We provide specialized support in locating and attaining the correct logistics solutions for every client we serve. phoenix3pl.com

Key Habits of Highly Effective Cold Chain Shippers

Maintaining optimum conditions for temperature-sensitive cargo takes experience and know-how. Here are four attributes of effective and reliable cold chain shippers.

The North American cold chain market is expected to reach \$118.55 billion by the end of this year, with industries from pharmaceutical to food manufacturers dependent on the latest advancements in efficiency and reliability. As e-commerce grows and rail and truckload volumes soar, there has been an increased need for specialty services such as refrigerated shipping.

Keeping cargo at optimum temperatures during transport takes experience that only comes from following rigid standard operating procedures (SOPs) combined with state-of-the-art technology, as well as clear protocols if problems arise. Here are four habits of highly effective cold chain shippers.

Know Your Commodity

When transporting temperature-sensitive freight, what you are shipping is as important as how it's shipped. Produce is different from frozen packaged goods, which are different from pharmaceuticals or nursery stock. All stakeholders involved in the shipment—shipper, driver, dispatcher, receiver—should be familiar with the product and its specifications. The cargo's temperature set point, acceptable temperature range, and, in the case of produce, pulping instructions, should be clearly and accurately documented on all required paperwork.

About Hub Group. For over 50 years, Hub Group has helped customers meet their supply chain needs with a focus on service, integrity, and innovation. For more information about our cold chain capabilities, visit www.hubgroup.com or contact your Hub Group representative today.

Transparency and Visibility

Less than a decade ago, cold chain shippers would wave goodbye to their freight at the loading dock, hoping their shipment would get to its destination safely and unspoiled. That scenario has changed with the advancements in new freight technologies providing visibility that mitigates risk and adds



agility. Whether shipping by rail or by truck, cold chain providers can now deliver real-time information through GPS location tracking and onboard temperature-monitoring.

Following SOPs to the "T"

As food moves through the supply chain, it is rarely more at risk than when in transit. Following a strict set of guidelines and SOPs is crucial for every step of the shipment's journey. Shippers, drivers, and receivers should each have

their own set of procedures to follow. Critical aspects of successful cold chain shipping include pre-cooling both cargo and trailer, knowing when to run a reefer unit on continuous versus start-stop, avoiding mixed loads of fresh and frozen cargo, and understanding best practices for loading and unloading temperature-sensitive freight.

Access to Capacity in a Tight Market

Since the beginning of the pandemic, freight volumes have skyrocketed, and what scarce capacity there was in the truck market has become even scarcer. Refrigerated shippers were most affected, as there are fewer reefer units in the market than dry vans. Being able to access additional capacity when the market is volatile is essential to a successful cold chain strategy. Having the option to use asset-based or brokerage transport gives shippers multimodal solutions—a clear advantage when capacity becomes an issue.

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—By Steve Covey



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Achieving Exponential Growth with Your Warehouse Management System

A warehouse management system provides business agility in an unparalleled manner—integrating all aspects of the supply chain to allow companies to scale.

Supply chain management is evolving to accommodate new technology and business models. Maintaining the status quo is no longer enough to keep up with demand in a rapidly changing marketplace. Companies require an agile, modern, and up-to-date warehouse management system (WMS) that when used in conjunction with a manufacturing execution system (MES), supports exponential growth. It is possible to develop sustainable manufacturing while enabling the business to seize opportunities for further development by using the innovative digital features a WMS has to offer.

Simplified Automation

By providing real-time inventory tracking through digitization, it becomes easier to fulfill orders while keeping your focus on the bigger picture. Advanced WMS software can facilitate smooth order fulfillment by analyzing stock against scheduled deliveries. Precision tracking enables companies to move inventory between warehouses, monitor sales, and reduce the risk of spoilage through automated tracking.

Singular Focal View

By integrating digital access to logistical information, the WMS facilitates communications between all vested stakeholders. With all parties able to view the inventory status in real-time, the physical flow of goods can be better planned and thus more cost-effective.

The automated nature of a WMS allows for comprehensive shipment planning. By integrating all facets of the supply chain, scheduling shipments becomes more efficient (e.g., by delivery

date, by location, by product size/weight).

Tracking the sequence of order deliveries against the manufacturing schedule allows companies to control inventory, prevent backlog, and facilitate the shipment process. With a WMS, all those involved in the supply chain, from manufacturing to shipping, remain in the know at all times.

Manufacturing and Warehouse Tracking

Advanced WMS platforms enable the assembly process to continue while accurately tracking raw materials. Instead of informational downtime during production, a modern MES provides details on work in progress and finished goods. It tracks all supplies whether warehoused, in transit, or in production. This reduces expenses due to loss, damage, overproduction, or downtime.

The WMS provides agility through quick response to incidents across the supply chain. It allows manufacturers to avoid loss through prioritizing tasks based on the most relevant metrics (e.g., expiration dates of raw materials, shipment issues, downtime due to maintenance). The savings resulting from this increased efficiency promote steady growth.

Sustainable Digitization

Warehouse management systems streamline the transition from paper-based processing to automation. Using modern WMS, businesses can automate manufacturing while utilizing AI to optimize profitability. From algorithmic analysis streamlining productivity to the Internet of Things allowing precision tracking of inventory, a WMS offers ample opportunities for development.

The technology available for integrating the manufacturing and warehousing processes is designed to foster true business growth. By limiting the probability of human errors through automated checks and balances, the WMS reduces loss and fosters business advancement. AI analysis can pinpoint opportunities for further economic development based on the focus of the company. From environmentally friendly campaigns to reducing the cost of labor using robotics, the digitization process offered by a WMS is the first step towards exponential growth.

Rapid Deployment of Integrated Functions

This rapid growth is predicated on the forward focus of the company, without issues of human error, inventory loss, or high client attrition rates. The WMS can ensure compliance with relevant regulations and client needs, with objectivity only achievable through automation. Streamlining data exchange across all aspects of the supply chain accelerates the process of receiving information. This allows manufacturers to respond to the needs of consumers, in real-time, without incurring extra costs.

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—By Ann Yates



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Transportation Spend Management in 2022

Shippers using data intelligence can often insulate themselves from transportation management challenges and at the same time, reduce logistics costs. Here's how:

Supply chain upheavals made transportation spend management extremely difficult in 2021. We can expect a volatile market to continue, because the factors that affect spot rates and freight volumes aren't going away anytime soon, including constraints on new truck builds, depleted used truck inventory, severe driver shortage, growing freight demand, and supply chain disruption.

A transportation market correction is coming, but disruption still looms.

Assuming supply chain backlogs and equipment imbalances dissipate following the peak season, a transportation market correction is likely coming in 2022. When it does, shippers can expect transportation pricing to return to a normal rate of inflation rather than a steep pullback.

Until then, inventory replenishment will be an ongoing effort and will create a ripple-down effect for many shippers. For some, delivery delays will result in a surplus of untimely or misplaced product. Others will grapple with a returns process that echoes the historic spike in e-commerce since COVID-19 emerged. Capacity constraints will continue.

To plan for market corrections—or disruptions—and develop response strategies, you need to know which areas of your network are the most susceptible to transportation spend management risks.

Expect logistics cost pressures to persist.

Truckload rates at record highs triggered an unprecedented number of new entrants in the carrier marketplace. Anticipated cost increases in 2022 will hit new carrier operations the hardest, especially as inflationary pressure drives up truck and trailer prices. Driver



compensation and diesel fuel prices are two more looming carrier cost drivers in 2022, according to American Transportation Research Institute (ATRI).

Meanwhile, brokers are paying more for capacity as they solve difficult challenges during high demand. At times in 2021, as much as 25% of total truckload freight moved on the spot market. Pre-pandemic, 13% of shipments were spot moves. That uptick adds production costs for brokers on top of increased transportation rates, so operating margins are shrinking while volume grows.

As increased market demand continues to stretch capacity thin into 2022, expect higher quotes for short-term contracts and higher premiums in the spot market. Knowing the current rates in this environment can help you improve your negotiating position and your ability to control transportation costs.

Transportation analytics enable better spend management.

When 2022 brings unplanned freight volumes, network disruptions or difficult conversations about transportation costs, effective spend management will depend on in-depth and accurate insights on rates, carrier performance, and market forecasts.

Intelligence-based carrier sourcing solutions help you access a complete picture of transportation providers who have capacity to service lanes where you need additional volume.

Freight rate analytics with broad, deep data sets, and rate lookups for single or multiple lanes can help you evaluate mini-bids and quotes from carriers in the spot market. These current market rate insights ensure you get fair prices in every demand environment.

At the same time, rate forecasts on key lanes—both daily for the coming week and weekly for the coming year—empower you to pinpoint the biggest expected increases. This might highlight a need for alternative plans or a review of your current contract rates to make sure they stay in alignment.

To further support strategic planning, granular benchmarks on network performance identify where your carrier- and lane-level costs surpassed market averages last year, so you can more closely monitor and plan for those costs in 2022.

Combined, these solutions allow you to navigate logistics challenges while improving transportation spend management in the year ahead.

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—By Ken Adamo



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Is Labor Status Quo Crippling Your Operation?

Discover the ways your normalcy undermines business success and how to fix it.

A lot of operations leaders think things must be fine because production lines are running, workers are working, and stuff is getting shipped. But just because things are running does *not* mean your business is healthy, profitable, and growing.

Overreliance on the status quo conceals the importance of change. But why should you stay the same when the world is changing all around you? You shouldn't.

There are actions you can take to embrace change instead of the status quo.

High Turnover

The Status Quo: I can't afford to pay my employees higher wages.

A Powerful Revelation: Spending more money on the right people ultimately decreases cost per unit. Higher pay satisfaction has been correlated with higher productivity and organizational loyalty in contingent workers.

Take Action: Scour your systems for operational inefficiency. Lower your cost per unit as much as possible so that you have more room to pay competitive wages.

Leaders thinking with the status quo see labor like any other expense: the less you can get away with spending for an equal asset, the better. But people aren't the parts of a kit, or the cardboard boxes stacked in a corner of your warehouse. And contingent workers don't exist in a bubble once they start work on your floor. They realize when they're underpaid and will leave you for a warehouse with more competitive pay if you fail to offer them a satisfying wage.

Your operation becomes a training

ground for other businesses that pay their workers more. You become nothing more than just another stop on the road to a "real" job for the kind of workers you desperately need to keep.

The status quo claims that high turnover is an unfortunate, but unavoidable, characteristic of outsourced labor. It doesn't have to be. Find the money to pay your workers well, and they will stay loyal to your business.

Beyond the Status Quo: Start seeing labor as a long-term investment. When you put more energy, care, and yes, money into your workforce, you get a higher return on that labor investment in the form of higher productivity, efficiency, and loyalty.

Staffing Agencies

The Status Quo: Staffing agencies are a necessary evil. At the very least, I save money by working with them.

Discover the Harsh Reality: Staffing agencies often are a net loss when you factor in the costs associated with high turnover and lower productivity.

Take Action: Fire all staffing agencies in favor of a solutions partner that offers workforce planning strategy, a focus on training new workers, and on-site assistance to eliminate operational inefficiency. These things can make your contingent workforce a profit center.

When you're forced to deal with staffing agencies daily, the glaring issues with the service they provide start to feel normal. For many operational managers, mediocrity becomes their highest expectation for their contingent workforce as a consequence.

Many staffing agencies claim cost savings despite these glaring issues. Companies that work through staffing agencies see cost savings on paper, but ultimately lose money due to higher turnover and lower productivity. The core problem is not one of contingent labor.

The problem is, the staffing agency model is broken. Staffing agencies rarely get you 100% filled. They do a poor job at training workers for your floor, if they manage to train them at all. They fail to make your systemic turnover and productivity problems their concern even though they're sending the workers. And you'd think none of them had ever heard of a drug test from the way they fail to use them.

Despite this, the status quo insists that staffing agencies are necessary. To find a solution, you need to look to things you haven't tried before.

Smart Resources

Smart Resources is the contingent workforce planning resolution that's been outside your status-quo radar. We give you a contingent workforce, and then partner with you to solve the turnover, productivity, efficiency, and cost-per-unit.

.....
-By Kelly Blair and Cary White



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Addressing Supply Chain Pain Points for Shippers

Sophisticated tools can help shippers contend with their most frequent challenges.

Shippers must navigate a daunting array of complex challenges when operating in today's often turbulent supply chain landscape. Potential pain points are rampant.

Fortunately, shippers can turn to a variety of solutions and tools that can help drive capacity, control for rates, enable visibility, manage inbound and outbound execution of shipments, and improve the freight audit and payment processes—cumulatively addressing those nagging obstacles that frequently surface.

Order Management

For instance, a lack of information on inbound orders can cause shippers to need to devote additional costs to labor throughout the supply chain. However, an order management tool within a transportation management system software solution can serve to provide shippers with full visibility for tracking and tracing shipments and the capability to manage events.

That visibility includes a view of purchase order fulfillment and creates the ability to quickly review with the supplier the timing of the shipment to schedule labor at distribution centers for outbound shipment execution.

Shipment Execution

When shippers struggle to find capacity from their providers, it leads to increased freight spend and labor costs. Getting status updates on shipments also can eat up time and resources. Through outbound shipment execution tools, shippers can take sales orders



and interface with a transportation management system to manually or auto rate and auto tender shipments to transportation providers. Shippers can gain visibility of shipments down to part level, order number; receive alerts for shipments out of the delivery window; and at the same time control costs.

Spot Auction

Global inbound shipments have been in turmoil in 2021 and are forecasted to remain that way at least through the first three quarters of 2022. Ocean shipments, in particular, are facing not only capacity challenges and longer transit times, but extremely high rates.

Operating in these markets means relying heavily on spot auction tools and automated bidding solutions to identify and lock in the best possible rates that match capacity and transit needs. Spot auctioning can be executed for all modes in a timed automated tool for both inbound and outbound shipments.

Contract Management

Contract management is a necessary condition for successful

end-to-end procurement and supplier performance—and arguably even more critical than the “sourcing” phase in the end-to-end supplier engagement process. Contract management tools can improve business functioning, control spending through better visibility of spending and identification of future savings, help to monitor and evaluate suppliers, and ensure compliance with clear rules and procedures.

Procurement Tool

An RFP bid/tender sourced in one tool for multiple transportation providers offers the ability to run global multi-modes and establish tasks and activities. Shippers can build a generic bid and quickly view the low-cost providers. They also can award and allocate multiple providers a percentage of the lane or lanes that need carriers.

Freight Audit and Payment

Tech-based tools can help avoid early payments (driving cash flow), duplicate payments, and late payment penalties, while ensuring shippers take advantage of payment terms. They also provide data for future rate negotiations and invaluable visibility to supply chain costs.

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—By Dave Maddox



Senior Vice President, Global Supply Chain Sales & Marketing
 nVision Global

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nVision Global is an industry-leading provider of configurable freight invoice auditing, TMS services & solutions, managed services, business intelligence and multi-modal visibility technology.

Data Management — Vital Today!

Managing information gathered from a strong TMS provides a solid pre-audit program to double-check the accuracy of bills and also delivers these value points.

Years ago, I named my business “Freight Management,” but today it should be called “Data Management,” since that seems to be the business in which we find ourselves. Driven by competitors, by our clients, and by our own imagination, the effective collection of information can be invaluable if properly used and directed.

There are value points in managing information gathered from a strong TMS system that can also provide a solid pre-audit program to double-check accuracy of bills before payment. These points include:

1. Tracking the duty paid on imported items with an eye to how much then reships to Canada, or falls into other categories, which will allow you to regain much of the duty paid.

2. Having visibility of all shipments moving inbound or outbound until delivered. This information can be pushed or retrieved. This assumes that the freight is tendered by the shipper, or by the vendor, via the TMS that picks the approved carrier for the speed and distance of the shipment. The TMS usually notifies the carrier electronically and a bill of lading is prepared for printing for the consignee.

3. Out-of-region freight moving from a warehouse outside the service zone is costly and a good TMS reporting system will identify these types of occurrences. Additionally, it should identify what SKUs are involved and how frequently it happened in the past week or month. All of this adds extra costs to the bottom line.

4. Double/triple orders moving the same day to the same customer can be identified and allow steps to be taken in the future to consolidate such orders onto one bill of lading, not two or three.



This typically happens when you have many items for sale and a customer such as Walmart will create an order for each one, which then triggers a bill of lading for each. In some cases, they insist on a bill of lading for each PO. A master bill of lading can overcome this need, which includes all the individual bills of lading onto one transaction. Additionally, carriers will even consolidate the orders and then send one bill.

5. How often is the shipping staff or the vendor using the wrong carrier for the size, speed, and distance of the order? This, too, can be expensive, and it is good to know when this occurs and where the failure is occurring.

6. Sometimes freight costs rise, and you may not be sure why. A good TMS should provide a report on all shipments for any period of time with average mileage, average weight, and cost per pound. Maybe freight order size is down, which will tend to raise the cost per pound, or orders are simply farther away than normal.

7. Identifying when accessories (which are logged and summarized) of a given type are spiking. This could mean more home deliveries, more inside deliveries, etc. Counter-action can then be taken to mitigate the costs.

8. Defend against charge back from the major retailers. This is now a major profit center. Allegations of late arrival, etc. are charged against you. A good TMS provides status and location of all shipments during the move, which will help that defense.

9. Develop a report card on all carriers for on-time delivery, claims ratio, or other factors

10. You can also chart the cost of fuel month to month, so you can better see the trends and prepare yourself or your customers.

11. By receiving a delivery receipt from the carrier, the process for filing claims for loss and damage is made easier and more accurate.

12. Finally, a good TMS will provide accurate accrual reports at the end of the month. However, all open orders across all modes must reside in it. The TMS can then calculate the charges you can expect from the carrier even if not billed or received yet.

Freight Management has such a TMS, and additionally the staff to manage it. Data management has become our main business.

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—Robert Walters



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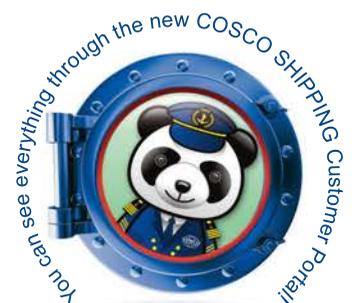
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One key step to finding answers to any logistics, supply chain, or technology challenge is knowing the right questions to ask.

Inbound Logistics assembled a team of supply chain and logistics technology leaders, and asked for their perspectives on the important logistics challenges and opportunities impacting your business.

More importantly, these logistics thought leaders can give you guidance when considering improvements to your business processes.

*See ALL the Thought Leaders online here
bit.ly/ILThoughtLeaders*

Thought Leaders

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66 **TIM SMITH**
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Parcel Is a Crucial Value-Add in the Evolution of the TMS



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The growing requirements and demands placed on shippers and logistics service providers have pushed transportation management systems to become more agile and able to support greater service levels and cover multiple modes—especially parcel.

Q Why is parcel gaining attention now?

A Shippers and LSPs want to streamline connectivity and communications with their parcel providers. Accurate rating is one of their greatest challenges. Throughout my conversations with logistics executives, they regularly cite carrier invoices returning with a higher fee than what was quoted. The inability to recoup these costs amid already thinning margins is detrimental to the bottom line.

The driver shortage is also driving interest in parcel. With numbers exceeding 80,000 from 61,000 in three years, securing carriers for bulk orders is proving to be more difficult. Organizations are deconsolidating larger orders to pull enough product and meet their customers' demands and delivery requirements to avoid losing the whole order—or worse, losing the client due to limited capacity.

Because this workaround is expensive, it's crucial for teams to save on efficiencies and logistics costs where they can, such as through seamless rate shopping and rate management.

Q Has it gotten easier to work with parcel providers—and why?

A Parcel providers—both tier 1 players like FedEx, UPS, and DHL, as well as the surging regional and super regional

providers—have become much easier to work with. Most parcel providers are willing to work within API connectivity in lieu of third-party providers who are still working with EDI or XML. As a result, TMS software providers with robust, underlying data models can offer extended functionality such as rate shopping, real-time tracking, and reporting and analytics.

Q How is effective parcel management a critical advantage?

A Today, communication between parcel providers and clients can be much more thorough, not only from a visibility perspective, but also enabling greater cost control. Using a multi-modal TMS that incorporates parcel, organizations can now assess the true cost of a shipment, including services requested and accessorial requirements, and get real-time tracking and accurate rating.

When managers have to enter their parameters and rate shop for each and every carrier across dozens of websites, then handle processes like pickup, track and trace, and invoicing via carrier portals or even by phone or email, these inefficiencies rack up a lot of time and money—especially when invoices don't match the initial quote.

That's why parcel via TMS is becoming a real game-changer. Teams can rate shop, execute, track and trace, audit, and pay all within one platform regardless of the mode, leg, or partner they're dealing with. The transportation management system will also flag unexpected charges (detention charges, inside delivery, beyond charges, sort and segregate, etc.) and create detailed line items that make it easy for finance to audit, saving valuable time and money.

DDC Sync Q&A: Supply Chain Efficiency Through Smart In-Cab BOL Capture



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To learn more, visit:
www.ddcfpo.com/ddcsync

Q DDC FPO just launched DDC Sync, which leverages intelligent automated capture. Why? How can companies gain supply chain efficiencies by automating data capture?

A We've been in this industry working with a large portion of leading motor carriers for a long time. One of the common, recurring challenges that we are always helping our partners overcome is finding new ways to boost efficiencies in their operation. An example is capturing BOL data earlier in order to reduce turn around time.

Yet most applications on the market—until now—don't adequately do this, because they aren't truly automated. They require drivers to capture an image of the BOL for historical record and then key the relevant data.

By automating this process with an intelligent capture engine, you'll benefit in both accuracy rates and speed of processing.

Not only will you ensure your data is correct due to the reduction in human error caused by manual entry, but you'll get a hold of the quality data faster. You no longer have to wait for the manual entry to happen, and you don't have to worry about days caused by rejects or snags in QA.

Now, take that automated, smart OCR engine and put it in a mobile device so that it can be taken care of at the time of pick up? It's a game changer.

Q How are freight operations optimized by empowering drivers to capture data?

A Initial results of DDC Sync show that LTL carriers experience a near six-hour gain in visibility and access to their freight data. To quote one of our integration partners, Ben Wiesen from CLI, "This is huge."

When drivers are empowered to capture this data at the time of pick up, transportation providers can see it in real-time, review, and make logistics and workforce planning decisions immediately.

The competitive advantage they have to optimize their load planning and scheduling is significant.

Q DDC Sync is positioned as an enterprise application. Besides the in-cab BOL capture, what are other noteworthy features?

A With the web portal of the DDC Sync solution, dock operations and terminal management are no longer limited to zip code and tonnage. They can now make strategic routing moves based on all the consignee details that come to them in real-time or near-real time.

The end-to-end visibility comes full circle with GPS tagging, real-time reporting, and driver-terminal chat. And, to increase adoption, we have an engaging gamification program to reward drivers as well as interest groups for drivers to connect.

Why Expedited Is *Not* a Four-Letter Word



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Q Why is it more important than ever to establish a relationship with an expedited carrier?

A In today's volatile transportation environment, capacity is king. As a result, securing TL or reliable LTL capacity comes at a significant cost. Even when a shipper is prepared to pay a premium, there is a lingering fear their transportation partner may have issues delivering on-time performance.

Because of these variables, shippers are desperately seeking solutions to normalize and optimize their supply chain performance and deliver high-quality, affordable service to their valued customer. For this reason, transportation professionals should overcome a false fear of excessive cost and seek relationships with the ultimate "service-focused" professionals—the ground expedited industry.

Technology is a key component in controlling, measuring, and predicting cost on both the shipper and carrier side. In the current market, trucking companies are optimally maximizing their fleets, carefully managing every penny, mile, and minute for their available resources to deliver a positive impact to the organization.

Supply chain management coupled with concise load planning is paramount, even in a perfectly controlled and normalized environment. Shippers leverage technology to drive the decision-making process so they can optimize their carrier selection which is designed to improve cost while measuring and improving service.

However, human Freight IQ cannot be replaced. Optimal mode-shifting requires human intellect to deliver maximum results.

Transportation and logistics professionals have tremendous responsibility to manage multiple variables to deliver quality service and drive profit. They have multiple internal and external customers they must service without fail. Balancing the needs of everyone can be overwhelming, and having trusted partners is critical to the success of the team.

Variables faced when selecting the right solution include the measurement of:

- Urgency or complexity of shipment (including white glove)
- Historical service performance
- Carrier/asset/driver availability—HOS limitations
- Fleet/route optimization—loaded/enroute/out of route/empty miles/quantity of stops/backhaul freight availability/backhaul rates/pick up/delivery times/total asset utilization
- Cube analysis—under/over cube decision—rightsizing the asset

All of these variables and associated challenges are often solved through use of an expedited provider.

Effective transportation professionals understand the value of capacity and are capable of mode shifting at the perfect time in order to optimize total landed cost of transportation. While maximizing asset utilization is key, mode selection is critical.

Unfortunately, when mode optimization/shifting is deployed, most companies only think of the FTL or LTL modes of transportation. Often overlooked, smaller truck types like cargo/sprinter vans and straight trucks can fill the gaps. The expedited sector of the transportation realm brings value, capacity, service and yes, can reduce your transportation cost when used effectively.

Strengthening Omnichannel Capability to Address Fundamental Shifts in Consumer Behavior



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About Legacy Supply Chain

For nearly 40 years, Legacy Supply Chain has been the pioneering, mid-sized 3PL that businesses depend on to enable more control over their dynamic omnichannel supply chains—so they can stay more connected to their consumers and ultimately deliver better customer experiences.

With over 30 operations in the U.S. and Canada, Legacy provides truly tailored warehousing & distribution, e-commerce fulfillment, and transportation solutions. For more information, visit us at: legacyscs.com

Q What have the past few years revealed about consumer trends?

A With the rise of e-commerce came the demand for next-day or same-day shipping with a catch—no added cost. Consumers crave the instant gratification they would have experienced from going to the store, without leaving their house, and as large online retailers began offering free shipping, this became the new norm.

This new challenge pushed businesses and logistics providers to rethink their strategy, and COVID has accelerated this challenge exponentially. As a result, businesses are decentralizing distribution and delivery networks to get products closer to the end consumer. In response, we've heavily invested ourselves to build an integrated U.S./Canada fulfillment network and expand our transportation offering to increase capacity for our customers.

Q What are the advantages of an omnichannel solution?

A An omnichannel solution places the optimal level of inventory in the right locations to service retail, wholesale, and end consumer markets—creating improved levels of service and reduced supply chain costs. An omnichannel supply chain is built with elasticity to handle demand shifts and seasonal fluctuations, and when done correctly, can create redundancy and reduce risk. The ability to deliver using optimal shipping methods creates new cost savings and economies of scale.

Q How can technology enhance omnichannel solutions?

A In an omnichannel supply chain there are many components that need to be connected, including suppliers and vendors, online and physical storefronts, and delivery channels. Technologies such as distributed order management (DOM) can be leveraged to create that connection, and drive better visibility, decision-making, and predictability. While technology is essential to connect supply chain parties—technology absent of supply chain operational know-how will have limited positive impact.

Q The labor force has changed—how do we adapt?

A We are seeing an increased demand for blue collar warehouse associates and drivers, as well as white collar professional talent. Incoming employees are expressing increased health and safety concerns, and we are seeing a more mobile workforce with new expectations. To compete in a sustainable way, in addition to continual refreshing of compensation and benefits packages to remain competitive, providing a positive workplace experience and meaningful culture will give you a hiring and retention advantage.

Q How has the role of a 3PL changed?

A Logistics service providers must shift their focus from being simply a provider of services to more of a strategic and long-term growth partner. Providers must seek mutual investments and deeper connections within the organizations they service.

Reducing Small Parcel Shipping Costs: Here's Where to Begin



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Q The cost of shipping small parcels is constantly increasing, so how can I reduce and control these expenses more easily?

A Global supply chains are still being impacted by COVID-19, and will likely remain volatile for the foreseeable future. Unprecedented volume is also a huge contributor to these costs. According to Statista.com, the global parcel shipping volume in 2020 was more than 131 billion parcels, a figure they predict will double in less than six years, reaching 266 billion parcels by 2026.

So, providing accurate shipping costs, and managing these costs effectively, is more important than ever before. If you cannot, you will likely pay more than you need, and often a huge part of the problem is due to incorrectly sized and/or poorly packed cartons.

We frequently find companies have a limited selection of cartons that are outdated for the products currently shipped, resulting in items being packed in cartons that are too big. Consequently, the cartons are packed out with costly dunnage, and shippers pay to transport empty space.

Good Cartonization software eliminates this problem, using the weight and dimensions of objects to select the correct sized carton, assisting with accurate shipping cost calculations in near real-time when the customer places an order, essential for any e-commerce site. At the same time, packers are shown how to pack the items properly, requiring minimal fill while ensuring items arrive in perfect condition.

Q What do I need to implement Cartonization software efficiently?

A To get the best results, you need two things. First, you need to automate the process. Our software connects seamlessly with any WMS/ERP and functions almost like a “plug-in” giving you access to advanced Cartonization capabilities that support an unparalleled number of rules and operational constraints.

Secondly, you need accurate product dimensions and weights. When we receive good quality data from customers and run it through our software, we can achieve extremely good, predictable results.

Unfortunately, many companies fail to realize the importance of using proper dimensioning equipment and how this will ultimately reduce their costs. For example, dimensioning equipment scans and weighs items to provide accurate data but can often provide other interesting and vital information such as whether a product can be compressed or folded or nested. These factors can make a tremendous difference in achieving substantial savings.

Q Your software runs with any existing WMS, but how can I integrate it?

A Our BlackBox software for high-speed Cartonization runs as a Windows service and supports many industry-standard APIs for easy integration into WMS, TMS, ERP, and even legacy systems. BlackBox can be configured to operate with any system available that generates data to a standard schema and can be running and providing savings within a very short timeframe.

Right-Sizing and Leveraging Fulfillment Automation



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Q How can right-sizing automation address labor shortages? Does it lead to increased employee engagement?

A Automation, when correctly applied, should have two benefits: performing tasks with fewer people, and increasing the value of (remaining) employee tasks.

Consider automation as a tool, doing the heavy lifting with repetitive tasks and the heavy thinking that goes into those tasks.

When staff interact with these solutions, they see more being accomplished with their efforts. The higher perceived value on a task, the more likely it will increase engagement, with that engagement feeling more significant to staff.

This is vital for keeping well-performing employees around.

Q Why are modular systems so essential for e-commerce fulfillment operations?

A Unless an entire operation is being built from scratch, there is no such thing as a one-size-fits-all solution. Fulfillment operations often have modules for different customers, each with unique requirements.

With our Chameleon Parcel Processing Solution, for example, the fulfillment space is most often utilized to automate tasks after packaging is finalized.

Some companies may only need a scan-sort solution, others scan-print-and-apply, some need both, and then you run into weighing and dimensioning on-the-fly requirements.

Our pick and put-to LightSort Technology can be retrofitted to sections of existing racks systems and then expanded across others. Once retrofitted, they can house differing workflows across modules, for example, depending on the picking methodology (traditional, wave, etc.).

Put walls are perfectly modular as they can be expanded, replicated for different modules, or even moved around on wheels.

Q Why do you think the misconception that automation is only for larger companies continues to persist? How would you address that?

A Historically larger companies have been the ones automating, simply due to their larger amounts of capital. As automation technology evolves, the cost to acquire and implement go down.

With the ever-increasing demands on fulfillment operations, from stricter SLAs to ever increasing volumes, the perfect storm is created. Many are going to pull the trigger on solutions that provide quick benefits. Due to the built-in modularity of their operations, they can automate specific things in specific places, referred to as point automation.

WMS Must-Haves: Adaptability, Scalability for Efficiency and Profit



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Q What do you consider to be the primary commercial advantages of a contemporary WMS?

A The DNA of a WMS should be adaptable, fast, affordable, and scalable to offer a low entry point into the warehouse versus Tier 1 solutions, while at the same time providing a platform that expands exponentially according to the client's requirements.

Q With a WMS you must be able to build fast and efficient ways to accommodate changes in client requirements or adapt to changing environments. What is your point of view?

A A WMS must be designed to allow clients the "keys to the car" so to speak, where they can extend the functionality of their WMS without custom coding. Thus, clients can extend according to their requirements without time-consuming plans or make process modifications essentially on the fly.

The actual benefit of a WMS must be the rapid initial implementation and then in the case of 3PLs adding new clients is a fraction of the expected cost.

Modules as proprietary WCS tightly integrated with the WMS as well as an advanced module for interfacing have to be designed to work as universal connection tools to allow for integration into virtually any automation, ERP, or e-commerce shopping carts with little configuration by the client resources and not necessarily the WMS vendor's development team.

Q What tools should a WMS own to gain insights on performance and activity?

A Warehouse intelligence is of utmost importance providing analytics that actively monitor performance and activity through WMS related KPIs, visualizations, and measures.

It is essential to provide both historical and trending data to the management team, as well as dashboards on real-time productivity, activity, and work content to the floor. The mantra will be if we capture it in the system, the customer can manage and display in dashboard formats the progress and performance of the operation as it happens.

The true benefit of this real-time visibility is measured in the increase in performance of the operation by 20% per hour, as well as actively balancing the requirement of labor from a day-to-day basis.

Having the ability to know that on a given day, your performance in picking would be 50 lines per hour, and at 2:20 pm you have 1,150 lines left, you would require an additional 23 hours of picking or call in 10 people on picking.

You could then adjust your labor as required during the final 2.5 hours of the day or send home unnecessary labor to save money and time.

Mantis offers all the aforementioned, together with many more modules and systems to create the most appropriate logistics solution for your enterprise.



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IT MATTERS

by Jeff Lokant

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TMS Evolution: A Provider's Perspective

Shippers have numerous Transportation Management System (TMS) options, but they are farther from feature and price parity than you may imagine. While many TMS core tenants are now commodities, there are significant gaps, strengths, and weaknesses across the main players.

At a fundamental level, a TMS is an application that helps a shipper move freight to meet customers' expectations. Let's examine past and current solutions and look ahead to what's on the horizon.

Technology advances transform transportation management systems. In the early days of TMS, circa 2000, you could find beneficial individualized tools, which lived in silos. Data entry was prevalent, integrations were scarce (or highly custom and expensive), and capabilities were limited. This worked because many shippers still leveraged individual carrier websites and had dizzying workflow, disconnected datasets and no business intelligence expectations.

Rapid tech advancements throughout the early 2000s had an exponential impact on TMS features, as well as how they were architected. TMS providers began to serve a mixed market of shippers, brokers, carriers, and 3PLs with the same application code base. Focus turned to their complex operational requirements. Cloud-based solutions made TMS technology more affordable

for smaller companies to compare carrier rates, manage execution, monitor freight movements and automate processes.

By 2010, expectations for real-time data exchange via APIs (application programming interfaces) started to gain in popularity alongside traditional file exchanges. To a degree, explosive growth in API adoption has helped level the TMS playing field. Notably, integration features quickly became the norm as opposed to a rare, costly, customized one-off.

What to expect. Today, nearly everything is cloud-based. Shippers no longer need large budgets for TMS. On-prem tech is rare. Speed-to-implementation is key. Expansive pre-built third-party service integrations must be easily configurable. Optimization tools need to be powerful. Brand-agnostic and real-time ERP and WMS integrations must be tried and true. Latency must be low.

TMS providers also are expected to rapidly analyze large and complex datasets, augment those datasets appropriately and provide meaningful insights to drive human decision-making.

However, even now, the quality and success of a TMS implementation is still largely dependent on:

- Overall solution design
- Competitiveness of the rates negotiated
- Sophistication of the shipper's overall application landscape
- And most importantly—data quality.

No TMS can tell you which mode is most practical if you cannot provide an accurate product weight. Nor can any TMS send your customer Amazon-like notifications if you cannot link up customer contact information to your shipments.

Shippers need hybrid-digital solutions to align transportation strategy and execution with business goals. Do not underestimate the importance of the human factor when selecting a logistics partner.

Manage TMS expectations with knowledge. Ask tough questions such as:

- Where is your TMS lagging behind the competition?
- What is your annualized up-time?
- Where does your freight spend fall relative to your existing client base?
- Do you expose real-time access to the database?
- What does your product roadmap look like?
- Will you sell your data?

And, of course, request demonstrations and get your hands on software before making any decisions. ■

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LEANSUPPLYCHAIN

by Paul A. Myerson

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S&OP: Bringing the Outside In

Sales and Operations Planning (S&OP) is an integrated business management process through which the leadership team continually achieves focus, alignment and synchronization among all functions. This ensures that supply meets demand while the organization meets general business objectives, including profitability, productivity, competitive customer lead times, and others.

The goal of S&OP is to understand how a company achieved its current performance, and to direct its focus on future actions and anticipated results.

Because the time horizon of an S&OP process may span anywhere from one to six-plus months, it is critical to also include an element of risk management on a regular basis, especially in today's volatile external environment.

Risk management—risk identification, assessment, treatment, and monitoring—through S&OP is just as important as financial alignment. Risk management permeates all functions and levels of an organization and might even extend to suppliers and/or customers. So, it should naturally be part of Sales & Operations Planning.

FROM INSIDE OUT TO OUTSIDE IN

Historically, companies used an “inside-out” approach in S&OP, guided by the belief that an

organization's inner strengths and capabilities will produce a sustainable future to meet anticipated demand. This approach looks primarily at internal supply elements and then works outward.

To achieve success in today's volatile global environment, however, companies need a more “outside-in” approach that uses information from the extended supply chain to maximize customer value and overall supply chain surplus. This approach includes not only collaboration with key customers and suppliers but also demand sensing, shaping, and enterprise tradeoffs, including risk/reward analyses.

Besides matching demand with supply while meeting financial and operations goals, best practice and mature S&OP processes uncover risks and opportunities that lead to scenario planning and help the organization prepare for a range of future circumstances.

Here are some steps to consider to help develop scenario planning capabilities in your Sales & Operations Planning process:

- Identify risks and opportunities that might impact the demand or supply plan by validating key assumptions as well as a range of internal and external supply chain drivers.
- Develop a culture of identifying risks and opportunities. Challenge the plan by engaging finance teams while using a common language—for example, develop a strong link between S&OP and financial planning.
- Use risks and opportunities to drive decision-making by moving them through the S&OP process using an agreed-on way of handing over information to the following step.
- The final executive S&OP step requires teams to think about sharing not only the risk or opportunity but also the impact, possible actions, and expected results.

INTEGRATING RISK MANAGEMENT

Risk management can no longer be considered a purely long-term, strategic tool. It must now be integrated with more tactical tools such as S&OP to ensure your organization's future success. ■



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LOGISTICS MGMT

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Expedited Shipping *Can* Save Money

As shipping delays and supply chain issues pile up across the country, more businesses struggle to ship and receive products on time. When companies fail to meet important deadlines, the results can be costly, leading to the loss of valuable customers and vendors.

Fortunately, the use of expedited shipping services can help mitigate these risks. Experienced freight companies can identify the quickest and most cost-effective transportation methods while also helping to prevent financial loss caused by absent or late shipments.

Once you've established a working relationship with a reputable freight service, your account information, needs, and any special requests will be saved in their customer database. That means that the next time you contact them, you'll spend less time explaining your situation, getting your inventory en route even faster.

WHY EXPEDITED SHIPPING SERVICES?

While expedited shipping options are typically more expensive than standard freight services, they offer numerous benefits.

Meet tight deadlines. Missing or late shipments that fail to meet deadlines can be disastrous for small and mid-sized businesses, leading to massive losses or penalties due to corporate chargebacks and lost sales. Damaged or missing cargo, perishable items, and hard-to-replace products often have the strictest deadlines,

and failing to meet them can severely damage your bottom line.

Streamline the transportation process by sending freight directly to the consignee as soon as it's picked up. That means your inventory won't waste unscheduled time sitting in a storage facility or warehouse, reducing the risk of lost profits. Depending on the industry, just one hour of downtime (caused by lack of equipment or tools) can cost anywhere from \$85,000 to \$1 million.

Don't pay for storage. More organizations utilize just-in-time inventory based on their production cycles. This means that supplies arrive only when needed, lowering overall costs. Maintaining the warehouses that store these items can be expensive since the facilities have to carry insurance, hire staff workers, and implement temperature control—leading to higher costs.

Utilizing expedited shipping services to order supplies when necessary eliminates the need for storage space, saving time and money without interrupting production.

Know your inventory is secure. Because your inventory remains on the same vehicle during the duration of

its journey, there's minimal handling, resulting in a much lower chance of damage or losses. Businesses also have the ability to track inventory in real time 24/7/365.

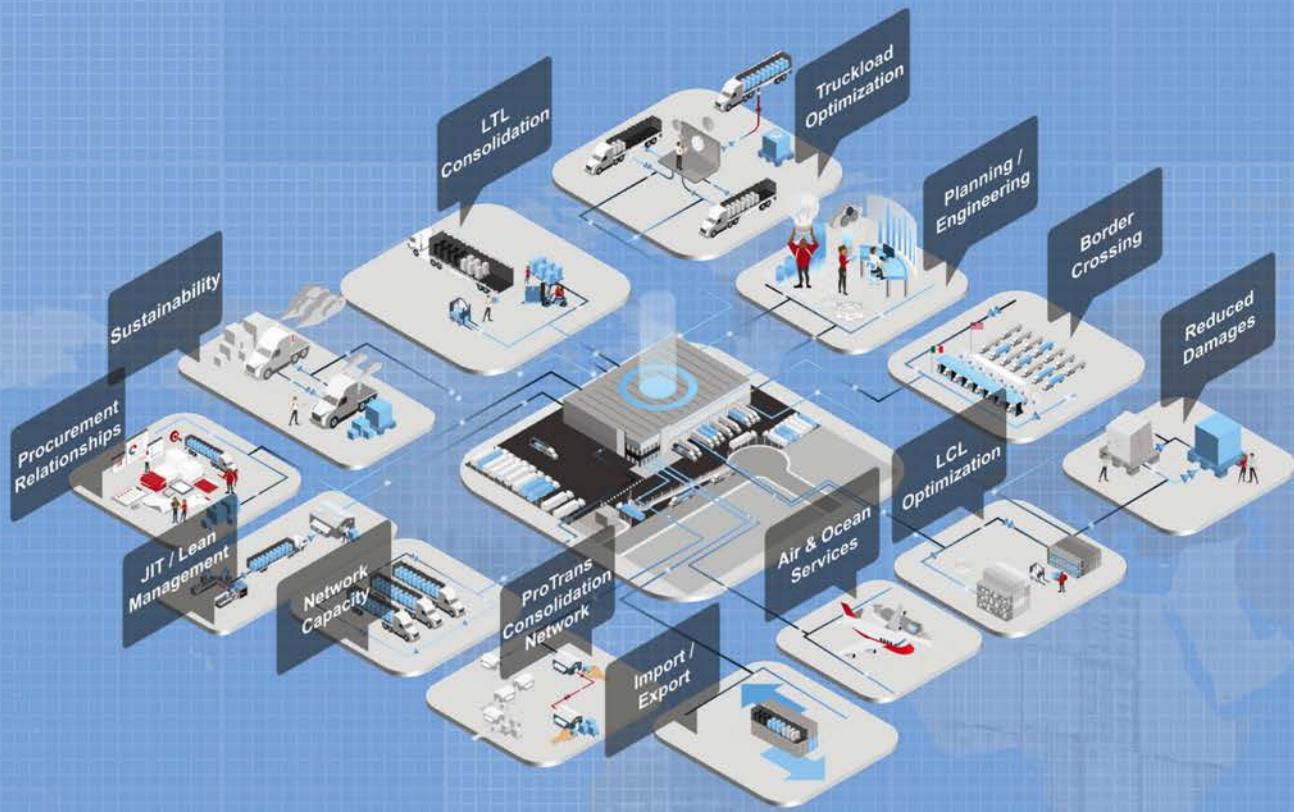
The ability to plan ahead. Planning months or years in advance can help businesses prepare for future demand, maintenance, upcoming supply chain shortages, and more.

Many organizations only utilize a single pallet per shipment when sending or receiving goods. However, they'll save money in the long run if they order enough supplies to fill all the available space since they're entitled to exclusive use of that vehicle.

By taking time to evaluate the total cost per shipment and establish a working relationship with a trusted expedited shipping provider, businesses can determine exactly what they'll need over the next year, combining multiple orders into fewer shipments and reducing overall spending.

Save money over time. Expedited shipping offers security, helps you meet tight deadlines, reduces storage costs, and allows your business to plan ahead. Real-time tracking updates and less handling also ensure a damage- and loss-free delivery with no downtime.

While supply chain disruptions may continue for a while, expedited shipping services can reduce their impact. ■



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SCRESILIENCY

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3 Ways to Build a Resilient Supply Chain

After nearly two years of pandemic-related disruptions wreaking havoc, business leaders are learning from the past and looking to the future of supply chain management.

Companies across industries are attempting to meet the moment and replace legacy supply chain practices with more dynamic tactics to prepare for the next wave of volatility. But few organizations know where to start.

To truly become resilient in the new normal, enterprises have to develop bold strategies that holistically identify gaps and prioritize intelligent supply chain solutions. In doing so, leaders can ensure their supply chains are reactive to sudden changes and proactive before a disruption even hits, saving both time and money.

Here are three tactics to get started on the road to supply chain resiliency.

1. Optimize technology. To keep pace with the evolving market, leaders can introduce a variety of tools and platforms throughout their supply chains. Perhaps the most essential solution organizations must increasingly utilize are control towers. These dashboards, enabled with predictive analytics, allow different functional areas within and outside an organization to anticipate supply chain risks in real time.

Similarly, machine learning capabilities will be central to maintain agile supply chains, identifying data

anomalies that trigger demand fluctuations and signals.

Although overhauling supply chains may seem like a monumental task, enterprises can begin to chip away at their digital transformation agendas if they are properly managed. To do so, organizations must implement short proofs of concept and strong organizational change management practices. By running the broader adoption program in incremental steps, companies can better launch each new offering and thus quickly gain value once it's adopted at scale.

2. Join the shared-based economy. Many leaders are turning to contractual supply chain collaborations to bolster weakened supply chains. By utilizing web-based planning tools and sharing certain components of their infrastructures among an organized network of partners, companies can shoulder each other's burdens and provide needed reprieve in their given issue areas—whether manufacturing, logistics, or transportation. This requires leaders to carefully identify core competencies and gaps before selecting partners.

Alternatively, leaders can look to mergers and acquisitions to expand their

core competencies and fill their gaps. Unlike partnerships though, M&A deals are definitive and thus require a more detailed vetting process. Both partnerships and M&A deals allow companies to share capabilities and bolster supply chains.

3. Operationalize supply chain sustainability. In recent years, both the public and private sectors have increasingly prioritized sustainability initiatives. Consumer product goods companies have led the private sector's adoption of greener practices, and the business world has taken note.

Organizations across industries would be wise to turn to environmental best practices to fortify their supply chains. By introducing green tactics into their supply chain strategies enterprises can become more resilient in the highly disruptive new normal.

Organizations should also revamp their overarching supply chain strategies to emphasize more agile, sustainable planning. For instance, supply chain planning measures that utilize algorithms to prioritize better transportation routes or manufacturing operations can help lower carbon emissions while also optimizing supply chain operations.

Though it may mean more time or money spent in the short term, organizations will reap the rewards of resilient supply chain management in the long term. ■

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REVERSE LOGISTICS

by John O'Kelly

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Four Tips to Master Reverse Logistics

Up to 40% of online purchases made in the past year were returned, finds recent research. Whether you're diving into e-commerce for the first time or finding your footing after the accelerated industry growth amid the pandemic, mastering reverse logistics is an essential function of your operation, now more than ever.

Think of reverse logistics as a mirror to the general logistics process—everything is backwards. Instead of picking items off the shelf, packaging them up, and shipping them off, products return to the warehouse by customer request and need to be inspected carefully to determine whether they are resalable.

With the basics down pat, check out these tips to improve reverse logistics.

1. Perfect the policy. Every good process starts with a straightforward policy that guides the workforce to be consistent. The simpler the process, the easier it is to follow. Companies like LL Bean and Zappos have some of the most popular and simplistic policies around—customers can return an item with the receipt in hand in exchange for a new item to replace the old; this builds brand loyalty.

At a basic level, your reverse logistics policy should start with where returns are delivered to the warehouse. Is it at your main docking station or a different entrance? Think about what specific days or times of day work best to take in returns.

Once on the docks, designate a specific area of the warehouse to bring items to for processing. Task a group of employees with just the returns so that they don't try to do multiple warehouse jobs at once.

A simple and straightforward process makes it easy for warehouse employees to follow the policy consistently with minimized mistakes.

2. Packaging with returns in mind.

One popular aspect of Amazon packages is that customers are able to reuse the packaging to make a return. With resealable envelopes and sturdy boxes that can be retaped, Amazon has a well-thought-out packaging system that makes returns easy for customers and warehouse employees, and promotes sustainability.

When shipping products, package them with the expectation that they could be shipped back. Think about packaging that keeps items safe from damage during transport and include "how to return" instructions for customers that include return labels and carrier choice.

3. Designate space for returned items. Have at least one space in the

warehouse that is made specifically to handle returned items. Keep in mind that returned packages aren't likely to be the same size, shape, and weight and may not be easily or efficiently stacked well. If possible, have a separate loading dock to take in returns close to the workstation and hire employees that work only on returns.

4. Invest in solutions and software. Provide employees with tools to do their jobs accurately and efficiently. Warehouse management systems are great for productivity tracking and item documentation and can be easily customized to fit your operation's needs.

Mobile powered industrial carts are an affordable way to mobilize the mission-critical tools—printers, scanners, laptops—you already have in the warehouse. With everything at their fingertips, employees gain an average of 5-10 hours per week in productivity by cutting down on wasted steps.

Investing in tools is investing in your workforce. Consider what options are within your budget and can help maximize warehouse productivity and accuracy.

It takes time to figure out what process works best for your operation, but continue to make small tweaks and go through trial and error. Eventually you will have a world-class reverse logistics department that contributes to the success of the overall fulfillment process. ■

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SMARTMOVES

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Bridging the Supply Chain Gender Gap

I wasn't the first and I won't be the last mom to pull into a parking spot on two wheels, late for a meeting, hair soaking wet and coffee spilled down the front of my shirt. Being a working mom in supply chain isn't for the faint of heart. But I'm not alone and the growing number of women entering this industry is encouraging.

Women in technology and supply chain have seen a lot of strides, and some hurdles, in the past 20 years. There is still opportunity to improve so that when our daughters hit the workforce, the corporate landscape might be more evenly matched.

Organizations within the supply chain ecosystem can take some progressive actions to bridge the gender gap and create a more equitable workplace across all roles and levels for women and working moms.

Diversity is more than a hiring campaign. Organizations that just want to tick a diversity box or decrease the gender gap in entry-level roles so they can hit a scorecard metric or make a Top 10 Employer list are missing the bigger picture and losing opportunities to propel their businesses forward.

Job candidates pay attention to what your organization looks like from top to bottom. If your website reflects a leadership page where everyone looks the same, you may want to rethink your company culture. If candidates have multiple job offers, they are more likely to choose an organization that shows

diversity throughout the ranks and has defined career paths that will foster their personal growth.

New college graduates and candidates already in the workforce can be more selective about choosing new roles, especially in a market as hot as supply chain. They will evaluate salaries, but also career development, travel requirements, benefits, and flexible work locations.

Applicants will go to organizations that value their contributions and give them opportunities for growth beyond mid-management. If the culture isn't what was advertised, they will leave for other opportunities that are a better fit.

Fresh perspectives are needed to solve growing supply chain challenges. The workforce that supports the global supply chain has been under tremendous stress for the past 18 months. The mass exodus of transport workers across the ecosystem has industry experts warning of a global transport system collapse, unless governments take urgent measures.

The crisis cannot be solved by the same rinse-and-repeat mentality. We need to

have broader views, more empathy, and fresh perspectives to solve this ongoing crisis. Organizations whose cultural DNA values diversity and gender equality will be more prone to think outside the box and lead the charge in solving supply chain problems.

Attracting and retaining top talent. Walk the walk. Your actions will speak louder than your words. It's simple.

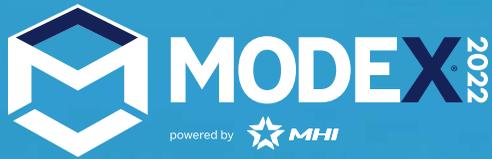
Make sure there are established career paths for women, regardless of what level they start in your organization. Highlight examples of other employees who have followed these paths.

Create programs that offer executive training for mid-management and director levels. Provide advanced supply chain training if you are looking to hire at the entry level and allow employees to develop their skill set and grow.

Offer flexibility for working moms and single parents; they will be the best multi-taskers you ever hire.

Recruit female supply chain executives and give them a platform to highlight their industry experience through thought leadership and customer engagement. They should be a critical component of your executive team with an equal voice.

Women are attracted to, and stay at, organizations where they see women succeeding. Their coffee stains are badges of honor for themselves and their organizations. ■

A large, industrial robotic arm is positioned in the center of the image, reaching upwards towards a high shelf in a warehouse. The background is filled with rows of high industrial shelving units, each containing numerous boxes. The entire scene is bathed in a blue and purple light, creating a futuristic and industrial atmosphere. A large, dark diagonal shape cuts across the left side of the image.

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[INSIGHT]

RISKS&REWARDS

by *Evan Quasney*

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Evaluate Risk Before Critical Decisions

Disruption across global supply chains has always been present, but the ongoing pandemic has magnified the risks supply chain leaders face, while simultaneously limiting response options in an already high-pressure environment.

The past year has opened the door to many risks—and response strategies—that supply chain leaders must now keep top of mind when making critical inventory, demand, logistics, and pricing decisions.

STOCKPILING AND DEMAND VOLATILITY

A wave of organizations took up the practice of stockpiling over the past year to mitigate demand and offset transportation shortages and rising prices. However, this practice can often create more headaches than it alleviates. There are costs associated with stocking extra inventory, which may very well end up being passed on to the consumer.

In this scenario, supply chain leaders should look to a more active approach to demand management to help mitigate excess inventory and avoid passing added costs on to the consumer. Identify the demand signals that are critical to your business—whether raw point-of-sale data, social sentiment, or socioeconomic data—and then align on the actions you can take to actively shape demand to account for your increased inventory.

The challenges of the past year have also demonstrated how reliant

organizations across industries are on a well-run ecosystem of suppliers, manufacturers, and logistics providers.

This ecosystem is often a global one, and while that can help with supply chain diversification, it can also lead to bottlenecks and disruptions—from tariffs and political negotiations that impact trade routes, unplanned weather events, or COVID flare-ups that can lead to factory or border closures, or temporary reduction of capacity.

Supply chain leaders can better prepare for unplanned disruptions by embedding more agility and visibility into their global ecosystem. Leveraging end-to-end supply chain management technology to share data across the supply chain in real time can help replan if downtime hits a supplier, or a factory is closed in a region. It is easier to change course on the fly, mitigate potential risk, and drive forward.

FREIGHT AND LOGISTICS

While it may have worked in the past, making assumptions at the beginning of the year about freight capacity, driver and warehouse availability, or associated costs,

is no longer an option. Instead, supply chain leaders are tasked with navigating increases in shipping volume and diesel prices, a capacity squeeze, and a driver shortage—and that doesn't account for unplanned disruptions.

Strong forecasting capabilities can help supply chain leaders more accurately predict their freight needs, and when combined with real-time visibility, can help make trade-off decisions to expedite or change lanes. They can also use more accurate forecasting to make pricing and promotion decisions that shape prime shopping windows and alleviate a potential logistics crunch in the future.

INTERACTION EFFECTS AND SCENARIOS

Often, these risks are scored or assessed independently, but never frequently compounding at the same time. Traditional risk management approaches often do not assume interaction effects, which leaves businesses more exposed when their often linear, discrete assumptions interact and produce far higher, or lower, outcomes than anticipated.

To counter, a robust and configurable scenario management approach that hinges on identifying “potential” interactions and elevating them for CXOs to review can help business leaders understand potential interactions and prepare for destabilizing options. ■

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[INSIGHT]

REALESTATE

by *Gregg Healy*

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Is There an End to Amazon's Impact?

The absorption of industrial real estate is setting all-time highs as consumer demand, with COVID-19 as its catalyst, has shifted to a greater dependency on consumers having products shipped to them rather than them visiting brick-and-mortar retailers.

While COVID has been a bust for many small retail stores, those that were able to leverage their physical presence with an online marketplace saw robust gains in sales as well as market share. This resulted in the consolidation of consumer buying options into just a handful of megaretailers, including Walmart, Target, Home Depot and Wayfair.

Meanwhile, Amazon has seen its market capitalization grow from an already staggering \$920 billion in 2019 to an even more astronomical \$1.68 trillion over just 24 months. Consumers have spoken and the investment community has reacted accordingly.

In that same two-year period, Amazon's network of physical distribution space more than doubled from 195 million square feet at the end of 2019 to over 420 million square feet, making Amazon the largest absorber of industrial real estate in North America for several years in a row. Not focused just on last-mile fulfillment centers, Amazon has absorbed over 20 distribution centers since 2019 that measure 2 million square feet or more.

But how long can this trend continue? There has also been a push for mega online retailers to increase their distribution network so that they can deliver product quicker and at a lower transportation cost. Thus, much of the industrial absorption has been fueled by these select retailers leasing large distribution centers in as many metropolitan markets as they deem necessary to get them closer to their customers.

WHERE'S THE SATURATION POINT?

But at what point is there a sense of saturation in their need for distribution facilities? Once Amazon, and the other handful of large e-commerce retailers, reach that saturation point will there be a significant slowdown in industrial absorption? Is there a point of saturation that will come sooner rather than later?

The industrial vertical has been reliant on Amazon for much of the new market absorption. But, at some point Amazon will establish some semblance of their optimal network and will not thirst for such robust new absorption. Once this is built out, there will still be a need for

new industrial distribution space as they, too, will need to continuously refine their network strategy as well as develop newer and more efficient facilities to keep up with innovation in automation.

Even if Amazon's network matures and its neck-snapping rate of absorption wanes, demand for industrial products will continue. Industrial growth will likely not slow as the pressure is on to revisit fragile supply chains and consider nearshoring or onshoring of production.

Mexico will continue to gain favor as the best option to support American consumption. This will lead to greater industrial development in gateway markets. Nearshoring will mean more advanced manufacturing jobs for North America, which will also be an area of growth for the industrial sector.

There is currently 700 million square feet of industrial real estate in the development pipeline in the United States. The investment community is also bullish about the future of industrial as the brightest (and potentially safest) spot in commercial real estate.

Amazon's amazing level of industrial absorption is just the beginning of how brick-and-mortar retail, distribution, and even manufacturing will continue to evolve, and perhaps even morph into a combination of the three verticals. Nonetheless, the common foundation is a need for more industrial development. ■



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[INSIGHT]

COVIDRECOVERY

by Josh Jungwirth

EVP of Freight Forwarding, GEODIS in Americas
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How to Combat Logistics Logjams

Nearly two years into the pandemic, today's congestion issues and logistics logjams are not expected to end anytime soon. It is imperative brands fortify their supply chains to best navigate the current environment and prepare for what unexpected challenges may lie ahead to limit future disruptions.

A burning question facing retailers is if and when customers will return to purchasing in stores similar to pre-pandemic patterns rather than buying nearly anything and everything online.

Historically, many shippers have bifurcated their buying decisions, supply chains and fulfillment strategies based on sales channels, which generally provides a lower cost basis when done well. However, to thrive today, retailers must embrace omnichannel fulfillment strategies.

Looking ahead, omnichannel optimization will be critical to current business models. Newly defined consumer behaviors will meet and synthesize with various buying patterns. In some industries and within certain demographics, e-commerce may retain its status as the primary buying channel. In some situations, however, there will be a reversion to a combined model of traditional brick-and-mortar retail and e-commerce. It is crucial for retailers to be more agile to meet customer expectations within a variety of purchasing methods, whether online, a mobile phone app or in-store.

To help combat ongoing industry labor issues, it will become imperative that brands make smart investments in automation.

Automated fulfillment solutions support the demand for speed and accuracy. Automated technologies, such as put-to-light walls, sorters, conveyors and pack-and-apply machines, can offer faster and more efficient handling of units while reducing the demand on teammates to perform highly repetitive tasks.

The pandemic has underscored automation and robotics can provide a defensive strategy to supply chain disruptions caused by the lack of labor availability.

RETHINK DELIVERY STRATEGIES

Many retailers were surprised by the capacity constraints in the parcel delivery network at the onset of the pandemic created by the influx in online orders. In the past, the emphasis was on securing the lowest cost with the best incentives, typically through one parcel provider. However, in order to best address

network constraints moving forward, shippers need to adopt a more diverse delivery strategy.

For many, this means using multiple national parcel delivery carriers along with regional providers. This ensures they have the capacity to get their products to the end consumer when needed to create a satisfactory purchasing experience.

Additionally, we continue to experience capacity challenges out of Asia. The pandemic reduced capacity at a much quicker rate than the reduction of trade demand, increasing freight costs and decreasing transit reliability.

Ongoing port congestion is forcing many retailers to consider air transportation. Because passenger belly space remains lower than pre-pandemic levels due to limited international travel, retailers are renting entire cargo aircrafts to help offset capacity issues.

With this in mind, it is critical brands rethink delivery strategies. For many, this means shifting from a single-source supply chain to establishing multiple manufacturing centers with their own supply chains and delivery strategies in order to be more agile.

By embracing an omnichannel mindset, automation technologies and diverse delivery methods, brands will have the strategies in place to best navigate unexpected logistics logjams in the future. ■



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NJ Falk,
Managing Partner,
Athletic Propulsion Labs, LLC





[INSIGHT]

LASTMILE

by *Aaron Hageman*

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Last Mile Predictions and Priorities

Since COVID-19 shut down the world, the delivery industry as a whole experienced exponential growth. The rise of e-commerce platforms stretched last-mile delivery to its limits. The pandemic forced more people to consider delivery services and now consumers love the convenience. This preference for delivery over in-person shopping will continue into the future even after the pandemic.

The continued demand and expectation for last-mile delivery requires new solutions to optimize a strained supply chain. So what's next for the last-mile delivery industry in 2022?

The middle mile is next. FedEx, UPS, and USPS will look at automation and omnichannel solutions to fulfill the supply and demand needs of today's consumers. Expedited shipping is no longer a luxury, but an industry standard.

Micro-fulfillment (middle mile) strategies emerged as a leading solution, providing drivers more opportunities. Automation and technology help support middle-mile strategies while potentially offering drivers higher earning opportunities.

Delivery density will increase. With COVID-19, many industries pivoted to adapt to demand, which meant leaning into delivery. As a result, delivery density is increasing. With increased delivery demands, smart solutions like routed delivery and micro-fulfillment make drivers' lives easier.

Industries are beginning to utilize omnichannel strategies for their last-mile delivery needs. Businesses need to develop multi-pronged strategies to manage overflow that is common with third-party collaboration.

As independent contractors, drivers also have the opportunity to partner with more than one company for deliveries. This promotes more earning potential, better driver engagement, and overall work satisfaction.

The more retailers and delivery companies share drivers, the more they leverage the independent contractor ecosystem. Sharing drivers allows businesses to become more efficient with their third-party vendors and become more competitive overall.

Incentivize drivers. This year brought labor shortages across the board and delivery drivers were no exception. Businesses need to think about the infrastructure of a delivery program and who will handle the operations. When utilizing 1099 workers, businesses have to consider the

entire process—from onboarding to accounting—as well as insurance and risk management needs.

Increasing driver retention is simple: Improve the 1099 HR experience. Offering drivers more opportunities, and daily versus weekly payouts helps improve the 1099 HR experience, thereby increasing driver satisfaction and retention.

1099-Independent Contractor evolutions continue. It's 50 states with 50 different tests. When California voted "Yes" on Prop 22, evolutions included minimum wage and insurance guarantees, which required more recruitment work for businesses. Several other states, such as New Jersey, are following suit and are primed to adapt their own regulations. These new rulings will impact the gig economy, insurance, taxes, and entrepreneurship.

Next year will continue the heated battle over the future of gig work in different states. The aftermath of the Prop 22 rulings affected both workers and consumers. Though there are some benefits to workers, negative impacts to consumers include delivery charges increasing, gas surcharges, and customer fees being renegotiated. This can cause decreased driver earnings as rates change behind the scenes. Ultimately, the customer experience suffers due to fewer drivers and longer wait times.

Looking ahead, the delivery industry isn't slowing down. Businesses need to consider making changes to stay afloat. ■



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[INSIGHT]

SCSECURITY

by Jeffrey G. Tucker

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National Security Starts With Individual Manufacturers

Shortages of personal protective equipment (PPE) and other critical supplies like pharmaceutical ingredients and materials used in key technologies during the earliest days of the pandemic prompted the Biden-Harris Administration in 2021 to outline steps strengthening critical supply chains. It's a long-overdue move that to some transportation experts may not go far enough in protecting national security.

Overly concentrated supply chains are the definition of national insecurity. The weeks of empty meat cases and grocery shelves experienced during the pandemic prove the fragility of the basic supply chains that impact every American every day. But we won't achieve national security until each one of our citizens is made secure by the free and dependable flow of necessities.

During disasters, even "safety" inventory doesn't stop the run on our stores. What businesses must do is have more resilient and redundant supply chains, with alternative resources and suppliers. That way we will not be entirely reliant upon China, slow ocean freight, and slow port operations for so many critical goods.

We must begin to address this situation, or we can never minimize the risks that bare necessities may be cut off

from all small communities and urban neighborhoods. Until we do that, we just won't be there.

NOT EVERY AMERICAN KNOWS HOW DIRE SHORTAGES OF CRITICAL SUPPLIES BECAME IN 2020.

The Biden-Harris Administration's Supply Chain Disruptions Task Force outlined how to secure rare minerals, the raw materials of pharmaceuticals and lithium for batteries. These items are also critical to our national security.

During the early days of the pandemic, the availability of life-saving essential items was threatened, and the role of the global supply chain in national security got real. Medical equipment and PPE became scarce commodities when they were most needed to save lives.

If all these materials are dependent

upon China exporting them to the United States, the risk to our economy and our daily lives during an armed conflict, heavy-handed diplomacy, or a more serious pandemic becomes clear.

Most of our critical supplies are dependent upon a potential adversary. China's leadership watched this leverage play out during the pandemic's shut down of the economy and saw how the U.S. economy and citizenry could potentially be choked without firing a shot.

Government can only do so much in protecting supply chains. The Biden-Harris Administration is instituting the big changes that only a government can do. But if we define national security through the eyes of 335 million Americans, more needs to be done to secure global supply chains all the way down to the individual level.

If this is the case, the main actors charged with maintaining supply chains that protect individual security must be the individual producers, manufacturers, and merchants.

The supply chain decisions of sellers have tremendous impact. The collective role of individual companies in securing the global supply chains is everything. Through diversification of transportation and logistics resources, inventory

America must encourage and incentivize business to manufacture in multiple locations or risk watching a dangerous, dysfunctional supply chain we created ourselves one day cripple the nation.

management practices and sourcing strategies, they can bolster national security in a way that the government isn't equipped to do on its own.

Diversifying transportation partners is a key component. During the pandemic, producers with limited relationships with trucking companies were left with few options when their carrier partners failed. Their fates were tied.

For that reason, Tucker Company Worldwide favors a diversified approach that leverages micro-carriers, readily available and easily adaptable in changing conditions. Economics of the marketplace are favorable for small fleets to start and grow. The growing availability of multiple owner-operator trucking companies, and small to mid-sized carriers insulates manufacturers from uncertainties and provides options during disruptions like we saw during the pandemic.

To build a diversified transportation strategy, manufacturers have an incredibly challenging time hiring these carriers on their own. There are too many. They may never encounter that carrier again, and with the myriad of contracts, insurance, and other variables, it's too much to manage.

Alternatively, they can work with freight brokers who work with carriers of all sizes and specialties and will vet and negotiate on behalf of shippers.

Retailers are holding more safety stock and increasing lead times. Inventory strategies that hold safety stock and disperse inventory geographically are another means of ensuring supply chain continuity. As a result of pandemic-related shortages, 43% of companies surveyed by Gartner said they were increasing inventory and 11% planned to do so within two years, indicating a major move away from just-in-time practices is underway.

Companies that rely on often-unpredictable ocean transport are driving an increase in production lead time to 88 days—the highest level since 1987, according to the Institute for Supply Management.

BUILDING ON THE BIDEN-HARRIS ADMINISTRATION'S CALL FOR RESHORING.

A significant part of the Biden-Harris Administration's plan supports domestic sourcing strategies for key materials and products, but what about the basics individuals suffered without during the COVID crush? Promoting domestic production mitigates supply chain risk at the source.

Diversifying manufacturing origins is another option. Nearshoring options in Central America and the Caribbean can mitigate the risk of being too heavily leveraged in source countries, trade lanes, and ports of entry.

Puerto Rico is an example. Its pharmaceutical industrial base is experiencing a lift post-pandemic. Shifting production closer to home enables companies to sidestep port congestion in the China to Los Angeles-Long Beach lane, too. America must encourage and incentivize business to manufacture in multiple locations or risk watching a dangerous, dysfunctional supply chain we created ourselves one day cripple the nation.

Landed transportation is the national security linchpin. The success of inventory, reshoring and nearshoring strategies hinge on reliable inland transportation. While the federal government is making moves to strengthen certain critical supply chains, it is equally important for individual producers to complete the task by diversifying their carrier mix to mitigate a world of risks to Americans' basic needs.

With more and more global supply chain disruptions being out of companies' hands, companies need to take measures to diversify supply chains that provide individual security. In that way, we all play a role in increasing national security. ■

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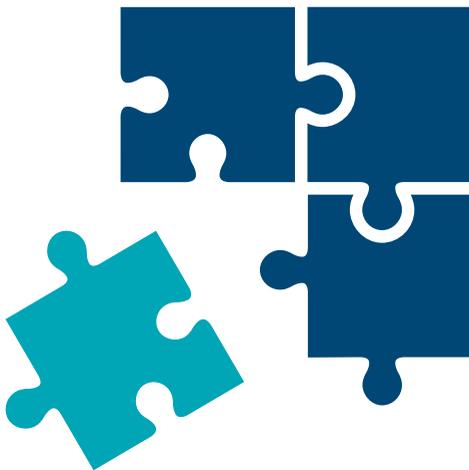
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From achieving freight savings through spend optimization to executing a warehouse move in record time, these case studies highlight ingenuity and the ability to solve complex supply chain, logistics, and transportation challenges.



Supply Chain Challenge? **SOLVED!**

94 CURATING IN-TRANSIT VISIBILITY FOR FINE ART CLIENTS

Tive

95 BRINGING INSIGHT AND SAVINGS TO A RETAILER'S FREIGHT SPEND

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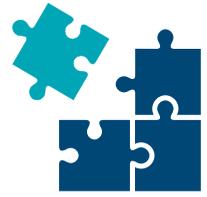
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102 WHEN THE RUBBER MEETS THE ROAD: WAREHOUSING SOLUTION GOES ON OVERDRIVE

Evans Distribution Systems

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RedStone Logistics



Supply Chain Challenge? **SOLVED**

Curating In-Transit Visibility for Fine Art Clients with Tive

Tive’s location tracking and real-time condition monitoring capabilities allow Masterpiece International to manage high-value shipments, providing clients with superior service and peace of mind.

THE CHALLENGE

Masterpiece International is a provider of premier logistics solutions that serves museums, collectors, galleries, and private clients, shipping priceless works of art worldwide. From coordination to packing to transport, Masterpiece utilizes a massive global network to ensure shipments arrive on time and in full.

In fine art shipping, the logistics are complex and the risks are high: Shipments tend to be fragile and often have immense cultural significance. As such, temperature, humidity, light, shock, and security must be actively managed, alongside precise arrival times for highly coordinated installations.

Masterpiece International has long provided best-in-class customer service to clients, with exceptional hands-on attention paid to protecting each high-value, often fragile, shipment. According to Tina Sullivan, vice president of fine arts for Masterpiece International, “Normally, a fine art shipment travels with a courier from each museum—a dedicated person stays with the piece through every step of its transport from point A to point B.”

However, when the COVID-19 pandemic disrupted both the art and logistics worlds, Masterpiece faced serious challenges to uphold this level of service. Sullivan explained, “The pandemic complicated this practice with travel bans, import and export



restrictions, and an overwhelming hesitancy from museums to put their people at risk.”

Determined to maintain full shipment visibility without a courier during these unprecedented times, the company took immediate action to meet clients’ changing needs.

THE SOLUTION

With the availability of high-tech solutions capable of providing location and condition insights in real-time, the company saw an opportunity to keep high-value art moving without human accompaniment and continue to meet client expectations.

Masterpiece’s hunt for an in-transit visibility solution brought them to Tive. After testing trackers from multiple companies, they determined Tive—as well as the Tive belief that “every shipment matters”—was a great fit for both their company and their clients.

In late spring of 2020, Masterpiece began using Tive trackers to accompany fine art shipments instead of couriers. Tive’s hyper-accurate location tracking

capabilities (enabled by cellular, GPS, and WiFi) and real-time condition monitoring (including temperature, humidity, shock, and light) allow Masterpiece to actively manage these high-value shipments, while providing their clients with superior service and peace of mind.

“We love Tive. We looked at others, we’ve used others, and we much prefer Tive. And the disposable aspect of the trackers is really appealing—you can spend weeks trying to get devices back, and with other companies, it gets costly,” explained Sullivan.

The instant alerts and real-time visibility provided by Tive’s cloud-based software also allow the Masterpiece team to address in-transit issues and collaborate with carriers to prevent costly delays and damage.

The benefits of the Tive solution don’t stop there, however. Sullivan noted, “With courier costs among the most expensive aspects of shipping fine art, Tive provides significant cost savings. It’s a value-added service that our clients really like.”



To learn more:
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Supply Chain Challenge? **SOLVED**



Bringing Insight and Savings to a Retailer's Freight Spend

AFS helped an agricultural supply retailer achieve freight savings through spend optimization and a more flexible carrier mix, as well as gain benefits from an automated shipping process.

THE CHALLENGE

Throughout its 35-year history, an agricultural supply retailer has quickly grown through acquisitions and is poised for additional growth in the coming years. As a result of this growth, the retailer now has production facilities in several states across the United States.

While the growth was mostly positive, it led to a decentralized environment for shipping and little transparency to uncover opportunities for optimization. Plus, the company had limited time to negotiate rates and service standards.

In addition, the retailer's manual freight shipment process required two employees to be at their desks all day processing orders for shipment. The company's chief financial officer (CFO) had little time to source a variety of carriers, negotiate contracts, ensure pickups were being made, and evaluate key performance indicators on service and claims.

All the freight negotiating was on the CFO's plate. Lacking the time to focus on it, the retailer would see freight increases on their shipping invoices but didn't have the insight to determine why it was happening. These freight increases became especially bothersome as time went on and the situation reached a breaking point. The CFO decided to explore outside resources to evaluate the company's freight spend.



THE SOLUTION

The CFO agreed to let AFS conduct an audit of the retailer's parcel and freight spend. AFS determined they could achieve significant savings by negotiating better rates, also they could reduce their less-than-truckload (LTL) spend by adding regional carriers to the mix.

AFS suggested adding more flexible regional carriers to the LTL mix so the retailer wasn't solely reliant on larger carriers. Sometimes, regional carriers offer shorter transit times, better service, and lower costs.

In addition, AFS implemented their transportation management system (TMS) to automate the retailer's manual freight shipment processes. The TMS allowed the retailer to use

least-cost carriers to reduce cost and keep their bottom-line lean.

An analytics tool enabled transparency in the retailer's spend and aided in rate optimization to further reduce costs. The retailer also gets weekly reports from AFS on what could have been done differently to achieve more savings.

With AFS's help, the retailer achieved 22% savings on parcel rates through spend optimization and 7% LTL savings with a more flexible carrier mix. They also

benefited from an automated shipping process with AFS's TMS.

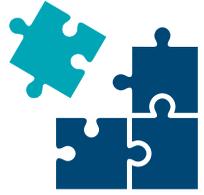
As the relationship progressed, AFS recommended additional services to optimize the retailer's shipping and uncovered opportunities for cost savings in other segments of their logistics operations. Today, the retailer relies on AFS for LTL, parcel, freight audit and payment, truckload, and international.



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Supply Chain Challenge?

SOLVED



3PL Leverages LoadDex to Win More Loads and Grow Its Business

LoadDex from Logistical Labs lets Sunset Transportation take a strategic focus when making pricing decisions, improving customer opportunities and fueling year-over-year growth.

THE CHALLENGE

Sunset Transportation was looking for a solution to enhance its quoting performance and efficiency. The third-party logistics company used a variety of rating techniques that included outdated and broad information coming from several different sources.

The quoting process was time-consuming and pricing decisions involved a fair amount of guesswork. With speed and accuracy of the utmost importance, Sunset Transportation needed a better way to quote and win more loads.

THE SOLUTION

Sunset Transportation turned to LoadDex to solve its pricing challenges. LoadDex provides users with accurate truckload rates in seconds by aggregating all market sources, historical rates,

contract rates, and social data into a single platform. The platform also allows users to create their own pricing algorithm to further eliminate guesswork. LoadDex's easy-to-use, intuitive interface empowers users to ramp up and succeed quickly with little training.

Sunset Transportation took a two-pronged approach when deploying LoadDex. The first was leveraging the platform to manage user-level quoting, which enabled managers to analyze quote performance by person and by region. From there, they could standardize quoting metrics and enforce better margin strategies internally.

The second was using LoadDex to improve customer relations. They could monitor customer spot quote performance, convert consistent spot-quote lanes to contracted business, and establish trend lines that showed

which lanes were worthwhile to continue quoting.

Through LoadDex, Sunset Transportation identified its weak spots and tweaked margin percentages based on where it had the biggest success rate—ultimately leading to a doubled win percentage in one year. By using LoadDex's pricing intelligence and with the ability to adjust rates through adaptable truckload rulesets, Sunset Transportation's reps felt more confident when quoting.

RESULTS

- Doubled win percentage in one year from 20-25% to 40-50%
- Improved spot quote performance
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- Improved ability to determine good vs. bad customer opportunities

LoadDex ultimately allows Sunset Transportation to take a strategic focus when making pricing decisions, leading to better customer opportunities and year-over-year growth.

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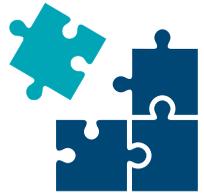


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Supply Chain Challenge? **SOLVED**



Reusable Shipping Technology Advances in the Pharmaceutical Industry

Sustainable shipping technologies in the life sciences and pharmaceuticals industry have come a long way, offering significant supply chain benefits.

THE CHALLENGE

When temperature-sensitive pharmaceuticals and therapies were first introduced, they required a great amount of shipping materials to keep them both properly protected and within their temperature requirements. In the industry, we refer to all of the components that are used to properly ship products as pack outs. The components that make up these pack outs are often intended for single-use.

While these components are necessary to ensure the product stays safe for consumption, they do lead to a great deal of waste after delivery. As the world experienced a push toward more sustainable methods and technologies as it relates to every aspect of life, including shipping materials, the pharmaceutical industry searched for a more sustainable way to ship their temperature-sensitive products.

THE SOLUTION

In the logistics industry, initiatives around green warehouse technologies and sustainable packaging have become increasingly important. At MD Logistics, in our life sciences and pharmaceuticals vertical, we have seen many of our clients make the shift from traditional shippers to more sustainable options.

Sustainable shipping technologies are not a new phenomenon, but options available to those operating



specifically within the life sciences and pharmaceuticals industry have come a long way. There are various benefits to incorporating a sustainable shipping technology into your pharmaceutical supply chain.

Simplified Pack out. Reusable shippers simplify the pack out process by drastically cutting down on the individual needed components. Complicated pack outs can lead to issues.

Streamlined Fulfillment. Historically, a pack out could differ both by client and the item being shipped. A sustainable shipper provides a few pack out options to accommodate a range of temperature requirements.

Cost Savings. Sustainable shippers do have the potential to offer significant cost savings to the client. While the upfront costs might be more, after the shippers have been used a determined number of times, cost savings can be realized when compared to traditional shippers.

Supplies Replenishment & Quality Checks. Replenishment of supplies and quality control checks on the

shippers themselves are oftentimes performed by the vendor on a consistent basis, ensuring all shippers are performing to the standard the client's product demands.

Vendor Management. Historically, choosing a sustainable shipping option is a decision that is driven by the client. Once our client chooses a vendor, we work with that vendor to ensure processes are in place in our facilities to ensure fulfillment is as streamlined as possible. It is important to verify that the shippers can fit on conveyors, IT systems can handle additional data, and the shippers themselves, once packed, aren't too heavy to lift.

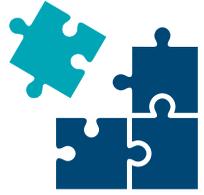
Environmental Impact. Perhaps the largest driver behind a sustainable shipping solution is that of the impact it has on the environment. Traditional shipping solutions are typically made of single-use materials, contributing to excess waste in landfills. A sustainable shipper utilizes reusable elements, cutting back on waste and reducing environmental footprint.



To learn more:
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Supply Chain Challenge?

SOLVED



Masterful Moves: Overcoming Deadlines, Pressures, and the Pandemic

Holman Logistics provided its client with *Extraordinary Service* resulting in seamless execution for a warehouse move done in record time.

THE CHALLENGE

Seeking to optimize its Northwest omnichannel supply chain operations and having outgrown its existing 204,000-square-foot distribution center, one Holman Logistics client needed a new facility. The major consumer lawn and garden products supplier needed a space that could better accommodate its growing omnichannel operations and updated picking processes—and it needed the new space fast.

While the typical timeline to find a building, negotiate and execute a lease, and move product is roughly 12 to 18 months, this move would have to be much shorter: In April 2020, the client made the decision not to renew its lease, which would terminate at the end of September. That gave Holman just five months to locate a new facility and execute the move, which included relocating 200 truckloads of product.

Adding to the complexity, the entire process was orchestrated during the COVID-19 pandemic, so operations leadership from the consumer lawn and garden products company were not able to evaluate the site in person and make sure the facility met their needs. Instead, the company would be relying entirely upon Holman Logistics to deliver truly extraordinary service, acting as its eyes and ears and hands by executing the process on the company's behalf.

One final wrinkle—the client wanted to find a location that would be more

cost-effective than its existing one, which was in an area where lease rates and taxes had increased greatly.

Holman Logistics was up to the task.



THE SOLUTION

Holman used ESP, their proprietary process to provide *Extraordinary Service*. Using Holman operational expertise and Extraordinary Service Process, the client's operations team was able to examine the new facility and work seamlessly with Holman to accomplish the move.

To ensure flawless project execution, Holman Division Manager Steve Stewart and Director of Continuous Improvement Don Hornsby worked closely together throughout the process. Hornsby acted as team lead on the project, tasked with overseeing everything from facility design and set up to proper installation of technology and hardware; management of vendors, permits, and service installations; meetings with the landlord and contractors; and transfer of products to the new DC, which was done in strategic phases over a defined 6-week period.

The Holman Extraordinary Service Process included:

- Maintaining constant communication via weekly phone/video/photo updates
- Suggesting process changes like setting up pick lanes based on velocity rather than volume in order to boost productivity
- Creating a detailed project plan to ensure air-tight deadlines
- Tapping into existing vendor relationships
- Using the Holman ground transportation team to maximize flexibility
- Expediting purchases of materials, equipment, and permits.

Ultimately, the move was completed on-time and under-budget, earning Holman a prestigious honor: the 2020 Partnership Award, given to the client's most valuable partner each year. For Holman, however, the move was simply a normal part of living up to its Brand Promise: *Extraordinary Service for Over a Century*.



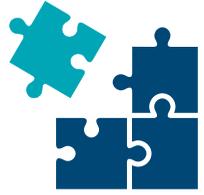
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Supply Chain Challenge?

SOLVED



Fortune 500 Company Takes Control of Inbound Program

Tucker Company Worldwide provided a petroleum refiner oversight and control of its shipments—reducing freight costs, increasing flexibility, and ensuring safety compliance.

THE CHALLENGE

A household name in the petroleum industry was struggling to effectively manage its inbound logistics program. Each year, \$4 million in freight spend was hitting multiple budgets—all of which were unaccounted for, as inbound orders were arranged by a combination of field engineers, managers spanning various groups, and third-party vendors.

Not only was the company overpaying, and often double-paying, losing millions of dollars a year, but they were putting mission-critical operational decisions in the hands of their suppliers who had little to no logistics expertise. There was no cost control, visibility, oversight, or adherence to important facility safety protocol. Many valuable shipments weren't even insured.

THE SOLUTION

When Tucker Company Worldwide was asked to audit the company's freight expenditures and purchase orders, we identified several immediate savings opportunities. In addition to solving 100% of the undiscounted air, truck, and expedited freight bills, we uncovered systemic procedures that led to even more expensive errors.

Vendors regularly overspent via "prepay and add" terms and often charged for second (and third) shifts to make products that weren't required for weeks. Plus, lack of visibility during critical refinery shutdowns



and turnarounds was costing time and money.

To get the company a better handle on its shipments, a simplified routing guide was initiated, and all freight requests were centralized through Tucker. This allowed the company to gain much-needed oversight and control. Tucker harnessed its buying power, historical lane data, competitive market analyses, and extensive stable of carriers to reduce freight costs, increase flexibility, and ensure 100% facility access, insurance, and safety compliance.

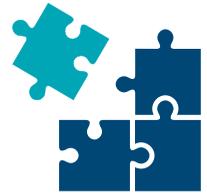
The second savings cut came when the company's procurement and transportation leadership collaborated with Tucker to support ongoing education and organizational behavioral change. Educating internal and external stakeholders of the problem, the need for change, and the solution that had been developed was key to the success of the program. As a result, Tucker saw a dramatic reduction in last-minute and "no-notice" freight calls by both the company and its vendors.

The next, most exciting, change came when the reduction in overall capital expenditures was realized. Tucker achieved this by addressing systemic issues, such as company personnel ordering goods to be delivered early "just to be safe." (As a result, some of their vendors were spending capital weeks sooner than necessary and adding expedited manufacturing and freight costs. Some chartered flights were booked unnecessarily for products that were not needed for days or weeks.)

By bringing these issues to light and implementing its cost and procedural controls, Tucker was able to reduce the true cost of the goods and cut inbound costs by 67% in the first year. Once the company's personnel understood the factors and behaviors that led to unintended, uncontrolled costs, they became committed to the efficiencies and savings the program provided. By the second year of Tucker's inbound program, costs were cut another 62%, and, in year three the company saw an additional 53% reduction in costs.



To learn more:
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Supply Chain Challenge? **SOLVED**

Pool Distribution Increases the Speed to Market for Fast-Fashion Giant

A major fast-fashion retailer got a leg up when SEKO Logistics streamlined workflows with a 24/7 performance portal to manage metrics, outside market conditions, and costs.

Fast-fashion retailers, like Forever 21, work with designers for both regular fashion items and collections which are, in turn, themed and timed for release around traditional retail sales events. However, a key differentiator between fast-fashion and traditional retail is that inventory for fast-fashion is determined during the design phase and pushed through the supply chain directly from origin to store; instead of the typical planning and ordering by the individual stores to meet sales projections.



A control tower process enables data management from the DCs, into the client systems, and concurrently back into SEKO's systems to meet any financial expectations. In addition, this performance portal tracks DC-to-store delivery metrics, delivery window accuracy, and carton forecasts.

Daily snapshots are relayed to the management team to monitor key metrics, and a highly controlled master delivery schedule ensures DCs deliver within scope to save on added labor expenses.

SEKO provides 24/7 management of DC performance metrics and develops responses to provide continuous improvement to the client's supply chain. Enhanced customer service communication drastically improves client-side visibility, providing a means to manage operational responses within established cost constraints for a truly scalable solution.

THE CHALLENGE

Due to the fact that shipments are controlled by the origin manufacturer, the local warehouse has no visibility to the incoming inventory—hence no volume projections—until the distribution center (DC) processes cartons to SEKO for transport to destination markets.

To maintain transparency, IT infrastructure needed an upgrade and alignment to address data management best practices and workflow management.

From line haul to the last mile, SEKO created an intake variance/condition reporting workflow detailing truck routing in accordance with the daily forecast and POD process. This new operational workflow enabled the compilation of clean data to maximize financial workflow efficiency.

THE SOLUTION

SEKO Logistics worked hand-in-hand with our partner to increase visibility and ensure the yard has sufficient resources, planning, and contingency equipment to handle any unexpected spikes in volume, while also managing store inventories for exception events such as road closures and COVID response conditions.

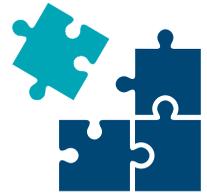
SEKO provided the client with an SLA/KPI live-update portal that enables Store Managers, District Managers, and HQ OPS to access a daily forecast of arriving inventory to plan for unexpected needs. Using industry-standard IT specifications for creating and maintaining SEKO's data feed, freight milestones were converted to XML format for complete end-to-end alignment.



To learn more:
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Supply Chain Challenge?

SOLVED



Scalable Automation Boosts Productivity for Peak Season and Beyond

Verst's partnership with Locus Robotics addresses labor challenges by using system-guided robots, enabling Verst to fill orders faster and with pinpoint accuracy.

THE CHALLENGE

With recent increases in e-commerce, specifically during peak season, consumer demand is rapidly growing, and companies are struggling to keep pace. The current labor shortage and seasonal peaks have become a pain point for all industries, and it is an issue that is not going away soon, if ever. In the next decade, there will be enormous pressure and obstacles to find labor both in and out of peak season.

How businesses adapt to this labor shortage will cause their overall company success, or sometimes failure. In the supply chain industry, current labor demands outnumber the available workforce by a six-to-one ratio. According to a 2018 study by Deloitte, the gap could leave an estimated 2.4 million positions unfilled through 2028.



THE SOLUTION

The key to addressing this labor shortage crisis, both on a long- and short-term basis: automation and technology. These solutions offer tremendous potential to address labor and productivity growth challenges.

Verst Logistics has helped its customers combat this labor crisis and peak season influx through scalable automation and industry-leading technology including autonomous mobile robots (AMRs), an automated shipping sortation system, and a Tier-1 Technology Suite powered by Korber WMS.

Verst's partnership with Locus Robotics, a leader in state-of-the-art robotic technologies, addresses labor challenges by using system-guided robots. The robots work alongside Verst employees to assist with picking and packing. The robots drastically decreased the time Verst associates spend walking throughout the warehouse, allowing associates more time for picking, therefore increasing productivity.

This increase in productivity allowed Verst to fill 100% of the positions needed for the 2021 peak season due to the reduction of seasonal associates needed. The robots have also enabled Verst to fill orders faster and with greater accuracy, resulting in greater overall productivity and 99.7% order accuracy.

"One of the most impressive things about the automation is the accuracy of pick; we have seen our numbers reach as

high as 99.9% with some of our clients," said Dean Hoerlein, VP of Distribution and Fulfillment.

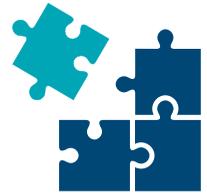
Verst increased its number of robots by 60% to prepare for the surge in orders during the months of November and December 2021. At the height of the holiday peak in 2021, 99.5% of orders were on time, over 2.6 million units were processed.

Another core area of automation at Verst is the shipping sortation system. This automated system processes 6,000 cartons per hour with a 98.7% read rate. It reduces manual processes and labor needed to confirm orders and provides shipment information to the end consumer.

With this automation and technology in place, not only did Verst and its customers have an incredibly successful peak season, but it has enabled them to increase productivity and better utilize resources in short supply. Verst continues to research and implement further automation to scale its operation to provide growth and flexibility for its customers, not just in peak season but all year round.

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Supply Chain Challenge? **SOLVED**

When the Rubber Meets the Road: Warehousing Solution Goes on Overdrive

Evans Distribution Systems deployed its warehousing solution to ensure a rubber manufacturer's tires arrived at its customer locations from Taiwan on time, damage-free, and with costs contained.

THE CHALLENGE

American Kenda Rubber manufactures automotive, bicycle, powersport, trailer, and wheelchair tires in Asia. Seventy-five containers of automotive tires were en route from Taiwan when the company learned that the U.S. government was imposing elevated duties (anti-dumping duties). Kenda needed to find a provider of warehousing services in a facility designated as general-purpose Foreign Trade Zone (FTZ) located near their Columbus, Ohio warehouse quickly, to avoid the unanticipated costs.



But the logistical challenge was only just beginning, and Evans Distribution Systems' solution would go far beyond the FTZ. Tires already en route to both East and West Coast ports needed to be intercepted before entering U.S. Customs and rerouted to the Detroit ramp for entry into Evans' Foreign Trade Zone. Port congestion, backlogs, and bottlenecks meant containers were arriving at different times and different locations, adding further complexity to the already complicated international logistics challenge.

The government imposed a restrictive timeline during which the tires could be released from the FTZ into U.S. commerce duty-free. The documentation needed to be 100% accurate and the timing had to be precise to clear the tires and release them from

the FTZ within the designated window to avoid the additional taxes.

THE SOLUTION

Evans' transportation team went into high gear to redirect 75 containers to Detroit all while maintaining the documentation. Upon arrival at the warehouse, Evans increased staffing resources to ensure containers were unloaded, inspected for damage, and inventoried by SKU. The inventory list had to be error-free otherwise FTZ status would be jeopardized.

A second shipment of 57 containers arrived a few months later. Evans arranged the drayage from the ramp to the warehouse. Once received at the warehouse, the containers were unloaded by the Evans team in the FTZ after which Evans arranged for the return of the empty containers.

Next, Evans helped Kenda prepare for the tires' release from the zone. U.S. Customs determines a specific time period when goods can be released from

the zone known as the Gap Period. To prepare, Evans reviewed timing on previous clearances and ran test clearances to understand how long the government would need to process the paperwork. A week before the window opened, they had a final run-through of the physical and electronic elements for the FTZ exit. In the end, all 132 containers were released in two weeks and successfully avoided the anti-dumping duties.

Evans' Progressive Distribution Centers, Inc. division implemented the Foreign Trade Zone warehousing solution while its Evans Logistics Inc. brokerage division arranged carriers for the outbound loads and scheduled pick-up and delivery appointments at Kenda's customer locations throughout the United States.

All in all, the Evans team helped Kenda reach their key goals. Kenda utilized an FTZ warehouse to legally avoid elevated duties. And they ensured their tires arrived at their customer locations on a restrictive timeline, damage-free, and at the least amount of cost to Kenda.

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Supply Chain Challenge?

SOLVED



3PL Outsourcing Beyond the Initial Goals

RedStone understands that cost savings are just a part of each client relationship; a 3PL must provide more if the relationship is to withstand the demands of an ever-changing supply chain.

THE CHALLENGE

Outsourcing logistics operations to a 3PL isn't new. Unfortunately, disillusionment after a year or two isn't new either and can result in dissatisfaction. The experience of a RedStone Logistics client that manufactures and distributes outdoor recreational equipment across North America illustrates this challenge.

For Alan, the company's director of distribution and domestic logistics, his frustration was at a point that he knew he had to make a change. "We hired a 3PL to help us save money and ultimately to turn our supply chain into a competitive advantage. Early on, the savings were there, and the 3PL team did everything we told them to. But," he added, "why should we have to tell them what to do? They are supposed to be the experts."

"Our business was growing, and we were not sure that our 3PL was looking beyond cost savings to improve our supply chain as business expanded. What we really needed was a partner who would drive innovation and challenge our ideas if they weren't the best for our business."

Clients are looking for additional assistance and efficiencies, not just reduced costs. Some 3PLs, having worked hard to deliver on early promises, fall into an operating rhythm with current clients and then must turn their attention to meeting expectations of



Growth industries such as recreational equipment require a 3PL partnership that looks beyond initial cost savings to improve supply chain efficiency and customer satisfaction.

new clients that are coming onboard. Culturally, the two organizations may be focused on different priorities.

THE SOLUTION

RedStone understands that cost savings are just a part of each client relationship; a 3PL must provide more if the relationship is to withstand the demands of an ever-changing supply chain. The RedStone answer was a solution designed specifically for the demands of the organization's industry and customer requirements.

"Many 3PL organizations rely on price alone to drive improvements, quickly running out of options to improve efficiencies after lower costs are no longer an option. RedStone solutions start with getting to know our clients—their challenges, systems, processes, people, and most importantly how they measure success—before we do anything else," commented Jim

Ritchie, president and CEO of RedStone Logistics.

RedStone focused its work for Alan on simplifying the entire supply chain from the beginning, not just on reducing the cost of shipping their products.

"We worked with Alan and his team to ensure we met their near-term requirements and anticipated changes in their supply chain," added Ritchie. "We invested in dedicated resources to meet the strategic direction of the company, the needs of its customers, and the plan for how its supply chain should react to ever-changing logistics requirements."

These specialized resources provided by RedStone reach into every corner of the business to drive continuous improvement, resulting in years of client satisfaction. Eliminating client disillusionment is a fundamental imperative for RedStone Logistics, creating client relationships that don't merely survive but thrive beyond the first year of cost savings.

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SUPPLY CHAIN LESSONS LEARNED: A SOUND SYSTEM FOR YOUR ENTERPRISE



In today's tough supply chain environment, companies are spinning big-picture solutions that will keep them on the charts now and for the long play.

By Merrill Douglas



The pandemic has made people question some of the basic assumptions of their lives: Whom do I need around me? Where do I want to live? Can I keep working from home?

In a similar way, the supply chain disruptions we've seen emerge from this crisis have forced some companies to re-examine how they operate at the enterprise level: What should we manufacture ourselves and what should we buy? Which products and customers deserve the most support? What should our distribution network look like?

Here are some of the hard-won lessons they've learned to ensure they won't be fooled again.

MAKE OR BUY?

Copper State Bolt and Nut in Phoenix is mainly a distributor, selling fasteners, construction products, safety products and industrial supplies. But 10 to 15% of its revenue comes from products it manufactures in-house, potentially putting Copper State in competition with many of its suppliers.

Along with thousands of other companies in its market, Copper State saw demand for its products collapse at the start of the pandemic and then rebound. But supplies of both raw materials and finished goods have stayed tight. Rather than simply fight for access to those scarce commodities, Copper State has been talking with other manufacturers about how best to serve mutual customers.

"We feel there's a lot more opportunity to cooperate and collaborate with others than there is to compete," says Brian Cates, the firm's chief operating officer.

For example, Copper State could manufacture certain bolts for its heavy industrial customers. But maybe it's better to make only some of those items and procure others from third parties.

"By buying from some of those other manufacturers, while also making parts for different customers, we're expanding the supply scope," Cates says.

While rethinking which products to make and which to buy, Copper State also talks with suppliers about how best to procure the products its customers need. As those suppliers also struggle to provide enough volume to

meet demand, some are glad to have Copper State turn to other sources for certain products.

Collaboration among trusted trading partners has grown especially important since early 2020, given ongoing supply chain disruptions. At the start of the pandemic, Copper State took specific steps to keep that trust intact. "We made it a point not to cancel orders during the first part of the pandemic," Cates says.

Strategic make-or-buy decisions will remain important at Copper State even after the supply chain stress has calmed down. "Our goals are to grow at a pace faster than macroeconomic growth," Cates says. Investing in production lines to make products that Copper State could easily procure instead won't help the company reach those goals.

"If one of these collaborative companies has made that investment, they had good reason," Cates says. "So

why should we introduce competition that doesn't have to exist?"

WHAT'S OLD IS NEW

Along with materials, components, and finished products, supply chain disruptions around the world also make it hard for companies to obtain production machinery. "Companies are having major lead-time issues," says Nick Taylor, head of the industrial division at Liquidity Services, a provider of reverse supply chain and liquidation solutions in Bethesda, Maryland.

A company that needed a new machine for a production line used to wait about three months to receive it. "Now, across the board, we're looking at nine months, or even up to 12 months," says Taylor.

To overcome that obstacle, companies are buying used equipment instead; some find what they need on the global market on an electronic marketplace that Liquidity Services runs.

"Used machinery will move from the United States to Asia, and from Asia back to the United States, increasingly so now, even despite the higher shipping costs," Taylor says. Many companies consider it better to pay sky-high ocean rates to ship used equipment than to go without.

Other manufacturers are simply holding on to aging equipment. When one facility needs to replace a machine, rather than buy one, a company might redeploy a piece of equipment from another location. Liquidity Services supports that activity with its technology, too.



WDS recently purchased new racking that adds space for 20,000 more pallets at its newest 480,000-square-foot facility in Linden, New Jersey. The 3PL filled the facility on customer demand in about 60 days.



Based on experience with recent shortages and slowdowns, companies are now less apt to get rid of older production equipment.

“Manufacturers are taking a longer time to make decisions,” Taylor says. “And when they do make decisions on releasing assets, they are being considerably more cautious than in the past.” This tendency could survive beyond the immediate emergency.

Demand for used equipment is increasing as well. “Prices have gone up between 25 and 30% in the past six months for high-quality machinery,” Taylor notes.

WHEN YOU CAN'T BUY, BORROW

As shippers compete for capacity in today's tight logistics market, some of the largest companies are taking matters into their own hands. Home Depot, Walmart, and other major retailers have chartered private container vessels. Some have also bought their own shipping containers.

Smaller companies can't make those investments. But if they're lucky, they work with service partners that have bulked up their resources to meet current demand.

Dale Young, vice president of World Distribution Services (WDS), an asset-based third-party logistics (3PL) provider, counts his company as one of those partners.

“Our organization recently bought about 1,000 containers to try and help customers,” he says. The company has also been chartering vessels to help companies that don't have the buying power to find capacity on their own.

To compensate for supply chain delays, shippers also try to add more warehouse space in more markets so they can move inventory closer to consumers. But just because a company finds a suitable building doesn't mean it can stand up a new distribution center right away.

“The lead time for racking—where you stack pallets in a warehouse—is about 24 weeks right now,” says Young. Steel shortages have reduced the supply of other important equipment as well.

5 LESSONS LEARNED FOR THE POST-PANDEMIC SUPPLY CHAIN

The current global trade crisis has highlighted weaknesses within the supply chain and forced the industry to assess, evolve, and often transform their operations to meet the needs of today's marketplace. Many changes are here to stay and should be embraced as the industry plans for the supply chain of the future.

David Bowie once said: “Tomorrow belongs to those who hear it coming,” meaning we need to listen to the market to anticipate what will come next. While no one can predict or prevent the next global crisis, we can build stronger, less vulnerable supply chains by learning from past mistakes and adding positive changes into day-to-day operations.

Following are five real-world examples that show how shippers rely on flexibility, investment, and alternative solutions to navigate the current supply chain disruption and why these changes are here to stay.

1 Stay open to new and unconventional ways of doing business. Pandemic-related disruption forced stakeholders throughout the supply chain to look at alternative ports, non-traditional routes, and different processes. Being open to new and unconventional ways of doing business not only served as a solution to an immediate need, but also underscored the importance of having an open mind about alternatives that could potentially save time and money compared to the traditional routes that have been impacted by congestion and capacity constraints.

2 Broaden networks; expand connections; deepen relationships. Using alternative ports and considering new routes forced shippers to expand outside their comfort zones, making new contacts and building new relationships. Port congestion and capacity issues also highlighted just how important it is for shippers to have a diversified vendor base for all the links in their supply chain—ocean, air, warehousing, and trucking. That way, as roadblocks pop up, they have alternative options and additional capacity they can dip into to keep freight moving. While sticking with “what has always worked” has its benefits, continuing to build strong connections outside of the traditional process is one way for shippers to build resiliency into their supply chains.

3 Allocate resources to equipment and partner with asset-based providers. No one wants to pay for assets that are underutilized, but the weaknesses of the previous model taught us that without building in contingency equipment, capacity, and warehouse space, your supply chain may not be strong enough to withstand adverse conditions, which can result in huge financial implications. The pandemic saw many large retailers (cont.)

JBS Logistics

Warehouse Expansion

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NEW!



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WDS already had two new warehouses in development when the pandemic upended the logistics world. One of its latest purchases is new racking that will add space for 20,000 more pallets at its newest facility in Linden, New Jersey.

“That location is 480,000 square feet, and we filled it up on customer demand in about 60 days,” Young says. So the new storage capacity is welcome.

The pandemic’s big lesson for shippers is to be proactive about developing options, including multiple service partners, locations, and ports of entry. “Once you get them established, maintain those relationships,” Young advises. “Have them as viable options for the future.”

STRATEGIC DESIGN

Another way to avoid the hazards of long supply chains is to move manufacturing closer to home.

This sort of inshoring or nearshoring isn’t always just a matter of careful site selection. The answer to unwieldy supply chains could lie in the way a company develops its products, according to Bharat Kapoor, global lead of the PERlab (Product Excellence Renewal) at management consultancy Kearney.

For instance, if an American company decides to move production from Asia to the United States, it knows its labor costs will increase. So it needs to get creative with its products. “You design in such a manner that the competitive advantage the low-cost country has starts getting diminished further,” says Kapoor.

The company could, for instance, develop a product that excites consumers so much they willingly pay large sums to own it. He points to Tesla, whose customers paid \$100,000 for early models and kept loving those cars even when their doors failed to close.

“Even today, if there’s a bug in a Tesla, people accept it,” says Kapoor. If a Mercedes or BMW showed a similar flaw, consumers would not be so forgiving, he maintains.

“But a Tesla is not a commodity,” he adds. “It’s something people care for.” Enjoying such fierce loyalty, a company can afford to manufacture close to the

5 LESSONS LEARNED FOR THE POST-PANDEMIC SUPPLY CHAIN

buying their own equipment to avoid delays and issues caused by container and chassis shortages. The demand for additional warehousing space to hold buffer stock and delayed seasonal merchandise also increased dramatically. For shippers who do not have the means to acquire, manage, and maintain their own equipment and distribution space, partnering with an asset-based 3PL provider can be advantageous.

Looking ahead, expect logistical planning to include managing equipment—containers, chassis, trailers—as well as warehousing space, and for shippers to select partners who will invest in equipment and space to meet demand.

4 Increase inventory levels. While the industry knew the “just-in-time” model was getting too lean and too tight to be sustainable, the realization of its fragility was brought to light in a loud and unmistakable way during the pandemic. This has resulted in what we now consider the “just-in-case” model, whereby shippers build extra inventory into their planning so they have goods on hand when they need them.

Increasing inventory levels ensures you have contingency goods available to meet unexpected demand or unexpected delays in your supply chain. The last couple of years have shown it is too risky to keep inventory levels low—you can no longer assume cargo can quickly and smoothly be delivered from a distribution center hundreds of miles away. To meet customers’ needs, it is necessary to invest in solutions that allow you to have inventory on hand where and when you need it.

5 Add more storage space in multiple markets. Supporting the strategy of having inventory when and where you need it is the movement toward diversified storage solutions, including increasing the number of locations, adding multiple new markets, and looking at storage near population centers. Having product or merchandise in multiple locations builds in more agility and flexibility, allowing you to get those goods to your customer more quickly. What’s more, being closer to population centers is almost a requirement in today’s “next-day delivery” e-commerce marketplace, which will continue to be a driver for where and when to build warehouses in both the short- and long-term future.

The pandemic affected the global supply chain in a variety of ways, presenting weaknesses, challenges, opportunities and solutions. Being open to new ways of doing things, building new relationships, adding buffer stock, increasing domestic inventory, and adding more storage space in multiple markets closer to population centers are just a few of the ways today’s modern shippers are successfully navigating disruptions.

While the future of the supply chain remains uncertain, many of these changes are here to stay.

— Dale Young, Vice President, World Distribution Services

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point of consumption, with components also made in the region.

Another solution is to design a product with parts so simple and modular, you can make it practically anywhere. Take Lego-brand toys, for example. You can buy a Lego Hogwarts castle, a Lego Darth Vader helmet, or a Lego pirate ship. Details vary, but the sets mostly consist of the same kinds of plastic bricks.

“We recently brought several of these Lego sets into our own lab,” Kapoor says. “We found that about 80% of the bricks are common among a bunch of sets. I call that genius.”

With simple common parts, a company could manufacture anywhere in the world and use any number of suppliers for components or materials. “You simplify the supply chain piece of it, but you can make your public-facing portfolio as rich as you want,” he adds.

WHO GETS 100%?

Experts at Boston-based Profit Isle help companies analyze how various aspects of their operations affect profits. In today’s era of supply chain disruption, this kind of investigation, called Enterprise Profit Management (EPM), could help determine how best to allocate inventory to different customers.

In many companies, 10 to 15% of customers account for 150 to 200% of the profits, says Jonathan Byrnes, founding partner and chairman of Profit Isle and a senior lecturer at the Massachusetts Institute of Technology. Another 10 to 20% of customers actually make the company lose money.

“And then the rest of the company is doing nothing,” Byrnes says. “Typically that’s a lot of small products being bought by small customers but taking up the company’s resources.”

When a company can’t get enough inventory, it makes sense to discriminate among these customers. “Take your ‘profit peak’ customers and give them 100% of their historical demand,” Byrnes suggests. Large customers that drain profits should receive 80%. The many tiny customers whose revenues contribute almost nothing to the business should get 60%.

The vendor can then work with large, unprofitable customers—the “profit drains”—to help them graduate to “profit peak” status, Byrnes says.

“Change the order pattern, change the services, and then you get 100%,” the vendor should tell them.

A similar analysis could determine which products to keep selling and which to drop. “In most companies, 3 to 5% of profit peak products sold to profit peak customers are giving them 100% of the profit,” Byrnes says.

WHAT’S ON YOUR SUPPLY CHAIN PLAYLIST?

Inbound Logistics asked readers to suggest the song titles that best describe their experience in the supply chain over the past two years. Here are just some of the many musical notes we received.

Stuck in the Middle With You

Stealers Wheel

John Reichert
Senior Director, Supply Chain
Execution Systems
Tecsys

Truckin’ — “What a long, strange trip it’s been.”

Grateful Dead

Joe Dagnese
President and Chief Executive
PECO Pallet

Paranoid

Black Sabbath

Arjun Chandar
Founder & CEO, IndustrialML

Helter Skelter

The Beatles

Sean Elliott
Chief Technology Officer /
Chief Digital Officer
Körber Supply Chain

If You’re Going Through Hell

Rodney Atkins

Jonathan Parks
Senior Vice President, Supply Chain,
iGPS Logistics

It’s the End of the World as We Know It (And I Feel Fine)

R.E.M.

Jeff Pepperworth
President and CEO, iGPS Logistics

Nikki Baird
VP, Retail Innovation
Aptos

Float On

Modest Mouse

Nathan Strang
Director, Ocean Trade Lane Mgmt.
Flexport

That’s Life

Frank Sinatra

Bruce Lancaster
CEO, Wilson Electronics

Don’t Look Back

Boston

Usually, learning from past experiences is a valid way to move forward. However, with the amount of disruption over the past two years, supply chain professionals could not rely on what worked in the past to succeed. As a profession we need to look forward, not back.

Hank Canitz

Vice President Industry Solutions,
Nulogy

You’re All I Need to Get By

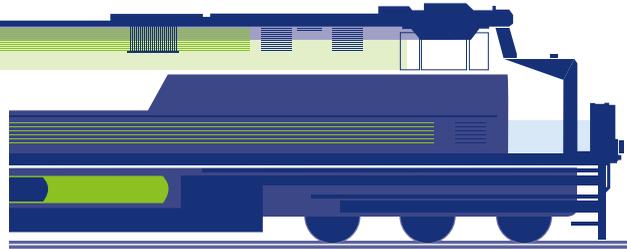
Marvin Gaye/Tammi Terrell

The past couple of years have highlighted that no one succeeds alone in the supply chain, as there are so many dependencies within all supply chains. With humans so dependent on supply chains, the interdependence between different supply chains is pronounced, from PPE to computer chips. It is evident that collaboration is critical to building resilient supply chains of the future.

Jason Tham
CEO, Nulogy



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Atlanta-based TireHub distributes tires that its parent companies, Goodyear Tire & Rubber and Bridgestone Americas, manufacture for passenger vehicles and light trucks. TireHub's customers are auto dealerships, repair shops, tire shops, and other tire retailers.

The pandemic has triggered several challenges for TireHub, including uncertain product availability, increased lead times, and problems getting tires to markets that need them most. TireHub has approached those challenges by piloting solutions in several areas of operation.

One example is portfolio analysis. "We had to become very clear on what matters most and how we prioritize our products to best serve our customers," says Nancy Triplett, the company's director of product supply.

TireHub's merchandising team determines the right mix of products for each of its 71 tire logistics centers (TLCs), which support retailers with same-day delivery.

"When we see a supplier is coming into supply, we understand which products to pay attention to and which ones we should get greater depth on to help keep us in service over the long haul," she says.

TAKING STOCK FOR CUSTOMERS

The team bases its analysis on data such as past sales and volatility of demand for particular stockkeeping units (SKUs). It's also important to learn how much certain customers rely on TireHub.

"It doesn't matter if it's a high-velocity or low-velocity SKU," Triplett says. "If it's integral to a customer's stocking

plans, that influences what we're going to stock."

TireHub has also sought ways to get product from suppliers to customers faster. "We've tried all sorts of tactics, like direct factory shipments from the supplier, bypassing their logistics centers to get right to our TLCs, and then redistributing from there," Triplett says. "We've looked at more creative customer pickup, rather than waiting for a truck to weigh out before it can ship from the supplier."

Such experiments will probably influence how TireHub operates in the future. "The ability to pilot, trial, and learn, and adapt to changing business expectations and customer needs, is a skill," Triplett says. "You have to build the culture and capability to allow people to learn, grow, and try things." ■

SUPPLY CHAIN PLAYLIST (CONT.)

Another One Bites the Dust

Queen

This song comes to mind, referring to companies losing sales and loyal customers to their competitors. It has been a tough couple of years for businesses to meet consumer expectations when it comes to product availability and delivery. As a result, 49% of companies are concerned with their ability to compete with hyper-scale companies and online marketplaces.

Marcel Hollerbach

Chief Innovation Officer, Productsup

Don't Do Me Like That

Tom Petty & the Heartbreakers

Lonny Holston

Export Operations Coordinator, Mickey

Fix You

Coldplay

2021 was the most disruptive year in the modern era for almost every kind of supply chain due to COVID, the boom in e-commerce, the worker shortage, and climate change. We have no choice but to fix this supply chain.

Scott Evans

Co-founder, Waybridge

Crazy

Aerosmith

Challenges in the supply chain over the past two years have magnified the need for rapid adaptation and investment across both supply chain infrastructure and capabilities to be even more agile. In 2022, organizations will need to find the right balance of speed and agility to offer the right products while managing supply chain disruption.

Laura Ritchey

COO, Radial

I Believe That We Will Win

Pitbull

The heroic effort of people that work inside logistics has been publicized but underrated. These people do a lot. It cannot be understated.

This song is a great indicator of the people who will help bring us through the other side of this with persistence.

Dustin Hansen

CEO, InXpress

Crazy Train

Ozzy Osbourne

Anna Maria Hubner

Manager, Advertising & Marketing BSY Associates Inc.

Eye of the Tiger

Survivor

My motto is, "Success is never final, but failure is maybe fatal."

Reo Hatfield

VP of Business Development TA Services

(Sittin' On) the Dock of the Bay

Otis Redding

How Long Do I Have to Wait for You?

Sharon Jones & the Dap-Kings

Sitting, Waiting, Wishing

Jack Johnson

Dale Young

VP, Warehousing & Distribution World Distribution Services

Help!

The Beatles

Highway to Hell

AC/DC

I Will Survive

Gloria Gaynor

Antony Francis

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SUPPLY CHAIN LESSONS LEARNED: THE TECHNOLOGY SPIN



Digital transformation will be fundamental as we tune into a post-pandemic supply chain.

By Karen Kroll



Supply chains historically have been “starved of investment in technology, with many companies still using spreadsheets and email,” says Sumit Vakil, chief product officer with Resilinc, a provider of supply chain risk management tools. “It’s 20th century technology applied to today’s problems.” Not only are manual operations time-consuming and prone to error, but they also keep supply chain leaders from leveraging solutions, such as artificial intelligence, that can provide the flexibility, visibility, and insight needed to improve operations and decision-making.

Fortunately, this is changing. Many companies are rebooting themselves, often through digital transformations that boost transparency and visibility. Organizations that hesitate risk getting left behind. “This is going to be foundational and the cost to play the game,” says Jason Alexander, national manufacturing sector leader with consulting firm RSMUS.

Also fortunately, technology solutions costs are dropping. Businesses of almost any size can afford many of the cloud-based or software-as-a-service (SaaS) applications. Prices for sensors are also dropping.

As supply chain professionals evaluate, invest in, and implement technology solutions, they’re gaining new insight. Here are some of the lessons learned from the past year or two:



Recognize that supply chains increasingly compete with each other for technology. One example: Auto manufacturers, electronics firms, and appliance companies all need to obtain microchips for their products. “Suppliers may have to define which end-product market segment is likely to be the best strategic target for them,” says Simon Croom, Ph.D., professor of supply chain management at the University

of San Diego. Their analysis may lead them to prioritize, say, auto over white-goods manufacturers.



Make remote work work. Like many companies, ReedTMSLogistics shifted to remote work early in the pandemic. For Eileen Dabrowski, director of learning, development, and marketing, that meant figuring out how to help new employees both gain a sense of the company’s culture and learn complicated technology solutions from their homes, rather than while on-site. “It was a challenge to create a similar experience,” she says.

Among the tactics that proved effective were asking trainees to start each day with a takeaway from the previous lessons, as well as a “getting to know you” icebreaker. She also appealed to the lived experience of the trainees, asking them to offer their own knowledge when applicable.



Leverage technology to gain visibility. The recent delays in ocean transport have highlighted the lack of visibility to many ocean shipments, says Jake Flory, solutions architect with Pegasus Logistics Group. To remedy this, Pegasus invested in a technology solution that provides visibility.

“Although it doesn’t solve all the supply chain headaches, it definitely arms our clients with more information so they can better prepare,” says Hiram Hartnett, executive vice president, sales for Pegasus.

That’s key, as disruptions across all transportation modes are expected to continue for some time. When companies understand which orders are impacted, they can intelligently respond by, for instance, adjusting manufacturing scheduling.



Parcel shipping company AirTerra specializes in serving mid-sized retailers and brands who need to maintain a focus on customer-facing operations, and then partner with other businesses to jointly leverage technology.



LESSON 4 SMARTER THAN YOU



Turn data into intelligence. GE Appliances began its digital supply chain journey in 2017, says Kent Suiters, executive director, lean enterprises with the company. Visibility to supply and demand became a priority, as the availability of big data and rapidly maturing digitization tools offered the opportunity to boost responsiveness.

The pandemic highlighted the wisdom of this approach, as GE Appliances had to quickly connect limited supplies of certain parts and components to rapidly growing demand, while also meeting customer expectations.

The control tower they implemented “identifies issues days and weeks in advance so they can be resolved with little or no customer impact,” Suiters says. (A supply chain control tower is traditionally defined as a connected, personalized dashboard of data, key business metrics and events across the supply chain.)

By turning data from these systems into intelligence and insight, GE Appliances was able to create “agility and resiliency in our supply chain by transforming our business processes,” Suiters says. This allowed employees to be more forward looking and transition their work from transactional to decision-making.

LESSON 5

THE TIMES THEY ARE A'CHANGIN



Figure out new ways to forecast. Over the past 18 months, beer company Heineken USA experienced erratic swings in consumption



To combat erratic swings in consumer consumption during the pandemic, Heineken USA took steps to improve visibility and the predictability of inbound and outbound planning.

across pack types, while COVID shutdowns caused channel trends to shift dramatically.

“These factors, along with our long import supply chain, forced us to reevaluate how we combine predictive analytics and demand planning to anticipate trend changes,” says Laura Strehle, senior director, supply chain planning.

For instance, Strehle and her team often had to disregard data history and instead enrich forecasts with high-frequency sales and operations planning data. And because the marketplace was shifting so rapidly, they needed to put off some planning decisions until as close to the last minute as possible.

To take these steps, Heineken USA first needed to “improve our visibility and the predictability of our outbound and inbound planning,” Strehle says. That meant moving from static to dynamic parameters, and proactively creating new logistics routes to move stock to customers.

They also integrated and digitized their end-to-end supply chain data to boost agility. “During extremely volatile periods, we had to dive deep

into all of our data points and find ways to drive insights and connect them throughout our processes,” she adds.

Heineken USA isn’t alone. For most companies, the delays and shortages in the face of booming demand have created an urgent need for more effective technology for demand forecasting. To remain competitive, companies need to leverage demand planning and forecasting tools that can help them respond to changing market dynamics, optimize inventory, and provide reliable forecasts.

LESSON 6

BORN IN THE USA



Create a digital team to tout domestic operations. Companies that source domestically have been able to avoid some of the supply chain delays impacting those with more global supply chains. It only makes sense for them to market this fact.

Dusty Dean is founder and chief executive officer of BITCADET,

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which develops digital sales strategies for manufacturers. He works with a company that sources and manufactures do-it-yourself building kits in the United States. To leverage its made-in-America production, the company formed a digital rapid response team composed of web designers, e-commerce back-end developers, and integrations specialists. They identified additional product SKUs and variations they could quickly bring online into configurable product pages, and then worked with operations to lower lead times.

These steps offered “a clear advantage while competitors were stocking out and offering indeterminate lead times,” Dean says.



Embrace “coopetition.” As e-commerce continues to grab a larger share of consumer spending, it is transforming fulfillment operations, as each item must be individually picked and transported to customers’ doors, adding complexity and raising costs, says Brent Beabout, president and founder of

logistics company AirTerra. Even many mid-sized retailers lack the capital to own and operate their own e-commerce fulfillment operations.

Instead, many will need to maintain their focus on customer-facing operations, like branding and website design, Beabout says, and then partner with other businesses—what some call coopetition—to jointly leverage technology that can streamline back-end operations, like supply chain and transportation to gain economies of scale. Coopetition of these functions, generally through an independent third party, will accelerate as e-commerce continues to grow.



Turn to the cloud. Many of today’s cloud-based enterprise resource planning (ERP) solutions offer advanced analytics that allow for a more granular look at business operations. For instance, they can provide data that shows which products are more profitable.

Similarly, software as a service (SaaS) is beginning to dominate the warehouse management system (WMS)

market, says Tom Singer, senior project manager with Tompkins Solutions. While these solutions have been around for years, they have typically been found in the lower end of the market. Now, top-tier WMS vendors are fully embracing cloud-centric, subscription-based models.

Moreover, the value proposition for SaaS and cloud-based WMS packages has moved beyond simply eliminating the need for a company to invest in and maintain the IT infrastructure. Many SaaS WMS vendors and integrators now offer full sets of managed services for provisioning and administering the technology stack behind their solution, accelerating the time to value.



Robots can do more than dance. While material handling equipment has long centered around fixed, capital-intensive systems, autonomous mobile robots (AMRs) offer capabilities similar to these solutions, but with greater flexibility and at a fraction of the investment, Singer says. Many can reduce labor costs and boost service levels—key benefits for e-commerce operations struggling with labor shortages and explosive customer demand.



Use technology to look outside your organization. It’s no longer enough to understand only your own supply chain. A hurricane on the U.S. Gulf Coast or flooding in Europe can impact supply chains around the globe. “You have to manage the known information



Recent delays in ocean transport have highlighted the lack of visibility to many ocean shipments. To remedy this, Pegasus Logistics Group invested in a technology solution that provides visibility and arms shippers with more information to better prepare.



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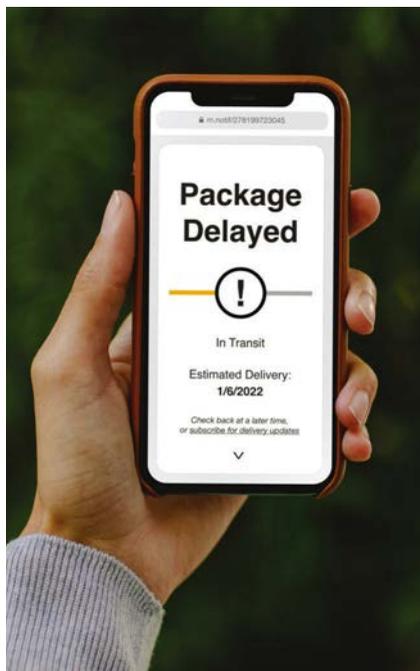
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extremely well to make time to deal with the unknown information,” says Billy Duty, head of global supply chain with BYK, a division of Altana, a chemical company.

Technology makes this possible. The chemical industry is now deploying track-and-trace solutions, long used in other industries. Knowing the location of incoming raw materials or components allows for more accurate production planning, even when disruptions occur.

“We have to invest in technology that makes it easy for everyone to connect the dots,” Duty adds.



Delays and shortages in the face of booming demand have created an urgent need for more effective technology for demand forecasting and visibility.

lead and founder of A.T. Kearney PERLabs. While cost remains critical, it’s no longer feasible to ignore resilience. This shift will influence technology investments.

For instance, supply chain leaders may decide to modify production processes so that they can accommodate a substitute raw material, if it becomes difficult to access their usual supply.

Incorporating resilience in supply chain planning can cut into profit margins. However, resilient organizations often are well-positioned to capture market share when disruptions occur.



Watch for tech imposters. As critical as technology is, it’s also necessary to watch for “IT and tech imposters,” says Nicole Glenn, founder and CEO of Candor Expedite. These vendors market the wonderful things their solutions can do, even though it’s not clear they can deliver on their promises.

To identify them, Glenn recommends proceeding with caution and asking questions. Some examples: How many people are on the team working on this solution? Can you demonstrate that your product does what you’re telling me it does?



Remember cybersecurity. “An organization is only as safe as its supply chain,” says Tom Pepper, CEO of cybersecurity firm Egress. An attack can be crippling. The ransomware attack against the Colonial Pipeline caused fuel shortages across the U.S.

eastern seaboard and compelled several states to declare states of emergencies, among other consequences.

One step to safeguarding supply chain technology is to keep in mind that many attacks occur over holidays or at the start of weekends, when security teams are likely to have even fewer people available to respond to an incident, Pepper says. The Colonial pipeline attack, for instance, occurred over Mother’s Day weekend.

Organizations should confirm that their security teams are adequately resourced and remain aware of the additional risk of cyberattacks during these periods.



Consider technology’s role in resilience. Until recently, most supply chains have been optimized for cost, says Bharat Kapoor, global



Don’t neglect human interaction. As critical as technology is, no solution can completely replace human interaction.

“You need the best of both technology and human interaction,” says Mark McCullough, CEO of Gebruder Weiss USA. “When you get into a bind, you want to talk to real industry experts and not someone trained only on software.”

Kyle Seamans is logistics manager with Brenny Transportation. Like many companies, video conferencing, phone calls, and other tech tools implemented in the wake of the shutdowns in 2020 allowed Brenny to operate with some semblance of normalcy. But once it became safe to again visit customers, “I realized how pivotal face-to-face interactions can be,” Seamans says.

While Seamans and the Brenny team will continue to leverage video conferencing and other tools, person-to-person connections, when they can be done safely, remain important.

“No emoji or sweet digital background will replace the energy that it creates,” Seamans says. ■

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SUPPLY CHAIN LESSONS LEARNED: THE PROCUREMENT GROOVE



**16 sound procurement
lessons you can tune into
moving forward.**

By Karen Kroll



The recent supply chain disruptions, along with upending many companies' operations and causing delays, also exposed "how narrowly rigid many supply chains are," says Simon Croom, Ph.D., and professor of supply chain management at the University of San Diego. A singular focus on price has too often undermined resilience. "If you can't get supplies, it doesn't matter if you negotiated a lower cost," he adds.

That's one lesson many supply chain and procurement professionals can draw from the past two years. Here are a few more.



Monitor disruptions for their impact on market share. Supply chain disruptions historically have been considered nuisances, says Tom Derry, CEO with the Institute for Supply Management. It has now become clear they're more dangerous, cutting into sales, and in some cases, market share.

For instance, revenue at a consumer products food company jumped about 10% over the past year. While half the increase stemmed from the growing number of consumers eating at home, the rest was due to competitors' inability to get their products to the stores.

"The company won market share because their competitors were having supply chain issues," Derry says.



Source relationships, not just materials. "Supplier relationships have to move beyond transactional relationships," says Shruti Gupta, senior manager and industrials senior analyst with RSMUS.

She recalls a mid-sized manufacturer that continued purchasing parts during the COVID shutdowns in spring 2020. It was a risk to build inventory when demand had plummeted. But when demand later spiked, suppliers gave this customer priority.



Consider new ideas to mitigate supply chain disruptions. Dealing with supply chain disruptions often means being open to new ways of operating, says Nicole Glenn, founder and CEO of Candor Expedite.

For example, Candor is working with a fast-food retailer to test wraps that can be used on products that require temperature control, but only for a short distance. It's one way to work around the lack of capacity in the refrigerated market.

"Logistics is often the tail of the dog whipped around by market conditions and cost-cutting initiatives," says Spencer Shute, senior consultant with Proxima. While risk can't be completely avoided, integrating logistics into an overall supply chain risk model enables companies to react and mitigate challenges faster and with less disruption.



Communicate, even when the news isn't good. The pandemic highlighted the importance of internal and external communication that's real time and factual—even when the news isn't great, like a delayed product or rate increase. "Bad news doesn't get better with time," says Tonya Jackson, senior vice president and chief product delivery officer with Lexmark International.



Similarly, few people like to qualify the information they're presenting. Yet, letting others know that the information you have could change—even that it's likely to change—allows them to begin planning for that uncertainty.

Partner with other functions to cut risks. Priorities between internal functional groups like procurement and finance often are misaligned, says Jomarie Skurtovich, vice president, operations, Avnet United and Avnet Velocity.

Finance teams often view strategies to strengthen resilience, like building inventory buffers or multi-sourcing critical parts, as too costly. Conversely, supply chain leaders see the risk in many efficiency measures, like sole-sourcing parts.

When the two work together, "enterprises are better positioned to plan and implement strategies that lower exposure to disruptive risks without introducing cost inefficiencies," Skurtovich says. For example, proactively tapping into the expertise of finance when considering consignment or vendor-managed inventory programs can help optimize working capital.



Plan ahead. "The farther out you plan, the more you can get a jump on the competition," says Mark McCullough, CEO, Gebrüder Weiss USA. In transportation, that often translates to better rates and transit times.

Minh Duong, chief engineer and co-founder of Anavasi Diagnostics, worked closely with the supply chain team at their contract manufacturer to understand lead times for electronics components. He also



prioritized “buying emergency stock for long-lead-time materials and materials with a high risk of future shortages.”

Developing strong working relationships and sharing production plans with suppliers allows them to plan more effectively, which can lower the risk of disruptions.

Even ordering well in advance isn’t always a guarantee against shortages. For instance, when ordering extra spare parts for a conveyor system, lead times were even longer than projected, says Annette Danek-Akey, executive vice president, supply chain with publisher Penguin Random House.

While waiting for the part to arrive, her team ran their conveyor system a little slower for a few days and did some manual sortation. They also adjusted buffer inventory levels for that key spare part.

“Buffer management is a critical skill to learn,” Danek-Akey says, noting this may mean a buffer of time for a system or technology implementation, or recognizing the new, longer lead times required to buffer inventory appropriately for spare parts and standard supplies.



Consider accommodation agreements. If a supplier is facing issues that could cause disruptions, an accommodation agreement can help all parties. As the name suggests, these agreements include various accommodations intended to help the supplier. They’re also generally better for the customer than rapidly hunting for a new supplier, says David Dragich with The Dragich Law Firm PLLC.

One potential stumbling block, however, is their complexity; the agreements often involve the supplier, the customer, and a lender. Similarly, it’s not necessary to wait until a supplier is in distress to draw up an agreement, although that’s often what occurs.



Leave when a relationship doesn’t work. “Make sure the vendors you work with are really the ones you want to be in the trenches with,” says Amanda Schuier, formerly chief operating officer with Quality Transport Company. “If a vendor isn’t offering support, don’t be afraid to explore all options available to you.”

Conversely, suppliers who go the extra mile are worth keeping.



Partner with multiple suppliers.

While partnerships are key, the days of sole-sourcing may be over, at least for some critical parts, as it leaves customers exposed to the risk of disruptions if the supplier runs into an obstacle.

“Securing a second supplier closer to the retailer’s consumer base greatly reduces shipping delays, increases production, reduces potential risk, and ultimately leads to a more satisfied consumer base,” says Rob Tillman, vice president of operations with Rakuten Super Logistics.



Incorporate nearshoring or reshoring.

While Asia promises to remain a key supplier region, the argument for near-and/or reshoring grows more compelling.

Mexico, for instance, offers relatively inexpensive ocean shipping, as well as the ability to cost-effectively move products by rail or truck. Near- or

reshoring can also help companies avoid rising geopolitical tensions.

Moreover, given longer lead times and increasing transportation rates, companies may find it easier to justify moving to a local supplier that’s moderately more expensive than one located across the globe, says Kamala Raman, vice president and analyst in Gartner’s supply chain group.

Near- and reshoring isn’t always the solution. Given generally higher labor costs, reshoring often is best suited for highly automated operations, says Bharat Kapoor, global lead and founder of A.T. Kearney PERLabs. Companies in hyper-competitive markets may find customers less willing to pay higher prices for goods made in America, even if they claim to prefer them, he adds.



Keep a mix of transportation procurement options. While shippers often can find lower transportation rates if they look hard enough, “you’ll generally follow the market rate,” says Bob McCloskey, director of logistics and distribution with Clarios, a battery technology provider. Trying to fight this can consume time and hamper operations, as you often end up without the trucks you need.

Instead, it’s generally more productive to try to mitigate costs by, for instance, boosting utilization and optimizing your network. “Focus on things you can control,” McCloskey says.



Rethink just-in-time. A just-in-time (JIT) inventory approach “is great for cash flow, but when there’s stress in the supply chain, it’s painful,” says Nathan Vazquez,

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co-founder and CEO with Pipsticks, a monthly stickers subscription service.

While Pipsticks used to get products two to three weeks before they needed to be turned around, they're now striving to get them two months ahead of time. This allows for transportation delays and cuts the risk of late shipments and unhappy customers. "As painful as it is to hold more inventory, we have to," Vazquez says.

"There's a shift away from just-in-time because it becomes so uncertain if a company can get the right stock when they need it," Raman says.

This shift may be temporary. "JIT is too powerful for it not to come back," Derry says, given the potential cost savings.

Technology and communication advances continue to make JIT more feasible. For instance, a decade ago, a customer might not know for weeks that a supplier abroad had to temporarily shut down, Derry says. With today's social media and communication tools, they'll likely know within hours.

LESSON 13

IT'S A SMALL WORLD



Consider your entire supply chain ecosystem. Companies need to look outside their four walls and even their immediate suppliers, and instead consider their entire supply chain ecosystem. "Think globally and holistically," Gupta says.

For example, if a supplier's supplier is disrupted, what is the likely impact to your operations?

LESSON 14

LEAN ON ME



Interact with customers. For most of the 25 years he has been in supply chain, Billy Duty, head of global supply with BYK, a division of Altana, seldom met with customers. Now, he spends about half his time with them.

GETTING BETTER ALL THE TIME



PROCUREMENT: THE INTERMEDIARY GROWING IN RELEVANCE

The internet has made it easy for everyone to go direct to the source of whatever they need. But procurement's relevance as an intermediary isn't going down.

For decades, procurement teams have been connecting people across their organizations with suppliers capable of delivering what those people need, when they need it, at the right price. And for a very long time, that was enough to see the department deliver strong, consistent value to the business.

But with the rise of the internet and e-commerce came new abilities and total empowerment for individuals. The veil was lifted on suppliers, and consumers and employees gained the power to source what they need direct from global suppliers.

It looked like the end of an era for the procurement function. And to a certain extent, it was. With direct buying options available to everyone, issues like maverick buying have rocketed, creating challenges for procurement teams to navigate.

But despite this newfound power now resting in the hands of business teams for many years, procurement's relevance hasn't declined—far from it in fact.

Just when it looked like the days of intermediaries were numbered, procurement teams leaned into their role as connectors across multiple departments, and used their unique position in the business to drive more value and become more strategically relevant than ever before.

A NEW KIND OF INTERMEDIARY

The procurement department of today is still an intermediary, just not as we knew it before. Sourcing the resources that teams need to succeed still makes up a huge part of what procurement teams do. But today, leading procurement teams are assuming a new role as a strategic intermediary between product, sales, finance, and supply chain teams.

Procurement is the only function that works closely with all of those teams, making it uniquely positioned to drive value across them. As each department becomes more data-driven in its operations and operationalizes data in new ways, procurement teams are exposed to those insights and can use them in their engagements with other teams.

The result is a whole new kind of intermediary—one that translates insights from silos into wider business actions as part of its day-to-day activities. It's still the procurement team we always knew, but it's also a powerful driver of strategic value through this new role.

CONTINUED ON PAGE 128

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The old model of purchasing agents talking only to salespeople, especially for key customers, is thrown out the window, he says. The reason? Few salespeople have all the information customers need.

“For instance, a customer that says, ‘our line shuts down if we don’t have this material by the 25th; what can you do?’ likely needs to talk with supply chain, not sales,” Duty adds.

This probably isn’t a sustainable model, given the other responsibilities supply chain executive have. However, it may drive development of technology that allows customer service or sales reps to offer the needed information, he says.

LESSON 15 STRONGER



Take steps toward resilience. While resilience has proven to be critical, it also doesn’t require a binary yes/no approach, Raman says. Instead, it’s actions on spectrum.

For instance, a company might decide to thoroughly qualify every single supplier, or only those whose business exceeds a certain level. No matter a company’s budget, they can identify actions that boost resilience without breaking the budget.

LESSON 16 WE ARE THE CHAMPIONS



Look at the bright side. The challenges of the past few years have exacted a toll on many people and organizations. Yet, there’s a bright side for many supply chain professionals: The critical role of supply chain innovation and strategic execution has been thrust into the spotlight.

While the pandemic revealed serious gaps and vulnerabilities, Skurtovich says it also “highlighted many strengths and differentiating strategies that enabled some organizations to not just survive, but thrive.” ■

CONTINUED FROM PAGE 126

PROCUREMENT: THE INTERMEDIARY GROWING IN RELEVANCE

Like any good intermediary, leading procurement teams don’t just take insights and value from one point and move them to another. When insights are gathered from product, sales, finance, and supply chain teams, procurement teams add their own insights to the mix, providing value-adding context.

Often, it’s this context that ties all those diverse insights together and helps translate them into clear actions that can meet the needs of multiple teams at once.

The best way to illustrate this is by walking through a quick example. The situation starts with four siloed insights, held within individual departments, each lacking the wider context needed to bring them to the attention of the business at large:

In **sales**, teams have noticed an increase in customer objections based on the sustainability of materials used in product packaging.

In the **supply chain**, logistics operators are concerned about emerging restrictions that may limit the use of certain non-sustainable packaging.

In **finance**, a gradual decline in revenue can be seen across long-standing product lines, indicating the possible need for a refresh.

In **product development**, teams are actively seeking opportunities to incorporate new materials into existing products, to reduce waste.

Each of those departments is capable of actioning those points on their own. But, through close collaboration with them all, the procurement team is uniquely positioned to see the clear line that runs between.

Once you add the procurement team’s insight into the mix—that its category intelligence efforts have identified an opportunity to source a new kind of recyclable packaging at a low cost—five distinct trends can be seamlessly translated into a single strategic business action.

WHY IT’S TIME FOR AN INTERMEDIARY TO HAVE A SEAT AT THE STRATEGIC TABLE

The word intermediary doesn’t scream strategic value. But by using their position at the nexus of multiple lines of business, procurement teams have become exactly that—a highly relevant intermediary, capable of delivering strong strategic value.

Now more than ever, it’s crucial that the procurement department is given a seat at the strategic table, so that its aggregated and contextualised insights can be translated into strategic product, pricing, and promotion decisions that deliver measurable value.

– Omer Abdullah, co-founder, *The Smart Cube*



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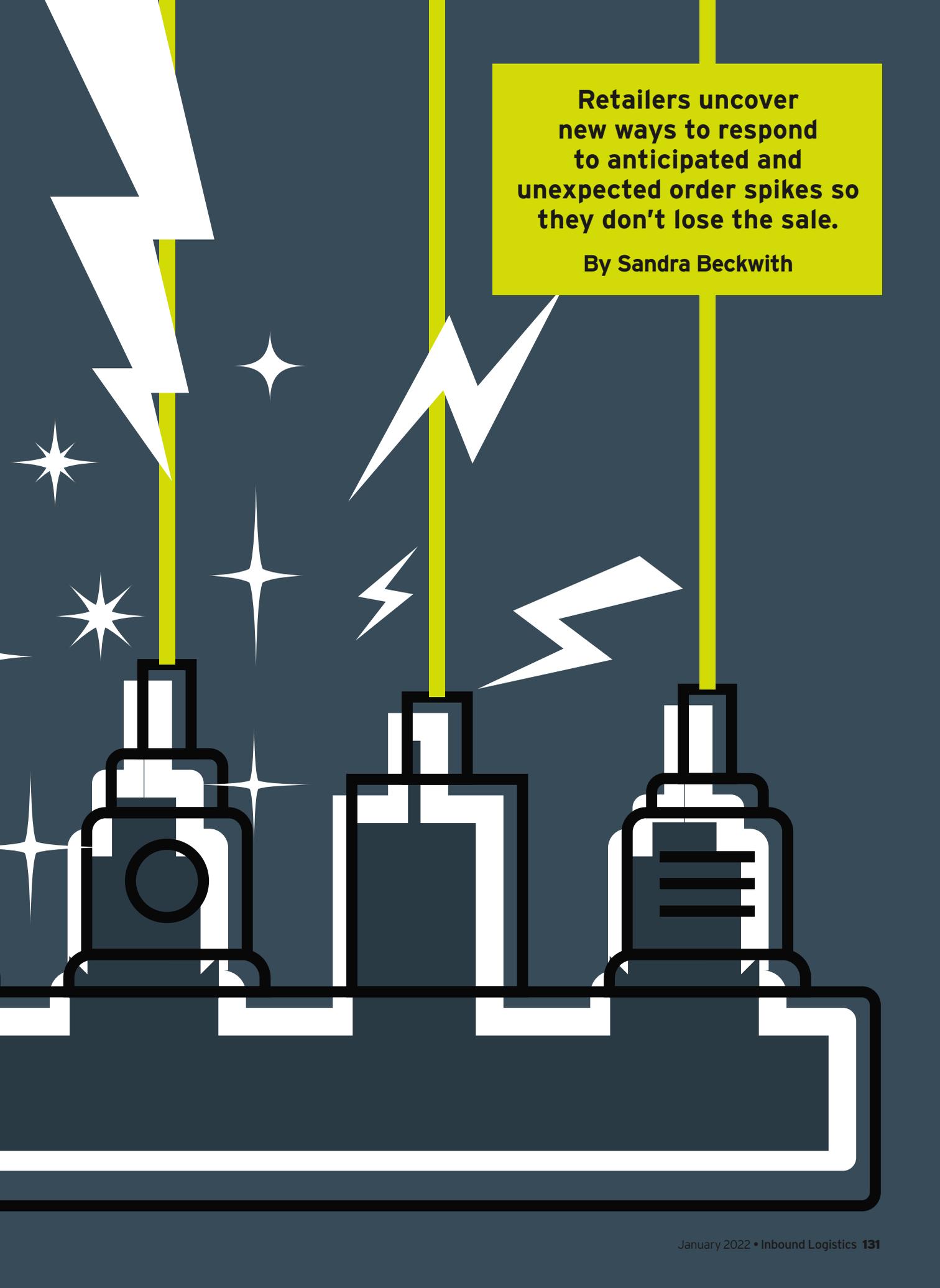
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9

INNOVATIVE WAYS TO MANAGE AND MEET DEMAND SURGES





**Retailers uncover
new ways to respond
to anticipated and
unexpected order spikes so
they don't lose the sale.**

By Sandra Beckwith

Whether you anticipate a retail demand surge or it happens unexpectedly, you need to be able to manage that sudden order spike in ways that don't harm customer relationships or your bottom line.

Here are nine ways companies across the retail supply chain capture and fill orders when demand surges.

1 GO DEEP WITH SUPPLIERS.

Have "what if" conversations with suppliers. Identify the products that are likely to experience a spike, and pose surge scenarios to suppliers and manufacturers to learn how—or if—they can meet increased demand levels.

"Any company that buys anything should have conversations about what happens if demand doubles or halves," advises Michael Zimmerman, partner and analytics practice leader at consulting firm Kearney. The solution might involve a financial investment to guarantee capacity or contracting product manufacturing elsewhere so you have options.

2 MAKE DECISIONS AT THE FACTORY.

Consider committing to factory capacity before you need it. That's what Mark Burstein, industry principal at supply chain technology provider Logility recommends. If, for example, the manufacturing timeline for a product

is three to four months, he says, a retailer might not receive a surge order until 150 days later. Booking capacity early moves your surge order ahead of others who haven't ensured that protection.

At the same time, Burstein encourages retailers to forecast demand not just for products, but for raw materials as well, and to position those materials at the factory early. "With the materials in place, you can direct them to both high demand and most profitable products," he says.

He also recommends saving time and touches by shipping finished goods directly from the factory, bypassing distribution centers completely.

3 PRE-SELL TO CUSTOMERS.

Taking a page from book publishers that have long used pre-orders to gauge demand for a book and determine how many copies to print, retailers of other types of products are now surveying customers to determine interest in a product.

"Retailers are getting smarter, thinking about how they can start to pre-sell and put customers in line to buy products ahead instead of waiting for a Cyber Monday surge," says Troy Graham, vice president of business development at e-commerce solutions company Descartes Systems Group. This approach also assures customers that they will get the product, he adds.

4 PUT SOME OF THE ONUS ON THE CUSTOMER.

Third-party logistics provider Flexe is seeing results with brands that advise customers to "get it while you can." Flexe clients using this scarcity strategy to manage demand spikes are better able to promise and then meet a customer delivery date.

"This strategy allows brands to get items to the customer quickly, but it's also on the customer to make that happen by heeding the 'while supplies last' messaging," says Megan Evert, senior vice president of operations, Flexe.

5 OUTSOURCE SURGE FULFILLMENT.

Flexe offers a launch fulfillment service designed to handle surges inherent with product introductions. Typically, the manufacturer ships inventory to Flexe facilities in multiple markets selected for their proximity to

(continued on p. 136)



Many retailers are addressing demand spikes by increasing the amount of inventory on hand so they don't lose the sale.



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A STICKY SITUATION



COVID's impact on small businesses is well-documented, but you don't have to show Australian candymakers David King and Rachel Turner the statistics. The married couple's Sydney candy shop, Sticky, almost became one of them.

Founded in 2001, Sticky handmakes colorful hard candy with flare and drama while crowds of customers watch—and buy. When the global pandemic drove shoppers away, the brand's candy artisans lost both their audience...and their customers. That's when the couple's teenaged daughter, Annabelle, came to the rescue.

A TikTok user, Annabelle knew the shop's popular candy-making performances would play well with the video platform's young users. The process is colorful and highly visual; the shop's youthful candymakers know how to play to the camera. She lobbied her father to create short, fun videos for TikTok so they could replace the in-person audience they lost to COVID restrictions with a virtual one.

"Dad, you have to start a TikTok, what we do would work so well on TikTok," Annabelle told Australian media outlet *The Feed*. "I had to hassle him so much, I had to say, 'dad, dad, make it, make it, make it.' He gave up one day and he let me do it."

King was smart to listen to his daughter. Her plan succeeded in ways even she couldn't have foreseen. When "Candy" performer Snoop Dogg shared one of Sticky's candy-making videos on another visual platform, Instagram, his followers responded. About 1.5 million of them began following the StickyLollies Instagram account almost overnight. Within four months, the company also had 2.1 million TikTok followers and more than 30 million video views.

The exploding international fan base created unprecedented global demand for the candy—a situation that was both sweet and sour, since the company wasn't prepared for the unexpected surge. "Over the past year, we have gone from 10 online weekly orders to 600. We sell out of everything we make each week—about 400 kilograms (881 pounds)," says Turner, who handles logistics and shipping. And this is no Amazon operation, she points out—all orders are hand-picked and boxed.

The owners had to make significant changes, starting with their e-commerce shopping cart and fulfillment. "Our major investment in automation has been integration of a more sophisticated shopping cart into our website," says Turner. Implementing a custom-built site "has enabled us to pivot quickly to our exponential increase in sales," she adds.

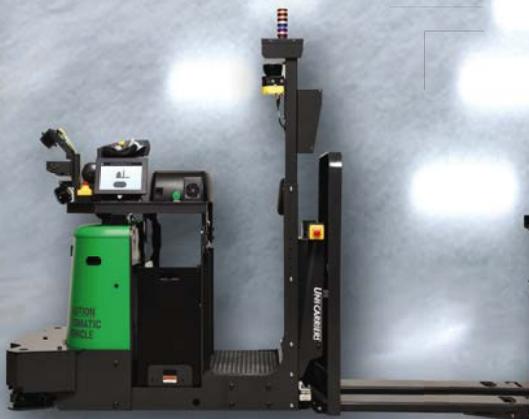
Global expansion included leasing almost 900 square feet of additional space to fill and process online orders. On any given day, seven days a week, two to four people pick, pack, and ship orders or assemble gift boxes and treat bags.

One significant challenge remains, though: Product sells out within hours of availability. As a result, the company is expanding both its fulfillment and candy-making capacity yet again. "It will be nice to have our product available for more than a few hours each week," Turner says.

That sounds pretty sweet.

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(continued from p. 132)

anticipated demand. “When the brand knows it will have a severe spike, we can partner and distribute the inventory appropriately so that no one site has to ship 300,000 orders overnight,” Evert says.

Outsourcing surge fulfillment makes sense for other types of situations, too. “We’re not saying outsource your entire fulfillment,” she adds. “This is a way to respond to the dynamic situation we’re all experiencing. Don’t make it harder by trying to do all of this yourself.”

IMPROVE DELIVERY TIME BY FILLING ORDERS FROM THE BACK OF THE STORE.

Increasingly, retailers looking for ways to get high-demand orders to customers more quickly are using a micro-fulfillment model that involves filling orders from the back of brick-and-mortar stores.



Some retailers with a strong brick-and-mortar presence handled demand surge fulfillment from increasingly sophisticated micro-fulfillment, back-of-the-store operations.



Third-party logistics provider Flexe encourages clients to avoid overwhelming warehouses during an order spike by outsourcing fulfillment.

That’s what one of Pat Fitzpatrick’s outdoor action sports clients does. “A small warehouse keeps enough inventory for three to four days, but pushes everything out to stores for fulfillment,” says Fitzpatrick, vice president of sales and marketing for commercial storage solutions company McMurray Stern.

Companies can use this approach strategically according to demand locations, he says, or to improve delivery times in areas farther from a fulfillment center but closer to a store.

RAMP UP REVERSE LOGISTICS.

Graham sees an increased focus on reverse logistics. “As we think about spikes in volume and limited inventory, retailers are looking at returns and asking, ‘How do we get them inspected and back to sale quickly?’” he says.

Micro-fulfillment makes that easier. “If you take returns in the store, you can get the product back into inventory much quicker,” Fitzpatrick says.

CARRY MORE INVENTORY THAN YOU’D LIKE.

Many retailers have gone from “just in time” inventory management to “just in case,” stocking excess inventory of products most likely to benefit from a demand surge.

“The volatility and unavailability of some products has led retailers and

consumer packaged goods companies to emphasize inventory over anything else,” says Zimmerman. “They want more to sell and they will pay extra for it and store more of it.”

Short-term warehouse space marketplace Chunker helps companies do that by connecting them with temporary surge storage capacity. Operating like “an Airbnb for warehouse space,” Chunker provides a buffer that lets retailers and brands stock up on inventory without committing to a long-term lease.

“Warehouse space comes with risk when companies have to sign a lease,” says CEO Brad Wright. “Shorter-term, more agile storage lets them flex their storage up and down.”

LET GO OF BEST PRACTICES.

Increasing inventory carrying costs and other recent survival strategies are counter to pre-pandemic best practices. “But perfection is not the goal here,” says Evert. She recommends being thoughtful about what you can do to increase the chance that the product will get to the consumer. When the best practice approach isn’t an option, consider alternatives.

“Without that, you’re losing demand,” she says. “In the worst case, you fail to realize you have to move faster and to save pennies, you lose the whole sale.” ■



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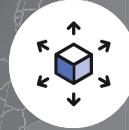
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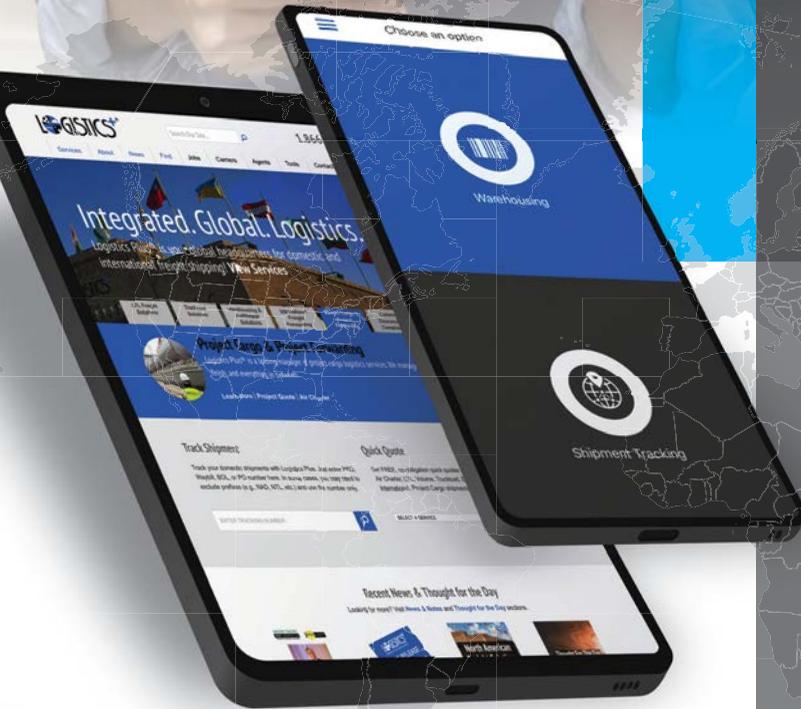
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2022 SUPPLY CHAIN PREDICTIONS



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**What's in the supply chain cards for 2022?
From limited transportation capacity to
skyrocketing material costs to continuing
supply chain disruption, learn what's on
deck and how to deal.**





INFLATION UPS THE ANTE

Supply chain woes won't go away any time soon. As CEO of a mid-sized company dealing firsthand with supply chain issues, I recognize inflation is a major driver. We've seen costs skyrocket on labor, container shipping, and manufacturing parts. As a result of wage pressures and high demand for shipping, inflation will continue to rise and supply chains will struggle into 2022.

Bruce Lancaster
CEO, Wilson Electronics

If you look across markets, inflation is highly concentrated. This suggests there are concentrated rather than long-term problems in a few markets. Conventional thinking suggests that, as with PPE, for example, supply will soon balance demand. Semiconductors are a good example of this as supply is slowly improving, although not yet keeping pace with increased demand.

The big unknowns are how additional shocks will impact a system just coming off life support. New variants, extreme weather, and/or political intervention are all likely in some form in the next 12 months. Businesses will be planning as such.

SIMON GEALE
Executive Vice President, Proxima



Sudden price fluctuations are not unheard of—with supply chain challenges exacerbating inflation, they may feel like they are becoming the norm.

In 2022, businesses need to take time to understand the impact: How will a sudden price increase affect their bottom line if they raise prices? If fewer people buy their products, their revenue will decline; if they keep prices as is, they may sell a higher number of units but endure lower profits per item sold. These are not choices any business wants to make.

To prepare, they need to develop what-if scenarios and explore workaround solutions they can deploy quickly. They need to analyze future costs to fully understand what a single raw material change will do to the price of their finished goods.

Matt Heerey
President, Manufacturing Division, ECI Software Solutions



PLAYING THE INVENTORY HAND

Pre-ordering to ease the tension resulting from supply chain issues is one major trend to continue in 2022. Supply chain disruptions have wreaked havoc on consumers and buyers expecting on-time orders. At the same time, consumers are increasingly pre-ordering items to be manufactured and even customizing them to their liking.

This alleviates tension on the supply chain by allowing businesses to continue to sell and generate revenue while keeping customers informed that fulfillment will take longer than usual. This strategy is also on the rise because businesses across industries, especially in the B2B space, are perfecting their e-commerce channels by investing in their online presence, making these pre-order purchases more convenient and easier.

This trend will continue as businesses invest more in e-commerce capabilities and scale pre-ordering capabilities to stay competitive and deliver on buyers' expectations.

Dan Neiveem
Co-founder and Principal, Avionos

Supply shortages will persist for both durable and non-durable goods. More manufacturers will consider vertical integration (for batteries, chips, etc.). At the same time, we're likely to see more hoarding among consumers and higher stocking levels among manufacturers and distributors.

Eric Allais
President and CEO, PathGuide Technologies

The system isn't working, and future closures will wreak havoc on just-in-time supply chains. We are pushing more and more into a system that isn't working. Many are focusing on when things will get better and the answer is no time soon.

With just-in-time supply chains, there is some room for delays here or there for excess stock if a factory closes for a day or two, but anything more than that causes a problem. A single disruption in a supply chain in one place, when everything is lean and complex, affects most of the direct chain, but also that impact spreads across other supply chains—such are the interdependencies in global trade flows.

If you don't have visibility, you have issues. Essentially, we have created specialist economies: Cardboard gets made in China, semiconductors are in Southeast Asia, and if there is a disruption in one of those markets there is a problem for an entire industry.

Simon Geale
Executive Vice President, Proxima



DOUBLING DOWN ON CAPACITY AND RATES

Changes in consumer buying behavior continue to drive tight transportation capacity in 2022.

Shippers and logistics service providers (LSPs) can expect a tight transportation market and delays across all modes. Maritime shipping volumes are running at record rates, and ocean carriers are booked well through 2022.

What's driving the increased demand are relatively strong economies and a fundamental shift in consumer behavior to purchasing more goods and fewer services such as travel and entertainment. Shippers and LSPs need to adjust trade flows to less congested lanes and to new technologies that unlock trapped transportation capacity due to inefficiencies that still exist in the transportation market.

Chris Jones
EVP of Industry and Services, Descartes

Transportation capacity will be severely limited in 2022. Equipment markets continue to fall behind schedule in delivering replacement tractors and trailers, led by OEMs with few options to navigate parts and production labor deficits. Even if shortages improve, and equipment markets correct themselves, transportation providers may still be unable to hire enough drivers to meet demand in 2022.

Evan Pohaski
Founder and CEO,
JLE Industries

Several factors led to high truck freight rates in 2021, including faster-than-anticipated economic recovery, increase in e-commerce, equipment shortages, and labor issues. These factors are expected to continue, keeping rates high in 2022, though the pace of increasing rates should ease.



With economic recovery expected to continue through 2022, trucking services will be in demand as retailers attempt to keep shelves stocked. Additionally, as the chip shortage subsides, we can expect auto manufacturing and deliveries to increase, putting further pressure on trucking services.

E-commerce will continue playing a larger role in retail sales. Consumers can be expected to shift some of their spending to travel and experiences. While we expect to see continued growth in 2022, it will be at a more measured pace, which will help ease some stress on truckers.

Equipment shortages will continue to play a role in truck freight rates through at least the first half of 2022. Supply chain constraints will hamper production of heavy- and medium-duty trucks through the first half of 2022, while increasing chassis production will not have a meaningful impact until Q3.

Driver retention issues will continue to be a challenge. Several programs have led to an increase in commercial driver's licenses (CDLs) issued. Even with an abundance of licensed drivers available, keeping drivers in the industry will be a challenge.

Umar Sheikh
AVP, Credit Analyst, Industry Manager
Euler Hermes

Transportation capacity constraints are a long-term systemic issue and not likely to turn around quickly.

We are currently experiencing a mix of constraints—from a lack of labor to infrastructure constraints needed to keep the growing volume of freight flowing.

Original equipment manufacturers (OEMs) have delayed delivery of much-needed new trucking assets. Carriers struggle as drivers opt out because competing jobs continue to pay higher wages. Government grant programs targeted at building new driver training facilities and programs will only provide relief if the industry can attract new drivers. Rising fuel costs and inflationary pressures will only add to this challenging outlook.

Carriers now reject more than 1 out of every 5 loads tendered under contract. Trucking will see a growing gap between supply and demand. However, these transportation constraints also offer tremendous opportunities. Rail has an opportunity to recapture lost market share and significantly ease trucking capacity constraints if they can figure out how to make rail easier to use with greater transparency.

Private transportation fleets could be the biggest gainers. There has never been a more compelling time for those operators to provide their fleets to spot markets. They can increase fleet utilization by reducing empty miles and capture significant revenue. Resolving transportation capacity constraints requires everyone in the transportation ecosystem to rethink how they offer their services and how they utilize their assets most effectively.

Sylvie Thompson
Supply Chain Transformation
Practice Lead, NTT DATA
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RETAIL SHUFFLE

Upstream investments will increase. In 2022, retailers will shift their focus to the supply chain and, specifically, warehouse and distribution center operations. Many still use legacy technology systems or manual processes to guide inventory, fulfillment, and logistics actions—and that doesn't mesh with modern retail models.

Many technology solutions used in stores will extend to the back of the store and beyond. Automation of inventory movements, decision-making, and task assignments will quickly follow.

Mark Wheeler
Director, Supply Chain Solutions, Zebra Technologies

I foresee massive growth in a few key areas of supply chain planning and execution technology. First are demand planning and inventory optimization platforms that are built with an AI/ML predictive analytics engine. These will support omnichannel retailers and brands in planning inventory and position inventory to improve customer service.

Second are order management platforms that are built with the ability to integrate with complementary commerce platforms. This technology gives retailers endless opportunities to delight customers.

Finally, expect a resurgence in visibility platforms that help distribution and retail supply chain-centric enterprises answer the question: "where is my order"?

Jim Barnes
CEO, enVista

Continued fulfillment innovation will further optimize retail operations: After coping with the pandemic-driven supply disruptions and consumer demand shifts to online and omnichannel fulfillment, retailers will revisit their inventory strategies across the supply chain, but especially as it relates to getting inventory to customers.



In 2022, retailers will experiment more heavily with dark stores, gray stores, dropship, and more dynamic use of fulfillment rules—for example, replenishing stores from the e-commerce DC if inventory is moving faster in stores than online, or holding back a replenishment order for stores to send to the e-commerce DC instead if the opposite is happening.

Nikki Baird
VP, Retail Innovation, Aptos

Retailers on either side of the financial spectrum will thrive as consumers shop in high-end and experience-based stores or in off-price retailers. But commodity-based retailers will struggle to remain profitable unless they reimagine the way they operate—both in-store and across the supply chain.

Today's consumers pressure retailer margins with expectations for fast, free shipping, sustainable products, and sizable promotions and price matching. To stay afloat, retail businesses have to meet consumer demands while implementing strategic cost containment initiatives that find profit improvements and efficiencies and reduce spending in marketing, IT, corporate services, and more.

David Pennino
CEO, LogicSource

The retail sector is a fast-growing segment for digital twins and an early supply chain opportunity. The total market for retail/consumer digital twins is expected to exceed \$471 million, more than doubling within two years.

Examples include Dassault Systèmes' Store Electronic Systems and Microsoft Azure's Digital Twins to help address retail issues such as model physical spaces to simulate customer traffic patterns, and review in-stock/out-of-stock conditions. HERE offers digital twin capabilities that can support retail, such as connecting a digital twin to embedded sensors to gather data for financial analysis and projection. This, in turn, helps retailers and brands refine and optimize forecasting, adjust pricing, or offer customer-specific opportunities.

Susan Beardslee
Principal Analyst
ABI Research

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ALL IN FOR E-COMMERCE

We'll see companies follow in the footsteps of Nike and evolve from wholesale to direct-to-consumer e-commerce distribution. The improved margins and inventory controls are just a few reasons why this will continue to be a smart strategic trend.

Dusty Dean
Co-founder and CEO, BITCADET

This year, there will be a continuing and rising shift from physical to digital retail. In the next 5 years, e-commerce and brand sales will be 30% of all retail sales. Brands like Nike, whose digital sales represent 21% of total sales, will be a contributing factor to e-commerce increasing from 13.8% to 30% in the next five years. Wholesale is becoming the new retail to drive revenue and retail is becoming the new wholesale to improve gross margins.

Jim Barnes
CEO, enVista

Strong growth across e-commerce tech and service providers throughout the pandemic indicates that conventional sellers are leaning harder on e-commerce to manage unpredictable conditions. Daily consumer spending online is outstanding, and I'm confident the e-commerce industry will keep filling the gaps of physical retail during COVID.

There is nothing more important for sellers right now than having real-time visibility into the product pipeline, and then being able to communicate that information to consumers. Retailers are looking for solutions to help manage inventory problems and improve specialized customer service.

Sellers can no longer employ a "set it and forget it" strategy. Resources, content, and strategy must be adjusted constantly, but in every case, clear, real-time data is the antidote to market anxiety. Sellers have to watch their data like a hawk, and be ready to move quickly when conditions shift.

Rick Wilson
CEO, Miva



Regional parcel carriers will play a more critical role in e-commerce delivery. Even the world's largest parcel carriers struggled with limited capacity in 2021 under the barrage of e-commerce orders. But one carrier's challenge is another's opportunity.

The use of regional parcel carriers will surge in 2022. Specializing in short-haul deliveries, these regionals comprise just 6 to 8% of the overall U.S. parcel delivery market, but cover more than 85% of the U.S. population.

As national carriers continue to experience capacity pressure, regionals provide a strategic relief valve to keep products flowing and avoid delays. But mostly it comes down to costs. FedEx and UPS announced rate increases and an ever-expanding list of accessorial surcharges can drive costs even higher. Within their defined territories, regional carriers often have lower rates on next-day and 2-day delivery, and they have fewer surcharges.

Another plus, because they don't have to route parcels through a hub, regionals typically offer later pickup times, while still meeting overnight delivery requirements.

For these reasons, shippers will rely more on regional parcel carriers in 2022 to diversify their carrier base, increase capacity, and lower parcel shipping costs.

Harry Drajpuch
CEO, Amware Fulfillment

With great popularity comes great scalability...challenges.

E-commerce continues to explode. This rapid market expansion puts direct-to-consumer brands between a rock and a hard place: The markets for both advertising and logistics services are becoming more fragmented, complex, and expensive than ever. To survive, brands need to seek out a diversified mix of vendors.

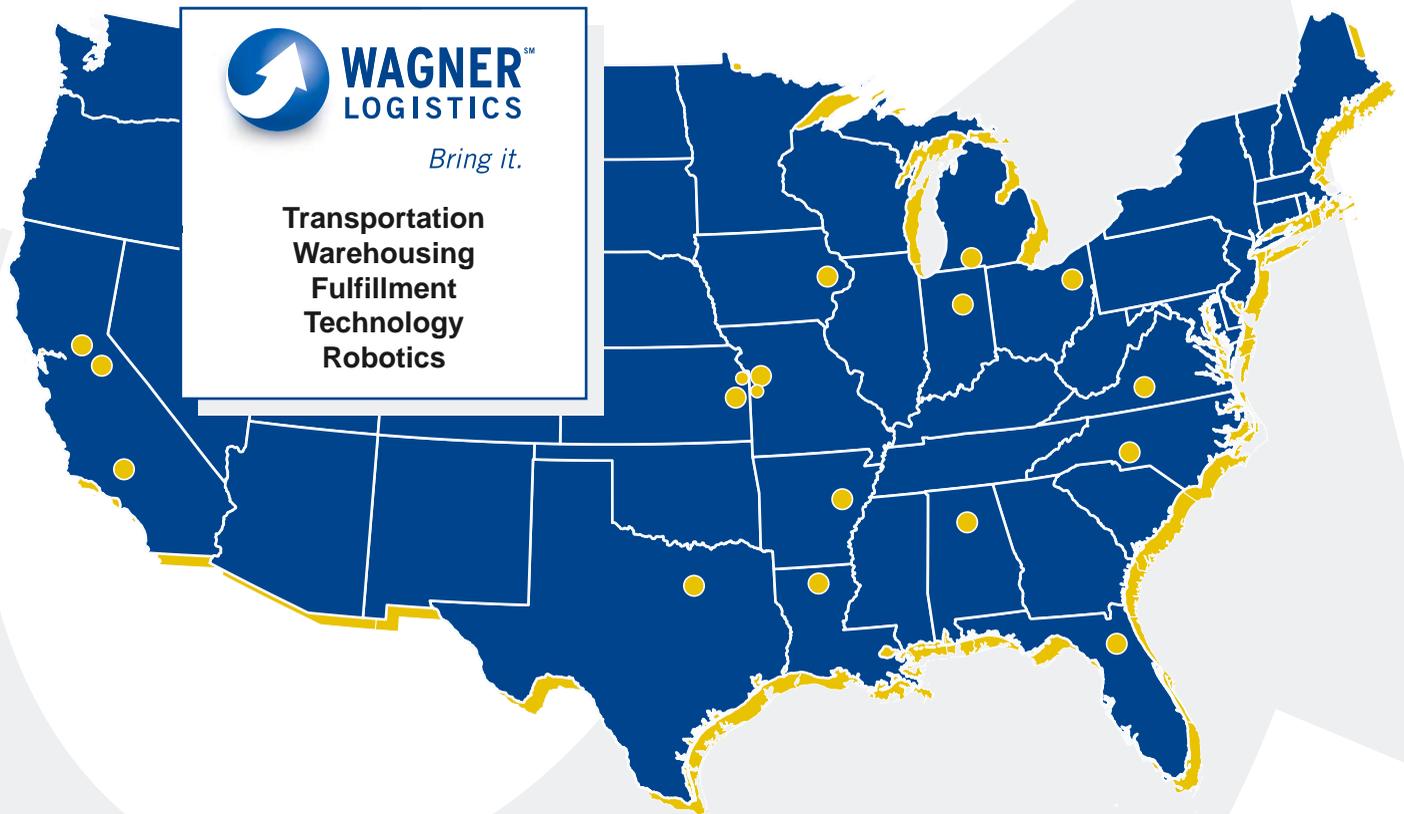
This means partnering with brick-and-mortar chains and emerging marketplaces in advertising. In logistics, this will be defined by multicarrier portfolios and shipping technologies. Ultra-fast delivery grabs headlines in dense urban areas, but housing markets in less populated regions and secondary metros have seen the greatest growth—meaning many of the most affluent consumers now live in areas that are the most expensive to deliver to.

To lower the cost of delivery, digital brands will either need to sacrifice speed or pass shipping costs onto consumers. And because the atoms of physical logistics don't scale as easily as the bits of digital advertising, 2022 will be a year of consolidation and partnerships among logistics vendors to try and achieve economies of scale.

Vijay Ramachandran
Vice President, Marketing Strategy + Planning
Pitney Bowes Global Ecommerce

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AGING TECHNOLOGY

We will see a lot of investments in supply chain technology, especially in artificial intelligence (AI) and machine learning (ML) capabilities as a response to labor shortages and supply chain uncertainties. A majority of logistics supply chains will invest in AI by the end of 2022, resulting in massive productivity gains. As more operations are digitized, ML will be key for demand forecasting applications.

ML-enabled demand forecasting has been shown to lessen supply chain errors by up to 50%. Organizations can leverage ML-based demand planning to optimize inventory levels efficiently. ML enhances demand forecasting by aggregating real-time information from multiple data points. ML analytics and forecasting also reduces the need for mass historical data as it detects trends from similar products and uses that data to make improved predictions, which allows upgraded performance with every iteration.

Adhish Luitel, Industry Analyst, ABI Research

I predict we will see applications of AI accelerate drastically to avoid another catastrophic domino effect like we are seeing now.

Outdated prediction models are a critical flaw in capacity planning. Every day we see stories of different links in the chain failing to predict the obvious, given the failure right before them. AI has the unique capability to understand the situation from a more holistic view than any single entity. AI that can understand shopping trends emerging months ahead of time and adjust needs for cargo ships will become a norm.

James Kaplan
CEO, MeetKai

In 2022, expect to see more multi-tenant applications that allow parties to collaborate in real time and give stakeholders visibility and accountability to what's happening. Blockchain, which has been nothing more than a supply chain buzzword for years, may actually translate to some valuable use cases to address some of the challenges, inefficiencies, and black holes that have existed for years but have not been heavily scrutinized until recently.

Corey Bertsch, VP Solutions
Consulting, Slync.io

Businesses will have rising vendor expectations. Companies are starting to demand more from their vendors in terms of functionality, cost-effectiveness, and reliability.

Supply chain teams now need tools that work, use their data in ways that haven't historically been done, and provide a competitive advantage. Companies are no longer settling for clunky, one-size-fits-all warehouse and labor management systems that come with costly upgrades and don't work the way teams need them to in the new realities of today's business world.

Alex Wakefield
CEO, Longbow Advantage

Standard solution/platform based service level agreements (SLAs) will be replaced by business SLAs. As more enterprises engage additional vendors for technology solutions, they will demand much stricter SLAs than are standard historically. Further, our customers will hold all their vendors to a holistic business-level SLA over individual platform-specific SLAs. Their offering to eventual end customers would be as weak as the weakest provider. I estimate the standard SLA in the B2B world will shrink to 30 minutes or less in 2022, especially for critical business transactions.

Meeting a 30-minute SLA is a challenging task—especially for vendors who have hundreds of customers. To meet this shortened SLA demand, more supply chain technology vendors will offer completely self-serviceable products that do not require external support at a moment's notice. Otherwise, vendors will need to significantly increase their hiring to meet such short SLA demands.

Vipin Mittal, VP, Customer Experience, Cleo

3G sunset will impact supply chain visibility.

In 2022, carriers including AT&T, T-Mobile/Sprint and Verizon will complete their 3G sunsets to make way for 5G networks.

Once these 3G networks go dark, any device that relies on a 3G cellular connection will stop transmitting data. This includes telematics gateways installed in trucks, tractors, and trailers, as well as the sensor devices that communicate with those gateways.

Organizations that are still reliant on 3G devices to track, monitor, and manage their supply chains will lose visibility, to the detriment of transportation efficiency, ongoing asset tracking, and compliance.

Organizations need to start taking proactive steps to upgrade their portfolios of devices to 4G to ensure continuity of data collection and transmission.

Kinana Hussain
Vice President, Product
Management, CalAmp





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DEALING IN DISRUPTION

Uncertainty, instability, and delay in global supply chains revealed that companies were seriously underinvested in the management of their first mile of supply, including planning, supplier and carrier collaboration, ocean and air shipment visibility, and interactions with multiple forwarders and 3PLs at once. These underserved first-mile processes were critical to business survival when pandemic impacts settled in for the long haul to worldwide economies.

The future demands that businesses adapt continuously to frequent supply chain disruption and volatility. Companies will re-prioritize first-mile service provider partnerships and technology investments as they pursue greater supply chain transparency, starting with overseas suppliers. Improving resilience requires more agile source-make-move decisions and execution support. Getting products across that last mile to end customers reliably depends entirely on improving control and flexibility for the first mile.

Monica Truelsch, Senior Director, Go-to-Market, Infor

In 2022, businesses will re-examine their business continuity plans to ensure supply chain resiliency is front and center. Additionally, companies are taking action to diversify their supplier base, ensuring that product shortages and international regulations will not slow down delivery times and overall operations.

Mark Robinson
President, UPS Capital

Advanced analytics and automation will continue to accelerate, helping organizations mitigate disruption via digital, agile supply chain management. The implementation of predictive and prescriptive analytics—as well as advances in big data, algorithms and robotics—will have broad-reaching effects. Specifically, the organizations that harness the power of these solutions will benefit from greater visibility, data-driven decision-making, execution efficiency, predictability and profitability. Of course, all of this hinges on effective data security and governance, as well as a dedication to reskilling employees.

Abe Eshkenazi
CEO, The Association for Supply Chain Management (ASCM)



understanding of vulnerabilities is essential to disruption mitigation.

Supplier visibility is another vital capability required for success in the next age of supply chain management. Despite increased spending on Supplier Risk and Performance Management (SRPM) products, many executives don't have clear visibility beyond Tier 1 suppliers. Growing demand, a lack of data analytics, and shorter product life cycles further exacerbate this challenge.

Clayton Nicholas
Founder and CEO
Vibronyx

Automate, automate, automate. Embracing robotic process automation and similar technologies enable supply chains with agility and resilience. Integrating these technologies simplifies transactions, automates the redundant, highlights exceptions, and limits human touch while increasing visibility to keep goods moving smoothly. Continuous innovation and increased agility are not optional, they are necessary to succeed and proactively plan and avoid disruptions.

Burt White
Global Director of Supply Chain Consulting, Slync.io

Build resilience through active collaboration. Nobody can plan for every possible scenario, but teams need to still be prepared for anything. Companies realize that all teams having real-time access to the same data can help each function perform better. Active collaboration also reduces the need for constant reporting and status sharing. If all teams have access to the same data, teams reduce their dependency on each other, freeing time and resources to focus on core responsibilities and supply chain strategies.

Alex Wakefield
CEO, Longbow Advantage

Prioritize supply chain risk management in strategic planning. Organizations must audit their people, processes, and technology for key points of failure. Regardless of industry, size, or business model, a deep

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SUSTAINABILITY IS NO BLUFF

In 2022, more organizations will translate their sustainability goals into tracking and reporting Environment, Social and Governance (ESG)-related data throughout their supply chains.

As demand for ESG transparency rises, these will be key drivers in the creation and implementation of industry-specific supply chain sustainability targets by businesses. This begins with introducing a risk-based approach to qualifying and holding suppliers accountable to their ESG impact, including more enhanced screening of suppliers through sustainability agreements in Request for Proposals (RFPs) as part of the procurement process.

Sustainability should also be assessed both upstream and downstream of the supply chain, from the extraction and processing of materials with minimal environmental impact to ensuring end products can be properly recycled.

As the world continues to digitize, technology will be leveraged further to ensure that sustainability policies are effective and progress is being made toward corporate initiatives.

Joe Schloesser, Senior Director, ISN

We see companies put more emphasis on building sustainable global supply chain networks by investing in technology that will help reduce their carbon footprint in every step of the process, from manufacturing to distribution and transportation.

Sean Elliott, Chief Technology Officer / Chief Digital Officer, Körber Supply Chain

Social initiatives like improving sustainability and supporting local businesses have become nearly as important to buyers as efficiency. B2B buyers are also ordinary consumers, and consumers are increasingly prioritizing meaningful purchases that support their core mission. In 2022, expect buyers to make more socially conscious purchases, valuing sustainability and smaller businesses over cost savings and efficiency.

Petra Schindler-Carter
Director &
General Manager
Amazon Business



SAFETY CHECK ON DECK

Today's cargo security solutions may be prompt at detection, but at best reactive. They deliver notifications when security is breached through sensor and non-sensor events. The incident is managed, but seldom avoidable.

Future cargo security solutions will extend today's technology to not just detect a breach, but also predict breaches in advance using sensor and non-sensor intelligence. They will further forecast impacts of predicted events across the entire network. For example, using sensor-data modeling, vulnerable points on a specific lane for a specific product and a specific shipment mode can be identified in advance.

Sanjay Sharma, CEO, Roambee

Supply chain risk has become a vital national security challenge. Cybersecurity risk is becoming a larger component of the overall supply chain risk landscape as expanding the digital footprint of the supply chain increases the attack surface of critical infrastructures. We need a transformatively different approach.

The answer is not to do the same things better; it's to tackle cyber supply chain security in a fundamentally different way. We must have better knowledge of vendors, improve risk prioritization, conduct multifaceted, ongoing monitoring assessments, drive remediations quickly, and take a programmatic approach. Following these steps can significantly improve cyber supply chain security measures.

Missy Gillette, Senior Associate, Leader, Cyber Risk and Assessment
Booz Allen

Supply chain threats will remain one of the most serious issues global businesses will face in 2022. Widespread product shortages and scarcely qualified operators are only the tip of the iceberg. With manufacturers and freight companies already spending much effort to address these issues, organizations along the supply chain increasingly fall vulnerable to a convergence of additional threats—more frequent and damaging natural disasters and more opportunistic criminal cartels.

Unless supply chain leaders holistically and quickly address these threats, consumers are likely to see current challenges continue and worsen over time.

Harold Pradal
Chief Commercial Officer, BSI



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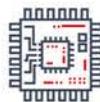
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STACKING THE WORKFORCE

Labor will be a tricky issue for merchants to navigate in 2022. Supply chain labor costs are up and warehouses had to get smart about hiring and onboarding processes. To get employees up to speed quickly, they had to make their technology and processes easy to learn and implement with a huge focus on user experience.

Additionally, the e-commerce boom has introduced unique challenges. First, it is now a requirement to ship on Saturday to be competitive on top-tier marketplaces. Second is the way e-commerce order volume is typically dispersed. Because most online shopping happens on the weekend, merchants have to significantly pick, pack, and ship more volume Saturday through Tuesday compared to the rest of the week.

These challenges tend to disproportionately affect mid-sized merchants who don't quite have the volume to secure Saturday fulfillment or guaranteed labor on their highest-volume days. These merchants need to take advantage of fulfillment providers that can aggregate their weekend order volume to negotiate affordable and reliable labor on their behalf.

Steve Denton
CEO, Ware2Go, a UPS company



Anticipate a convergence of training, plus better pay and benefits for existing employees, as well as hiring talent with foundational skills in data analytics. Organizations must be creative when attracting, reskilling, and retaining talent, as traditional approaches may not be as relevant to future supply chain needs.

Abe Eshkenazi
CEO, The Association for Supply Chain Management (ASCM)

In 2022, supply chain labor shortages will continue to grow and make it difficult for providers to retain and keep top talent in jobs long-term.

Organizations continue to look for ways, outside of bonuses, to attract skilled candidates for roles since they aren't applying for them.

They need to redefine the work environment to create an engaging culture that will work to entice skilled candidates. Labor management enhancements and pay performance will also be critical components to attracting the right candidates. Additionally, with the labor shortage and expense of adding net new warehouse square footage, we'll also see a rise in automation designed to make the most out of a limited footprint.

Steve Shebuski
VP, Digital, Blue Horseshoe (Part of Accenture)

To attract and retain talent, companies need to take a data-driven approach to improving employee retention.

First, quantify the problem—both the scope and its impact on the organization. How does your turnover rate compare to the industry average? How much does your turnover cost annually?

Second, identify the root causes: pay, time between promotions, training opportunities, bad bosses, locations. These are all variables which, when evaluated using accurate and consistent data, can reveal hot spots for resignations.

Mark Fagan
Global Leader, Manufacturing and Distribution, Moore Global

Hiring for retention will be the main hiring focus for the supply chain industry in 2022, with a particular emphasis on streamlining applications due to increased competition. Introducing innovations like automation will help further streamline the process while ensuring it is effective and fair for candidates.

Companies will also be focused on evaluating and hiring candidates with transferable, generalized skills—like critical thinking and problem solving—instead of specific industry or technical expertise to fill roles quicker.

In 2022, hiring managers will continue to be challenged with building a hiring process that is effective and efficient. The biggest difficulty will be hiring good workers quickly to mitigate turnover and candidate dropout. To increase efficiency, companies will have to make intelligent changes to their hiring processes, such as implementing more focused hiring assessments and taking advantage of the data they already have within their organization.

Carter Gibson, Ph.D.
Managing Associate, Modern Hire

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TRUCKING: THE JACK OF ALL TRADE

Two rising issues to watch out for in 2022 include detention and facility delays and driver parking. While supply chain delays and the driver shortage continue exacerbating these trends, both the trucking industry and the supply chain must prioritize driver accommodation.

Drivers remain frustrated because delays and parking issues have negatively impacted their delivery times and stalled routes traditionally timed to the minute. Trucking companies incorporating predictive analysis and automation into their planning will empower fleets and drivers to better prepare for these potential delays and more effectively optimize routes.

Another issue revolves around congestion at the ports. Port congestion won't decrease any time soon. A new domestic pilot program was introduced to help speed the process. The federal government has relaxed certain regulations and crews can stack containers higher. Some ports have extended gate hours. The focus in 2022 will remain on working to overcome these barriers and resolve supply chain issues sooner rather than later.

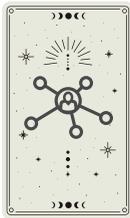


Avi Geller, CEO and Founder, Maven Machines

A considerable talent shortage.

In 2022, the trucking industry will continue its uphill battle. Faced with one of the worst driver shortages to date, we won't see relief any time soon as nearly a quarter of the workforce is expected to retire in the next decade. Now is not the time to do wrong by your people. Competition for talent is fierce and fleet owners need to make sure their drivers feel loved while brokers need to treat their partners with respect.

Barry Conlon
CEO, Overhaul



3PLS CALL IN THE CHIPS

The 3PL industry will eagerly jump at the opportunity to manage returns for their customers. As long as 3PLs can offer a returns process that's faster and more cost-efficient than what a retailer could achieve on their own, 3PLs stand to differentiate themselves in a crowded market. In the coming year, this new business opportunity will become more lucrative, and the 3PLs that are prepared for it will win and retain the greatest market share.

Gaurav Saran, CEO, ReverseLogix

3PLs will be redefined. Expect many retailers to recruit sellers and become third-party marketplaces—meeting consumers where they already are. 3PL warehouse spaces have reached a premium. More importantly, 3PLs want to prioritize more outbound fulfillment of inventory, which entails picking, packing, and shipping. This creates a void for retailers who have to navigate the complexities of becoming their own de facto 3PLs and use their store space to fulfill outbound orders and returns processing.

Krish Iyer, VP of Industry Relations and Partnerships, Auctane

Third-party logistics will remain under tremendous pressure to do more with less, especially as they continue to feel the effects of the ongoing labor shortage in supply chain roles. In 2022, 3PLs will contract based on throughput rather than headcount to shield from labor uncertainty and benefit from increased efficiency through automation.

With mobile automation that isn't tied to any facility infrastructure, these benefits can be realized not just in one contracted facility but transferred across facilities as demand requires. 3PLs will extend robots-as-a-service into productivity by subscription, reaping the benefits of fast implementation, on-the-fly flexibility, modular fleets, and universal applicability across sites.

Jeff Christensen, VP of Product, Seegrid

Having a solid 3PL provider with multiple carriers in each market and leveraging key industry partners for drayage management can be the difference between barely keeping your head above water and thriving in today's chaotic market.

A multi-carrier strategy provides shippers with flexibility, additional capacity, and the ability to benchmark rates and mitigate issues on the fly. Accurate, actionable data is also paramount to designing and executing a successful bid strategy. Sharing your forecast and weekly volumes by port ramp with your 3PL provider can get you better pricing, committed capacity, and will help carriers better service your business.

Mike Williams, Executive Vice President, Commercial & Logistics, ContainerPort Group

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PLAYING THE GLOBAL GAME

Supply chain officers are not in the back row anymore. Pre-COVID, presentations from the chief supply chain officer (CSCO) to leadership may have been scheduled as a courtesy, right before lunch. Now the CSCO is a VIP at every meeting. CSCOs are changing strategies in real time, including:

- Dual sourcing and dual tooling
- Routing container ships to other ports of entry
- Off-loading container contents at the port
- Just-in-time inventory has been abandoned and companies will continue to stockpile through 2022
- Move product sourcing for those with low margins but require a large amount of container space

Longer-term, companies are implementing supply chain management solutions that can bring the entire supply chain into view by connecting to sourcing partners.

Mark Fagan
Global Leader, Manufacturing and Distribution, Moore Global Partner, Citrin Cooperman

Global supply chains should be strategic, a business enabler, a revenue driver and a differentiator. In 2022, more organizations will attain incredible value from harmonizing data across ecosystem partners and applying analytics. Data-driven insights will serve as a basis for intelligent decision making and prompt actionable management decisions. By introducing best practices and technologies from other industries like scenario modeling, AI/ML and digital twins, the supply chain of the future will be transparent, agile, resilient and responsive on a global scale.

Clayton Nicholas
Founder and CEO
Vibronyx



WAREHOUSING WILD CARD

In 2022 we'll see more companies stockpile inventories to adjust to the overall supply chain shortage. We already see a boom with construction of new warehouses. A lot of companies were utilizing third-party warehouses to cross-dock lower levels of inventory. Now many are building their own warehouses and distribution centers across the country.

The other piece of this boom is the demand for e-commerce. In the past, companies would ship to retail locations very quickly after products were manufactured. Now they ship to DCs, where they are warehoused until the consumer orders online.

Tyler J. Wiard
Director of Business Development
Candor Expedite



Expect buildings to be retrofitted or designed to have the proper specifications needed to accommodate investments in automation technologies such as robotics for package handling and driverless trucks. The average clear height for new big box warehouses has already increased by 23% to 37 feet since 2000, notes a Savills report. Assume that heights will grow as robotics advancements allow tenants to leverage vertical storage.

Gregg Healy
Head, Industrial Practice Group
Savills

Get ready for a surge in warehouse robotics in the coming year.

Major supply chains have already started deploying robotics to speed and improve accuracy in retail fulfillment. Mobile and collaborative robots working alongside humans can help organizations overcome staffing complexities, latency issues, and workplace safety concerns. Order picking can account for over half of staff costs.

By deploying robotics to reduce labor and fulfillment latency, warehouse operators can harness time saved to focus on other areas of improvement such as warehouse workflow enhancement. Warehouse robotics adoption will also start ramping up due to reduction in costs of robots. More robotics vendors are now adopting subscription-based models and are providing a wall-to-wall robotics-as-a-service offering that allows warehouse operators to avoid large up-front costs and enjoy streamlined implementation.

Adhish Luitel
Industry Analyst, ABI Research



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LAST MILE LAY DOWN

Last-mile innovation will have a positive impact on sustainability as well as on consumers and the bottom line for merchants. Look for partnerships, even among competitors. Trucks that might be only partially filled or even empty on a return trip can be full if businesses are willing to collaborate. This is not only more efficient for brands,

and moves goods more quickly, it lowers the carbon footprint for last-mile delivery.

I expect to see more electric vehicles on the road as companies look to update their fleets and try to meet their own carbon emission goals.

I predict more innovation on returns, especially for apparel brands. Look for 360 videos at the purchase stage, AI wardrobe fitting, and other innovations so customers are more likely to order the correct item on the first try, eliminating the need for returns.

Laura Lough
Fulfillment and Logistics Partnership Director, Digital River

Same-day delivery is coming—and the gig economy is making it a reality. The pandemic furthered the online delivery moment. More consumers showed an interest in two-day and same-delivery, spurring a flurry of last-mile delivery options to make this a reality. In 2022, same-day delivery interest will continue, with more carriers exploring shared driver and gig economy options to make this a reality. As carriers explore and test these new options, transparency and communication will be essential to long-term success.

Mark Robinson
President, UPS Capital



THE INTERMODAL PLAY

Today, intermodal shipment movement milestones are captured in disparate systems and subsequently, the data is not of the same quality throughout the journey.

For example, the port system captures data about the shipment's movement within the port, the transporters capture and manage the milestones about which airline, vessel, or truck the shipment is in, and the customer creates and tracks the purchase order (PO). A significant amount of data captured through these multiple systems could have manual inputs that are prone to error. This results in a broken visibility trail or delayed updates, increasing risk.

Shipment milestone data of the future will be democratized through a common, high-quality data lake powered by product-level sensors. This will drive automated updates, accuracy, and timely capture of milestones for any shipment without relying on the supply chain actors.

Sanjay Sharma
CEO, Roambee

Continuing intermodal collaboration will drive interoperability. Since the first days of intermodalism, collaboration, cooperation, and communication have been at its core. No one can operate within a silo; each intermodal stakeholder needs to work together to do its job. Over these past two years, the supply chain has relied on the collaborative relationship of the intermodal community to move freight like never before.

Throughout the pandemic, it became increasingly common for competitors to become collaborators to keep the supply chain moving. We gained a new respect for the importance of sharing equipment and space, but most importantly, we learned the value of sharing information and data. Keeping our partners informed with updated and accurate information was the only way we could forecast and optimize our equipment, making sure it was at the right place at the right time. This planning was critical to keeping the cargo moving.

Looking to 2022, this trend of building partnerships and putting supply chain fluidity ahead of personal goals will become more commonplace.

Mike Wilson
Chief Executive Officer
Consolidated Chassis Management, LLC (CCM)

Carriers limiting their IPI (inland point intermodal) rail services was a big challenge for importers throughout 2021. It's driving a resurgence in demand for transload and cross-dock services along the West Coast, and now on the East Coast—in places like Savannah and Norfolk. We expect this trend to accelerate through 2022 and into 2023. For many importers in the Midwest, transloading may simply be the only way to move international cargo to inland distribution centers.

More importers are eyeing the East Coast for 2022. One driver is the fear of a West Coast labor strike. With vessel delays in southern California reaching record highs, any labor disruption could further erode conditions.

Transit times from Asia to the East Coast may prove faster in 2022. We see importers, especially larger retailers, quickly increasing their East Coast distribution footprint. However, shippers need to act fast: Drayage and warehouse capacity in New York, Norfolk and Savannah is limited, so any plan to increase your East Coast footprint needs to be in place by the end of Q1 2022 before it is too late.

Michael Van Hagen
Sr. Vice President, Supply Chain, World Distribution Services

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THE (NOT SO) HIDDEN BENEFITS OF INTERMODAL



Shippers that turn to intermodal can ease capacity challenges and save money on long-haul shipments unburdened by pressing deadlines.

By Tom Gresham



Intermodal shipping can be an afterthought for some shippers, an option that they do not even consider when weighing their supply chain needs and challenges. In fact, sometimes shippers are completely in the dark about intermodal's unique benefits.

However, incorporating intermodal yields many success stories and rarely inspires regret.

"We never have customers say they would rather send a truck across the country," says Barbara Slawter, president, Odyssey Intermodal Bulk Chemical, part of Connecticut-based Odyssey Logistics & Technology Corporation. "We have had plenty of shippers over the years who never heard of intermodal before but now they look at pricing and consider intermodal for moves over 1,000 miles to see if it is a fit."

Supply chain disruptions centering on the intermodal market have grabbed headlines during the pandemic. Demand surges for imported goods led to high-profile delays at key high-traffic ports. Farther down the intermodal-based supply chain, congestion challenges arose from constraints on equipment, on space at rail terminals and intermodal warehouses, and on labor.

Still, experts say that intermodal continues to be an effective solution for shippers with long lead times and long hauls. Intermodal volumes saw robust growth for four straight quarters, before a 2.9% year-over-year decline in the third quarter of 2021, according to the Intermodal Association of North America (see chart).

"Organizations that can be flexible and agile will find opportunities within the existing infrastructure," Slawter says.

CAPACITY IS THE NAME OF THE GAME

Intermodal is a vital tool to meeting the challenges of the moment.

"In the current state of supply chain disruption, utilizing available capacity is the name of the game," notes Steven Leonard, chief sales and customer engagement officer for ArcBest, an Arkansas-based freight and logistics solutions provider. "Intermodal is a great way to get freight

where it needs to be—it's typically more cost effective, requires less cargo handling and produces fewer greenhouse gas emissions than over-the-road transportation."

No matter the economic landscape, intermodal allows for the consolidation of large volumes, leading to lower shipment costs. The pandemic and constrained trucking capacity have helped accentuate the benefits of intermodal for shippers.

In particular, limited truck capacity has driven up spot market truck rates, says Jeff Trombly, Ph.D., clinical assistant professor of supply chain management at the University of Tennessee, increasing intermodal shipping's cost benefits over long trips. If the cost savings are there, just about any company can benefit from exploring intermodal, he adds.

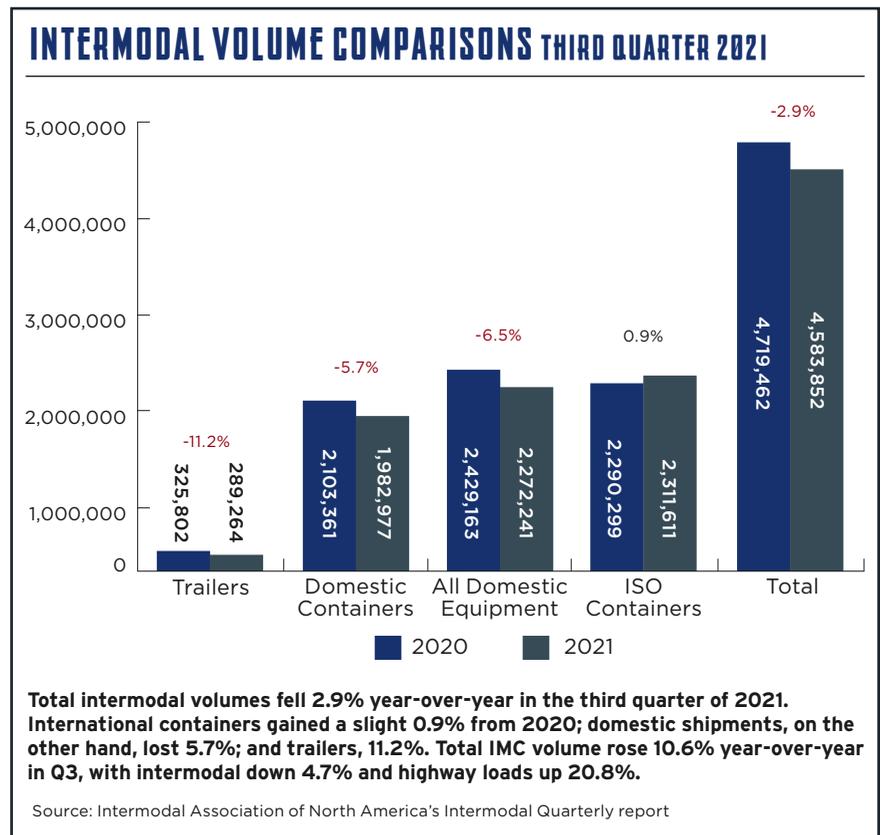
The more freight volume a shipper sends to an intermodal provider, the better its price will be.

"When you think of where truckload rates are right now, intermodal is probably going to be a better option from a competitive price standpoint," says Drew Herpich, chief commercial officer for Transportation Insight Holding Company, a logistics solutions provider based in North Carolina.

LEVERAGING DRIVER RESOURCES

Cost savings typically have been a key driver for shippers shifting to intermodal. But in today's environment, capacity represents the greatest advantage to putting long haul freight onto an intermodal service.

"Not only do intermodal shippers add capacity for clients, but they also enable them to get more efficient use of existing driver resources by freeing them up from the long haul, which can take up to one week until they can return to help with another shipment," Slawter says.



The emergence of the capacity crunch makes it more important than ever for intermodal to be in the forefront.

“The driver capacity challenges need to be met head on,” Slawter says. “Intermodal does double duty by providing a more attractive work environment for drivers who primarily want to be home every night and freeing up existing capacity.

“Intermodal accomplishes this by putting the long haul portion of the move on the rail, enabling the driver pool to handle only the shorter moves on each end,” she adds. “Our industry simply cannot afford to send drivers across the country where they are gone for weeks at a time. This diminishes driver capacity for all, perpetuates a poor quality of life for drivers, and needlessly harms our environment when a more sustainable solution is readily available.”

ADVANCING SUSTAINABILITY

Intermodal helps companies advance their sustainability initiatives because it is more energy efficient and results in lower emissions than trucking. A common myth Slawter encounters is that shippers have to sacrifice service to convert to intermodal. She points to the case of an Odyssey customer unable to secure tank trucks from the Gulf of Mexico to the Pacific Northwest.

“We offered them intermodal to shorten the lead time by setting up our Portland storage facility as a staging area,” Slawter says. “We enabled them to store loaded ISO tanks economically and offered the customer a local source of supplies. In doing so, they were able to offer a service enhancement to their customer while still realizing freight cost savings—even after accounting for storage costs.”

For this reason, she says, “intermodal can offer a service enhancement to companies, especially in today’s environment where it might take weeks to find a long-haul driver.

“Intermodal is a timely, reliable service that is a nearly transparent substitute for long-haul trucking,” Slawter says. “Shippers gain a local point



Among the leading intermodal developments is the CSX Carolina Connector, a 330-acre site that allows trucks to bring cargo containers to a rail yard where they are transferred to trains for transport. The facility provides regional industries with efficient rail access.

of supply by holding tank containers in a local depot and delivering them to the customer on short notice—which isn’t possible with tank truck transportation.”

Intermodal shipping means longer trip times, particularly because of delays caused by the process of placing containers or trailers on rail cars on the front end of the trip and removing them on the back end, Trombly says. He notes intermodal also requires special handling equipment at rail terminals, limiting access to rail intermodal services.

“It is difficult to compete with trucking in terms of flexibility and speed,” Trombly says.

Shippers who use intermodal can gain some advantage from a cost perspective, but they likely will need to sacrifice the speed of delivery as a consequence.

Due to the capacity issues that have led to congestion issues at the ports, rail terminals, and intermodal warehouses, Herpich says the intermodal market currently is “commodity-based.”

“Because of the market we’re in now and because inventory levels are very low, there’s a need to get to the end customer quickly,” Herpich says. “A lot of shipments that used to go on rail don’t now because of the time perspective.”

THE TIME CHALLENGE

Additional transit time does create clear challenges for some shippers.

“Intermodal is a disadvantage for shippers that worry about a few extra days of transit time,” Slawter says. “This

mostly applies when lead times are too short due to product not being readily available or short notice from the end user.”

Despite the longer transit time, employing intermodal can help shippers reserve truck resources for more pressing shipments, playing a role in a diverse supply chain to help meet the need for speed.

“Rail shipping isn’t ideal for expedited shipments, but is still a great way to increase capacity options and free up truckload capacity for time-sensitive freight,” Leonard says. “In today’s supply chain environment, having those options is a valuable asset.”

IN IT FOR THE LONG HAUL

Intermodal also is not immune to driver capacity challenges and is currently encountering a driver shortage on either end of the rail trip. But “some may argue that organizations utilizing rail for the long-haul portion of the move are less impacted,” Slawter says.

“Take tank trucks as an example: Companies that choose rail are often well supported by the rail network and can offer an intermodal alternative for nearly all long-haul origin and destination pairs across North America,” Slawter says. “But as rail becomes increasingly popular during these times of uncertainty, there also can be a lack of rail reservations available in some lanes.”

In addition to taking longer, intermodal can be more unpredictable

with the timing of a shipment, sometimes making planning more challenging.

“Shippers always want to control the movement of their freight,” Herpich says. “For the most part, it is hard to control the rail moves—when they actually get offloaded, and when a train actually gets from California to Chicago, for instance. But in a truck, shippers know exactly where their product is. And they have more control over its timing.”

Looking ahead, experts point to an array of ongoing, impactful developments tied to intermodal. More communities are developing intermodal terminal facilities in the form of inland ports. For instance, the Carolina Connector, a CSX-owned 330-acre intermodal terminal, opened in November 2021 near Rocky Mount, North Carolina. And the planned 104-acre Northeast Georgia Inland Port will provide a direct link to the Port of Savannah via Norfolk Southern.

Meanwhile, South Carolina Ports announced a \$28-million expansion in 2021 of its Inland Port Greer, which extends the Port of Charleston’s reach 212 miles inland via rail.

These inland ports “are envisioned to be engines of economic growth by linking manufacturing and distribution facilities directly with a range of transportation options,” Trombly says.

The increasingly complex supply chain and its “many moving pieces” is prompting shippers to consider their approach to intermodal with fresh eyes, leading to adjustments and innovation, says Tim Sailor, founder and CEO of California-based Navigo Consulting, which specializes in contract benchmarking, distribution analysis, and carrier negotiations.

“More and more companies are focusing on their intermodal strategies in new ways that work around capacity constraints in any one mode,” Sailor says. “Many companies are also considering relocating distribution facilities as part of their intermodal strategy.”

Efforts that have sprung up during the pandemic could lead to long-term changes in the intermodal market. For instance, the Port of Los Angeles and the Port of Long Beach adopted pilots for 24/7 operations to reduce the pileups of intermodal containers at their facilities.

OPTING FOR INTERMODAL

Shippers who have not used intermodal in the past should be open-minded and flexible.

“It’s easy for shippers to use the same solution over and over, but each move can have a new solution,” Herpich says. “The solution that worked a year or two ago might not be the best solution today.”

Those participating in the intermodal market today must be prepared to manage a variety of challenges.

Warehouse capacity shortages and limited chassis availability are among the issues complicating the intermodal market at times during the pandemic. With that in mind, those engaging in intermodal should be “a good partner in the supply chain,” says Todd Tranausky, vice president for rail and intermodal at FTR, which provides transportation forecasting.

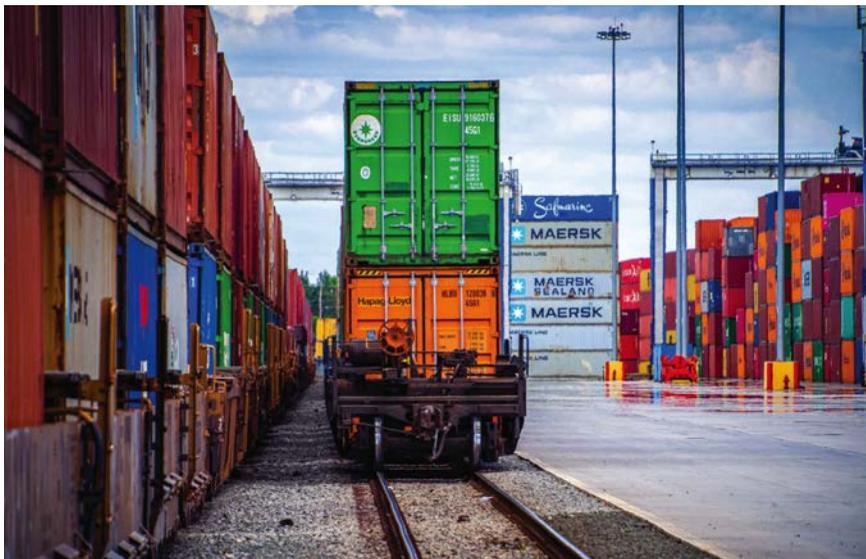
“Don’t hold on to chassis, containers and trailers any longer than you need them,” he says. “Because ultimately it affects everybody in the supply chain—not just your supply chain and your ability to get equipment but everybody’s equipment in the system. The more you hold on to, the more you perpetuate and lengthen the disruption that we’re seeing.”

The intermodal market is highly competitive, and shippers should consider working with carriers and brokers to guide them through the range of options available. An intermodal provider can help shippers shift modes smoothly, navigate disruptions, and plan for the future.

“Choose your intermodal provider the same way you choose any logistics provider; having a trusted partner is important,” Leonard says.

Slawter advises not to “sit and watch on the sidelines of intermodal.” Getting off the sidelines starts with identifying a shipper’s long-haul shipping lanes. Business intelligence and other technological tools now allow shippers to play out hypothetical scenarios for changing lanes and modes, allowing them “to make decisions that align with their cost, quality, and sustainability goals,” Slawter says.

“A shipper’s customers or internal users might not be asking for intermodal service/rates but in many cases they don’t know their options,” she adds. “They simply want a service-oriented solution for getting product from point A to B. It is up to the logistics experts to bring this to the forefront and consider different modes of transport.”



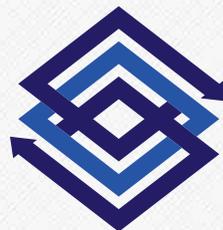
Inland Port Greer, a busy inland port in South Carolina, announced an expansion in 2021 to increase its capacity.

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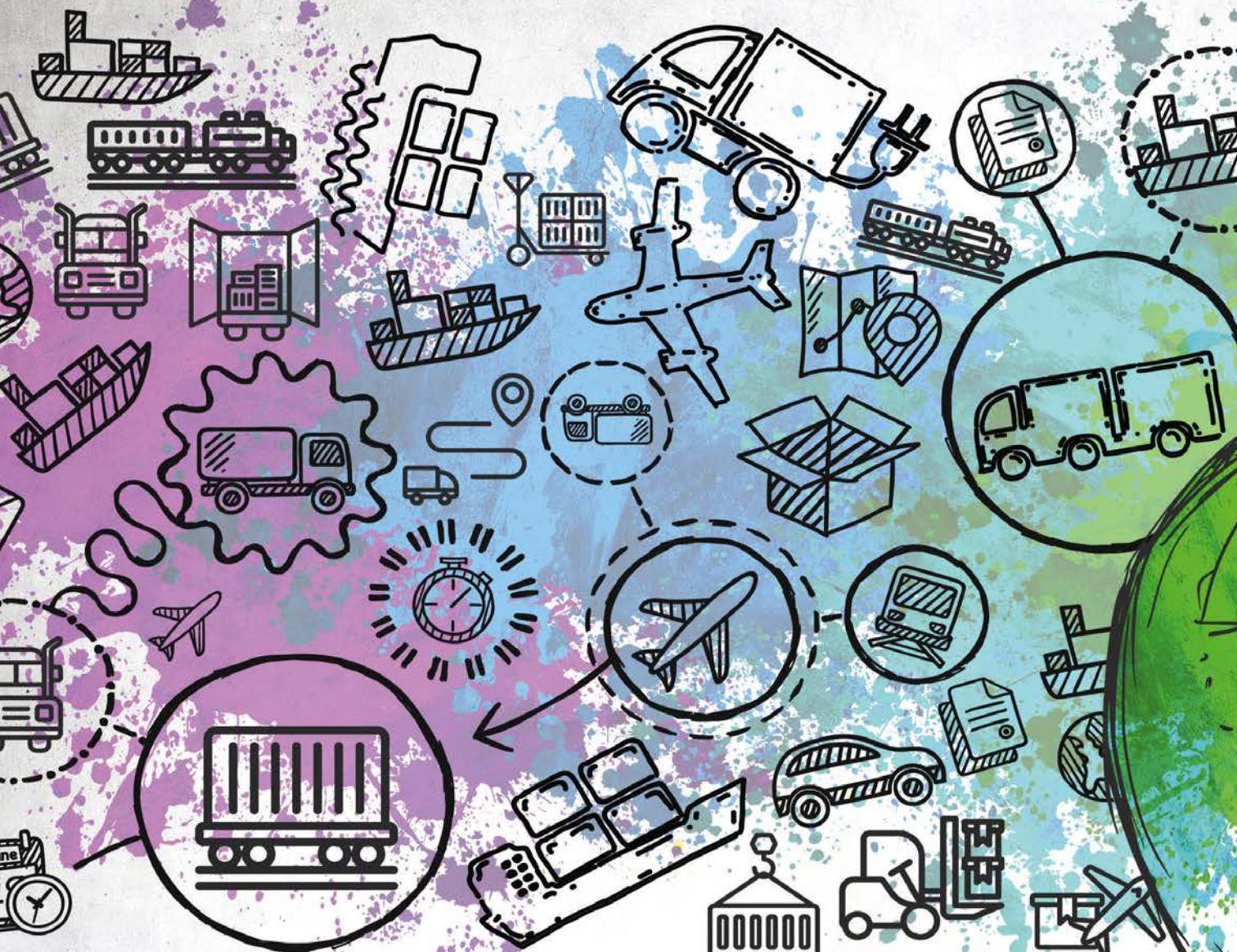
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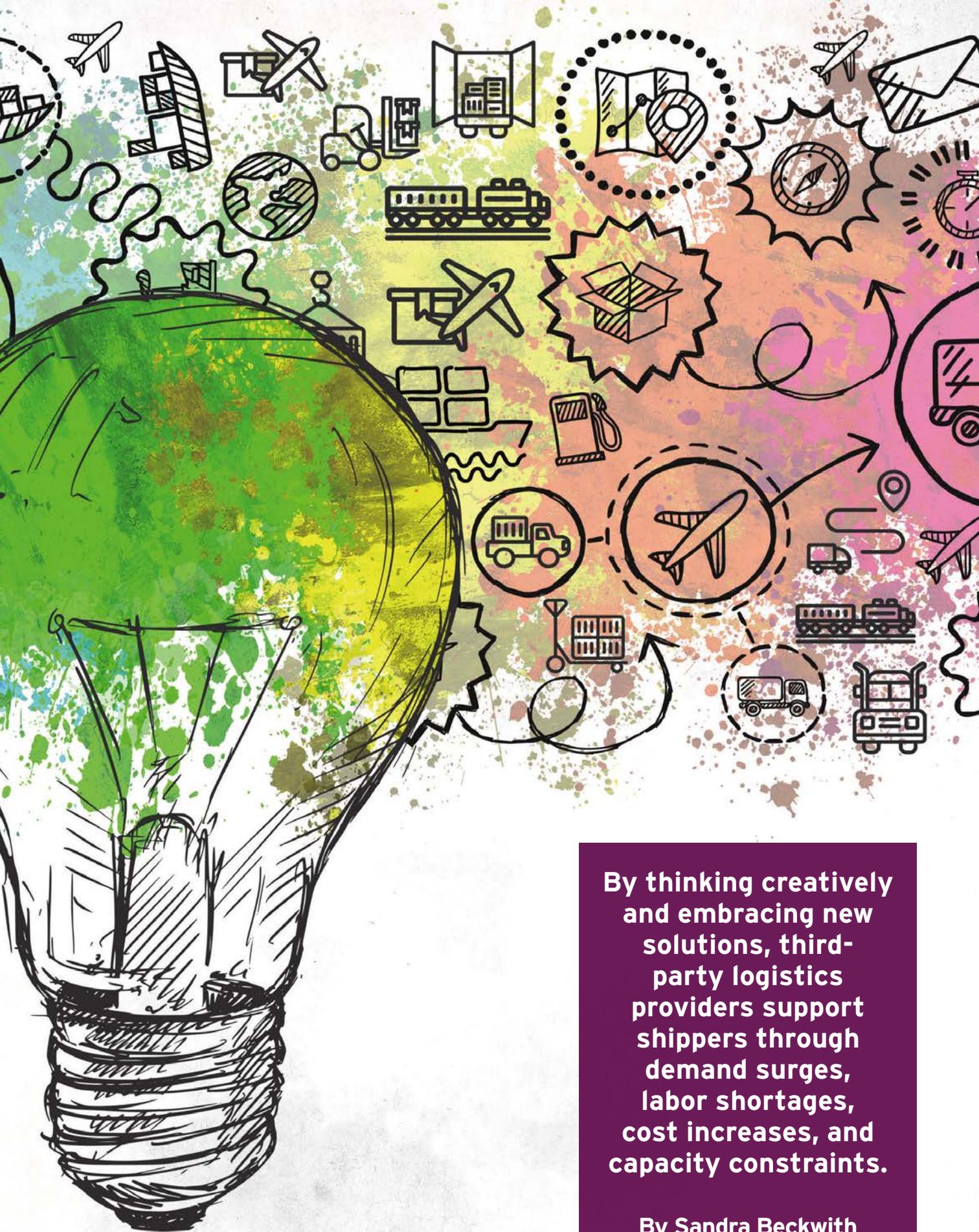
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Bright Ideas:

3PLS MANAGE GROWTH THROUGH INNOVATION



By thinking creatively and embracing new solutions, third-party logistics providers support shippers through demand surges, labor shortages, cost increases, and capacity constraints.

By Sandra Beckwith

When the global pandemic that shuttered workplaces and restaurants sent consumers to their kitchens, it was good news for young craft Chinese condiment company Fly By Jing. Home chefs shopping online for ingredients began discovering the brand's products, including its Zhong Sauce and spicy Sichuan Chili Crisp sauce.

But it was an April 2020 *New York Times Magazine* article published just one month into COVID-19 lockdowns that helped generate sales volume as hot as the brand's most popular sauce. A *Times* food writer and editor devoted much of his article about quarantine cooking condiments to the Sichuan Chili Crisp sauce origin story, even including a recipe with the sauce as an ingredient.

"We exploded into a space we hadn't been before after the article ran," says Lizzy Berryman, Fly By Jing's head of operations. "We'd been advertising digitally, but this publicity opened us up to other consumers."

Growing pains led the company to Chattanooga, Tennessee-based third-party logistics (3PL) provider Kenco Logistics, which signed on in fall 2020 to help Fly By Jing not only manage the pandemic- and publicity-fueled growth, but also to help it further expand as well. It was an important decision considering the brand has experienced ten-fold growth from 2019 to 2020, then five

times that from 2020 to 2021.

Leveraging increased consumer demand and awareness, Fly By Jing also introduced several new bundles and products that include a bottled black vinegar that needs extra protection when shipped. Working with Kenco, the brand now distributes to Whole Foods and Wegmans plus warehouse club Costco.

It has been a case study in innovation for Kenco, which has worked closely with Fly By Jing to deliver the brand's signature, unique unboxing experience to consumers. It isn't simple; each shipping package has six to eight pieces that are manually assembled.

"What we have on the floor is cardboard origami—lots of flat stack components that require twisting and manipulation of inserts to create a beautiful package," says Jeff Meneely, Kenco's e-commerce vertical vice president. "It's currently a super-manual process and will be until we can partner on a better package design."

While the two companies collaborate on packaging changes, Kenco has

adjusted other processes to improve efficiency while accommodating Fly By Jing's growth. Unlike in the beginning, Kenco now handles fulfillment in a dedicated space with a manual table assembly and packing process that's supplemented with variable-speed kitting lines.

Kenco's work to innovate alongside the growing young condiment company mirrors what has been happening with 3PLs around the country for the past two years as brands have experienced massive e-commerce growth. For many, innovation is a constant as providers look for solutions that help them address volume surges, transportation cost increases, labor shortages, and shrinking warehouse space.

INNOVATING WITH ROBOTICS

Saddle Creek Logistics Services, a 3PL based in Lakeland, Florida, has enjoyed significant growth in the past two years as order volume has increased for some e-commerce clients while others have expanded into e-commerce channels. To manage this expansion, innovation has been a strategic initiative for the 3PL, which offers brands 31 million square feet of warehouse and distribution space nationwide.

"We're looking at new technology for ways to increase productivity and reduce our dependency on labor that also gives us the flexibility to help clients handle demand fluctuations," says Grady

INNOVATION IS A CONSTANT FOR MANY THIRD-PARTY LOGISTICS PROVIDERS AS THEY LOOK FOR SOLUTIONS THAT HELP THEM ADDRESS VOLUME SURGES, TRANSPORTATION COST INCREASES, LABOR SHORTAGES, AND SHRINKING WAREHOUSE SPACE.



Growth stimulated by the pandemic and media publicity encouraged young Chinese condiment company Fly By Jing's fulfillment partner, Kenco Logistics Group, to continually innovate to keep up with demand.



WALMART, AMAZON INNOVATE AS 3PLs

Walmart entered the third-party logistics (3PL) provider space in February 2020 when it introduced Walmart Fulfillment Services (WFS), Walmart.com's version of Fulfillment by Amazon (FBA). Both services store, pick, pack, and ship vendor merchandise and handle customer service and returns for sellers on their retail sites.

Platform sellers use WFS and FBA systems to do everything from update product listings to track inventory, sales, shipping performance, and customer returns.

It's one-stop shopping for brands, allowing them to keep sales and fulfillment under one roof, literally and figuratively. For Walmart.com sellers, being able to offer free and easy store returns—90% of Americans live within 15 minutes of a Walmart store—can also increase sales by eliminating concerns about return costs and hassles. In addition, removing Walmart and Amazon fulfillment from 3PL or in-house team responsibilities lets those providers focus on optimizing fulfillment in other retail channels.

One of the biggest advantages is that brands using these services will probably reduce their shipping spend. "Where Amazon has the win is in UPS package rates," notes 3PL consultant and researcher Evan Armstrong, president of Armstrong & Associates. "It's hard for 3PLs to replicate the incentives provided through Amazon."

For their part, Walmart and Amazon can better control the customer experience by bringing seller inventory in-house. For example, fulfilling vendor product orders lets the mammoth retailers standardize packaging and manage customer communications. Most importantly, full visibility into vendor inventory and controlling parcel carrier selection provides confidence that the retailers can meet delivery time promises.

"Even if Walmart breaks even, the fact that they are able to comfortably have a two-day delivery window network nationwide and offer that to

customers will be worth more than the storage space revenue," says George Hatch, director of marketplaces at e-commerce accelerator Pattern. Pattern contributed to building out WFS by participating in its beta release.

DECIDING IF IT'S A GOOD FIT

Which sellers will benefit most from the new WFS? Those that aren't selling their inventory directly to Walmart already. "Where it's valuable is with items that aren't available in stores," Hatch says. "They can show up to a Walmart buyer with two-day badging on Walmart.com, and that availability allows brands to compete against Walmart-owned inventory."

His company documented the value through A/B testing of products from a vitamin and supplement company. After Pattern converted some of the inventory to WFS, the brand saw a 225% year-over-year sales increase on Walmart.com.

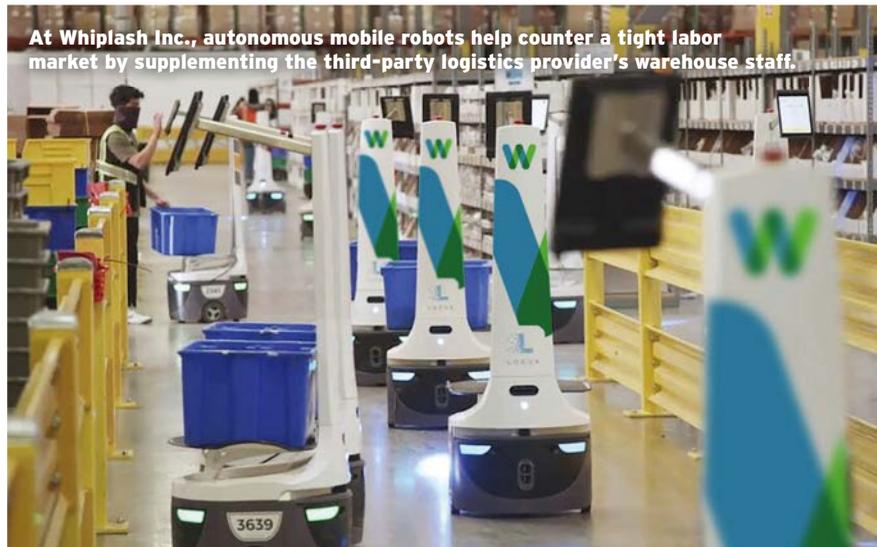
Another reason to use WFS is that second-party sellers that buy products from manufacturers, then resell them on retail platforms, probably offer those products on Walmart.com already. "They might not be giving the brand experience that you want your consumers to have," Hatch cautions. "You need to be there and own that." In addition, inventory within WFS qualifies for free shipping to Walmart+ members and for orders greater than \$35 for non-members.

At the same time, it might not be a good fit for strong or premium brands that want to control their image and customer experience. "It's pretty hard not to sell on Amazon or Walmart but for fulfillment, you have to ask, 'How important is maintaining brand image?'" Armstrong says.

Walmart's claim that WFS is "built with sellers, for sellers" rings true, Hatch says. "We love the relationship we have with Walmart and appreciate the support they've given us."

"IN THE PAST, IF YOU HAD 10 WORKERS, YOU MIGHT ALLOCATE FOUR TO MOVING INVENTORY AND SIX TO PICKING EACHES. WITH ROBOTS, YOU CAN BRING ALL 10 PEOPLE TO PICKING."

**— RAJ PATEL, SENIOR DIRECTOR,
3PL GLOBAL INDUSTRY STRATEGY, BLUE YONDER**



At Whiplash Inc., autonomous mobile robots help counter a tight labor market by supplementing the third-party logistics provider's warehouse staff.

Martin, vice president of engineering for Saddle Creek.

For example, when the 3PL piloted goods-to-person autonomous mobile robots (AMR), productivity improved two to three times over traditional order picking without adding staff. The company has since expanded the technology to several facilities.

"Goods-to-person robotics that drives productivity and labor savings also allows for more high-density storage so we can hold more products in existing facilities," Martin says.

AMRs are also helping 3PL Whiplash, which was recently acquired by Ryder, counter a tight labor market by supplementing its warehouse staff. "This helps us support areas where we might not be able to hire enough labor," says Brian Weinstein, senior vice president of business development.

Both Weinstein and Martin say that using robotics has contributed to a happier workforce, which helps with

retention. "Our associates come to work happier because robotics makes their lives easier," says Martin.

Raj Patel, senior director, 3PL global industry strategy, at supply chain platform provider Blue Yonder notes that he sees more and more 3PLs piloting robotics in part because of the labor shortage. Using robots instead of people to move products through the warehouse lets logistics providers assign staff to tasks with a greater degree of difficulty.

"In the past, if you had 10 workers, you might allocate four to moving inventory and six to picking eaches," Patel says. "With robots, you can bring all 10 people to picking."

It makes sense because "60% of warehouse cost is in pure travel time—from receiving to putting away, packing, and shipping," says 3PL consultant and researcher Evan Armstrong, president of Armstrong & Associates. "Using robots to travel instead of having people roam the warehouse offers a definite return on investment."

Saddle Creek is also in the pilot stages with robotic picking arms, particularly for kitting. "We've seen nice improvements in what that robotic arm can pick up," Martin says. "In the past, it was difficult to pick up small items or certain packaging. With artificial intelligence, a robotic arm can better learn how to pick up different things, almost like a child learns how to pick something up."

INNOVATING WITH DATA ANALYSIS

Companies are also putting increased emphasis on data collection and analysis. One of them is consolidator

"WE HAVE TO WORK TOGETHER AS ONE, UNDERSTANDING OUR CLIENTS' FORECASTING WHILE KNOWING THAT THREE MONTHS FROM NOW IT PROBABLY WON'T BE ACCURATE, WE HAVE TO STAY OUT IN FRONT OF ROLLING FORECASTS AND BE PREPARED TO SCALE AND SHIFT AT ANY TIME."

**— BRIAN WEINSTEIN, SENIOR VICE PRESIDENT OF
BUSINESS DEVELOPMENT, WHIPLASH**



Consolidator 3PL RJW Logistics Group uses extensive data analysis to help its clients—product manufacturers or suppliers—make real-time inventory decisions.

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When pilot tests of autonomous mobile robots at Saddle Creek Logistics Services yielded productivity improvements, the third-party logistics provider expanded the goods-to-person technology to several facilities.



"WE COLLECT EVERY OUNCE OF DATA THAT WE CAN IN OUR NETWORK, WHETHER IT'S INBOUND OR OUTBOUND, AND GIVE IT TO MANUFACTURERS FOR FORECASTING BECAUSE IT HELPS SHOW HOW MUCH INVENTORY THEY NEED IN OUR BUILDINGS."

**—KEVIN WILLIAMSON, CEO,
RJW LOGISTICS GROUP**

3PL RJW Logistics Group, which uses optimization tools to build truckload quantities of food and beverage, over-the-counter, and health and beauty products for middle-mile delivery to supermarkets and retailers. Data analysis helps its clients—product manufacturers or suppliers—make real-time inventory decisions.

"We collect every ounce of data that we can in our network, whether it's inbound or outbound, and give it to manufacturers for forecasting because it helps show how much inventory they need in our buildings," says Kevin Williamson, CEO.

The company's proprietary RJW Edge supply chain analytics platform also gives manufacturers visibility into inventory status, product tracking, ordering and billing, and other specifics that improve decision-making.

RJW Logistics Group fills orders from an eight-warehouse network located in greater Chicagoland. "Instead of housing multiple client inventories in multiple regions and nodes, we've found that the most successful approach is for manufacturers to hold inventory in one building, replenish that, and allow us to fill all orders throughout the country from centrally located Chicago," says Williamson.

This centralized network also helps

the network maintain a turnover rate of less than 5% for its full-time staff by offering employees more growth opportunities. Noting that focusing on company culture also contributes to retention, Williamson adds, "We can open a new warehouse here and give our current employees new opportunities."

E-commerce 3PLs are also increasingly using a different type of warehouse network—micro-fulfillment centers. Moving more inventory to these smaller fulfillment warehouses helps companies reduce transportation costs and decrease delivery time by placing inventory closer to customers.

"3PLs are saying, 'We don't need to build 1.5-million-square-foot facilities,'" says Patel. "We can build a final-mile delivery center instead."

INNOVATING THROUGH TRANSPORTATION

Busy 3PLs also work to avoid shipping bottlenecks by innovating around transportation. Whiplash, for example, is exploring partnering with regional parcel carriers to offset volume issues with UPS and FedEx.

"The major providers are overwhelmed," says Weinstein. "Their infrastructure is behind where it needs to be.

"But in fairness to them, if e-commerce is four to five years ahead

of where it was supposed to be (before the pandemic), they have not had time to scale their infrastructure," Weinstein says. He adds that while regional carriers generally usually have a large footprint, they serve their specific regions well.

Saddle Creek leverages technology to help address parcel shipping challenges. "We use parcel analytics to give clients and parcel providers better visibility into order volume and help drive efficiencies," says Martin. "That's especially helpful when volume surges."

When carriers face challenges in specific regions, his company can divert inventory to locations where transportation providers have more capacity.

That kind of collaboration is key. "We have to work together as one, understanding our clients' forecasting while knowing that three months from now it probably won't be accurate," says Weinstein. "We have to stay out in front of rolling forecasts and be prepared to scale and shift at any time."

While innovating is a new constant for many, Martin advises caution when considering new options. "Technology is great, but you need to consider it from a strategic, thoughtful perspective," he says. "It's about finding the right solution and making sure it's a good strategic fit for your operation and client." ■



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Transportation management has become increasingly complex and challenging. To help you cope, *Inbound Logistics* asked the experts to share their brightest advice.



KEYS TO TRANSPORTATION MANAGEMENT IN UNCERTAIN TIMES

In the wake of the pandemic, supply chains everywhere must navigate shipping delays, labor shortages, and production shifts. Transportation management has become particularly challenging, but there are steps manufacturers, distributors, and retailers can take to reduce costs, mitigate risks, and keep products moving.

Alleviate carrier pain points. “Shipper or receiver of choice” cannot be merely a buzzword. To ensure capacity, shippers and receivers must understand what makes for a positive driver experience at their facilities and adjust processes and amenities accordingly. Fast check-ins, reduced paperwork, and contactless digital payments keep drivers moving and decrease waste. Efficient drop trailer management and yard workflows reduce unnecessary bottlenecks. Even simple tweaks, like making sure staff members treat drivers with respect and providing clean and accessible restrooms, can help shippers retain carriers and avoid tender rejections.

Utilize bid management technology. To protect against volatility, shippers often run “mini bids” with shortened contract cycles. This strategy works, but may require significant time and effort. Deploying smart bidding technology to accelerate the RFP process can help shippers avoid too much resource drain. Tools that aggregate historical data and provide market intelligence can also enable faster decision-making and better purchasing.

Integrate first, middle, and last mile. When possible, hiring a single-source logistics partner to take shipments from manufacturer to warehouse to end customer can create numerous efficiencies. This holistic, integrated approach allows for better accountability and control, plus end-to-end visibility that shippers cannot get from working with disparate providers.

Think beyond the linehaul rate. When hosting procurement events and evaluating transportation partners, the linehaul rate



is not the only factor to consider. Shippers must look at the total value package offered and examine the cost of unplanned charges due to service failures. Aligning with service-oriented partners that have strong relationships with receivers and programs to support shipper and receiver of choice initiatives can reduce total transportation costs in the long run.

Reward key partners. Shippers should measure key performance indicators (KPIs) like primary tender acceptance, spot inflation, and on-time delivery to identify top carriers per lane. Offering exclusive, pre-bid opportunities to best-performing incumbents or even higher rates on well-managed lanes can incentivize those key partners to go above and beyond when markets tighten.

Diversify truckload and last-mile providers. As shippers shift distribution networks, they must build out reliable carrier networks to handle new shipping patterns. It is important to select the right mix of large asset-based providers, regional or niche providers, and brokerages with access to scalable capacity. For last-mile shipments, many retailers add regional, local, and crowd-sourced carriers to their traditional mix of providers to ensure capacity, reduce costs, and limit delays.

—Rick Tomcho, President, Capstone Logistics & Member, Customized Logistics & Delivery Association



6 WAYS 3PLs CAN SAVE BUSINESSES IN 2022

Finally, 2021 is behind us. Yet many supply chain problems persist and businesses around the country are still trying to plug holes in their logistics networks with duct tape and glue. The vicious cycle of delays and shortages are likely making you wonder how you'll get through this year unscathed.

Here are six ways that third-party logistics (3PL) providers can help you keep a closer eye on your business and better leverage existing relationships.

1. Identify opportunities with carriers. Well-established 3PLs have insider information about when windows of opportunity open throughout all transportation modes. They know what carriers want, including the types of volumes and cargo they want to carry, what concessions they're willing to make, and how to gain "preferred shipper" status.

2. Longstanding relationships unlock doors. Many businesses are blocked from working with certain carriers simply because they lack established relationships that open doors. In turn, an incomplete freight request for quote (RFQ) can prevent carriers from even providing your business with a quote. An experienced 3PL typically has longstanding relationships with many carriers that can help you get a foot in the door. They can also scrutinize RFQ responses and correct inaccuracies in your data so carriers will respond and carry your shipments.

3. Eagle eyes catch unnecessary charges. While some rate hikes and surcharges are due to increasing costs and persistent shortages, carriers sometimes tack on extra costs to make up for past oversights. It often takes an eagle-eyed professional to identify discrepancies and negotiate corrections. This is where an experienced 3PL shines. In fact, an invoice audit typically saves anywhere from 5 to 50%.

4. Get preferential treatment. The surge in demand for product is here to stay and shortages are likely to continue into the near future. By working with a well-connected 3PL, shippers can increase the odds of freight getting picked up and delivered faster—rather than sitting in limbo at a terminal or on a loading dock for hours or days.

5. Access to real-time visibility. Having real-time visibility through a transportation management system (TMS) can be a game-changer. Many 3PLs use TMS portals to track which shipments are running on time, which have arrived damaged or short, and which had significant status changes. This can help you monitor your transportation operations while there's still time to take action and get your shipments back on track.

6. Purchase and manage buffer inventory. The merits of keeping more safety stock comes into question with transportation and labor shortages and COVID-related factory and port closures. Working with full-service 3PLs that have distribution centers and manage your extra inventory can be a great alternative to housing buffer inventory in house. Some 3PLs are willing to purchase and fully manage your goods while they're in transit—which lets you put off payments until you need them and reduce your supply chain risk.

—Andy Dyer, President, Transportation Management, AFS Logistics



FIVE THINGS WE LEARNED IN 2021

"Supply chain disruption" was a defining theme of 2021—from port congestion, to a ship getting stuck in the Suez Canal, the year was rife with challenges. How can shippers better shore up their supply chains during these volatile times? Here are 5 tips we learned in 2021 that may help you this year.

1 Shift your thinking from lowest cost to highest value. Whether it's getting slots on vessels, finding trucks, or securing warehouse space, capacity is in high demand across the board. Think of managing transportation like an auction—available capacity often goes to the highest bidder. Be prepared to spend when you need to, and don't be afraid to pay more to guarantee service. Your competitive advantage in this environment is knowing your freight will move when you need it to.

2 Broaden and connect your vendor network. The pandemic exposed just how fragile the supply chain ecosystem can be. Improve your resiliency by assessing alternative routings and diversifying your vendor base for all links in your supply chain. A larger partner network means a larger selection of solutions for your company and your customers. Also connect those vendors in a single eco-system control tower, and if that's not possible immediately, bring vendors together regularly to maintain alignment on your goals and challenges as they support you as a team, not a collection of independent contractors.

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DRILL INTO SUPPLY CHAIN DATA WITH NETWORK OPTIMIZATION

When the annals of history reflect back on the pandemic and its seismic impact across the world, the gridlock thrust on global supply chain logistics will likely be more than a footnote. Volatility is everywhere with port logjams, capacity constraints, truck driver shortages, component back orders and production delays. Times like these, however, can illuminate opportunities to change and improve the way products move to and from your organization. A network optimization study is a prime opportunity to increase operational efficiencies.

Network optimization studies provide visibility into your entire supply chain and deliver insights you can use to improve operations and reduce costs. For many shippers, data is often embedded across multiple spreadsheets, which makes it challenging to get a clear picture of supply chain hits and misses. This lack of unified visibility makes it difficult to clearly understand if product mapping is poor, standardization is lacking, or if various regions have different shipping priorities and protocols.

These statistics put a finer point on the need for visibility through network optimization. According to the Logistics Bureau, 69% of organizations report they do not have full visibility into their supply chains. Furthermore, businesses with optimal supply chains have 15% lower supply chain costs and less than 50% of inventory holdings.

How a Network Optimization Study Works

The first step in a network optimization study is harnessing all of your organization's relevant data. It might sound like a daunting task, but the key to streamlining the process is the creation of a "digital twin." The digital twin consolidates all relevant supply chain data and provides a granular view of critical data elements—including volume, origins, locations SKUs, materials, product weight, and transportation



costs. Through this process, you see your lanes and flows in real time and understand your true total cost to serve. You can also weigh potential tradeoffs and separate opportunities that will improve your supply chain network from those that won't.

The next critical steps in network optimization modeling use sophisticated business intelligence (BI) tools. This takes your data from being visible to actionable, leveraging easily consumable, visual digital representations of your targets for improvement. Through these visualization tools, you can select different scenarios, view various strategies and calculate potential outcomes that can improve your supply chain operations and drive down costs.

Is Your Organization Ready?

As with most things, timing is everything. Supply chain leaders need to recognize opportunities for improving their shipping operations. Leadership needs to be willing to make changes based on the information revealed through the study.

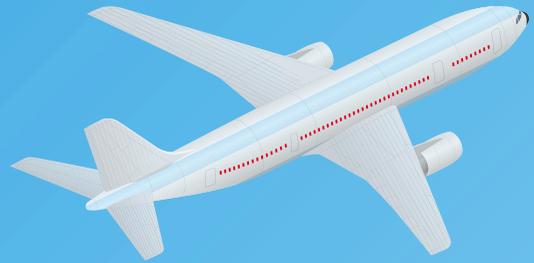
The team involved also matters—you need a mix of internal subject matter experts who understand sourcing, production and operational flow as well as non-logistics stakeholders from other areas of your organization to get the most accurate and actionable picture possible. A network optimization study is the perfect way to improve operations, in pandemic times and beyond.

— Robert Boyle, PMP, Vice President,
North America Managed Logistics Services,
Odyssey Logistics & Technology Corporation

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3 Increase inventory levels and add storage space in multiple markets. The pandemic accelerated a shift from just-in-time to just-in-case—highlighting how important it is to build extra inventory into your plans. Ensure you have contingency goods available to meet unexpected demand spikes or unexpected delays.

Additionally, there is an e-commerce-fueled shift to position inventory closer to major population centers. Having product in multiple locations brings agility and flexibility, helping you get those goods to your end customers faster. This is essentially a requirement when customers expect next-day delivery.

4 Revisit your strategy and regularly review it. Now is a great time to review your supply chain strategy. Consider alternatives like cross-docking and transloading in port-adjacent warehouses. Use forecasts to help guide decision-making and develop plans to mitigate disruptions and delays. Make sure all stakeholders, including your vendors, understand your strategy and the steps needed to implement it—this is a team effort!

Also stay informed. Sit down on a regular cadence with the team. Look at trends in capacity, congestion, and blank sailings, and adjust as needed.

5 Consider working with asset-based partners. Many larger retailers bought their own equipment and chartered their own ships to get around delays. Partnering with an asset-based 3PL provider can be advantageous for shippers who don't have the resources to manage their own space and equipment. Knowing your partner has chassis, trucks, and warehouses gives you extra security when demand for capacity is high.

—Michael Van Hagen,

Sr. Vice President, Supply Chain
World Distribution Services



TRANSPORTATION MANAGEMENT RELIES ON BUILDING A STRONG TEAM

These are the best of times; these are the worst of times. If you are involved in any way in today's global supply chain, it's indeed easy to feel both emotions simultaneously. Regardless of whether you are in extraordinary or ordinary times, one thing remains constant—managing a transportation network is reliant on having a strong foundation at all times.

In football, poor performance on the field often results in the coach calling for a basic skills practice the next day. Today, as an industry, we often need to go back to block and tackle exercises to address operational snags, looking deeply into our operations—right down to the fundamental level—in order to ensure our assets, our relationships, and our team are fully optimized.

MAXIMIZE YOUR ASSETS

During difficult times, fully optimizing managed assets remains the key to success. To do this, various fundamental questions need to be answered: What is the status of the assets? Are they in ready condition? Are the assets located where they need to be? Do we have enough assets to meet the projections, or do we need more?

Business uncertainty is often connected to a lack of properly monitoring operational fundamentals. As such, it is important to review these business basics as part of your regular team meetings. The goal is to reinforce the significance of a strong foundation, which serves as the building blocks for a successful operation.

COLLABORATE WITH BUSINESS PARTNERS

Strong business partnerships are essential for any successful business and this is especially true during tumultuous times. When a business challenge arises, you need to be able to rely on the strength of your relationships, including vendors, suppliers, technicians, and distributors. In effect, your business partners are an extension of your team, so treat key relationships like true partners during your regular business practice so they are there for you during difficult times.

How to attain this type of close partnership? Create a communicative, collaborative relationship that includes regular meetings to learn about their products and services, providing honest feedback and outlining your needs. In fact, this ongoing dialogue not only builds relationships, it also helps improve quality and performance.

By keeping the lines of communication open with business partners, you will be able to call upon their assistance during unforeseen challenges. Leveraging these vital connections can be the difference between making your deadlines and losing a customer.

BUILD KNOWLEDGEABLE, PREPARED TEAMS

When reviewing the fundamentals of any successful operation, you cannot overlook the importance of investing in your team to ensure they are prepared, agile, and knowledgeable enough to weather the storms that will come their way. Providing hands-on training and career growth during traditional workdays not only prepares your team for unexpected volatility, but also builds loyalty and commitment to your business.

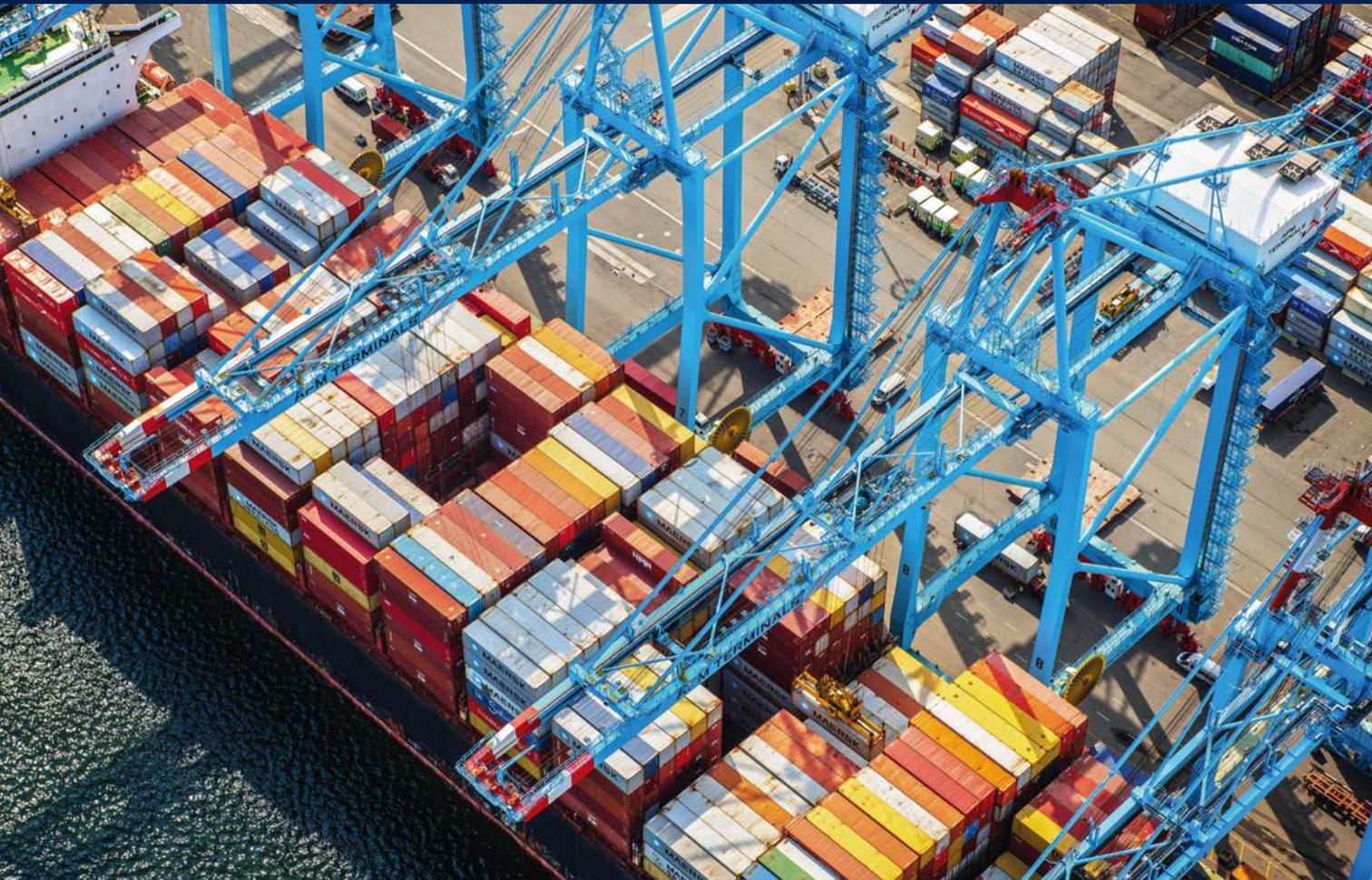
Members of a strong, loyal team feel compelled to stick it out during tough times for the good of the business. In logistics, like football, we only win if we are willing to work together and push past obstacles—as a team.

—Gene Bambach, Director, Business Partner Relations,
Consolidated Chassis Management



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LOCATION TECHNOLOGIES CRITICAL TO SUPPLY CHAIN OPTIMIZATION



Not all supply chain challenges are new, but some have grown in scale and impact over the past 18 months. These include a lack of actionable data and service quality, maintaining profitability while meeting increasingly shorter delivery windows, and the growing need for data privacy, security, and compliance.

Several of these friction points can be linked to technical challenges, including a lack of data analytics and visualization in current tools, limited mapping capabilities, the inability to support service app creation and customization, and data enrichment and privacy issues like security breaches.

Transportation and logistics providers require safe, reliable, and compliant routes, guaranteed on-time shipping and delivery time windows, thorough analysis of driver behavior and safety levels, improved asset utilization with fewer vehicles, drivers, and vehicle maintenance/downtime, and the ability to drive enhanced business growth and customer satisfaction.

Robust, secure, and scalable location platform technologies help address many of these friction points. Highly accurate location data enables critical visibility to make more up-to-date decisions, avoid unnecessary delays, minimize inefficiency, and reduce additional costs. These location solutions empower drivers with enhanced, safer options and a more efficient shift. Transportation and logistics professionals seeking a best-in-class solution should prioritize one that integrates enterprise-grade location data, services, and tools to solve complex logistics problems and uncover new, actionable insights.

Location data is integral to every aspect of logistics, from planning to execution and post-trip analysis. Using location data and technology platforms means fleets can quickly and flexibly generate location solutions and insights to match their unique needs across every stage. These include:

Service creation and customization: Examples include routing application programming interfaces (APIs), traffic information, and truck restriction information that allow fleets to regularly predict reliable Estimated Times of Arrival, which enable them to deliver goods within committed time windows, improving customer satisfaction. Fleets can customize location services by combining their own data with third-party sources and specifying parameters to create custom business logic to meet their unique business needs.

Application software development kits (SDKs): Enable fleets to build tailored mobile solutions for

drivers, empowering them with navigation, job scheduling, workflow management, and more.

Analytics and visualization: Fleets can explore, analyze, and visualize location data, prepare and enrich data with location context, and apply machine learning techniques. Managers can use this to boost safety levels, improve usage-based insurance pricing, or support compliance management.

Location-centric data and data enrichment: Rich, accurate maps provide the freshest data for fleets, as well as multiple cross-industry datasets, including weather, road conditions, and third-party probe data. These platforms enable integration into existing systems and business processes.

Mapping: Private, custom maps using a fleet's own data—probe data, light detection and ranging data, and sensor data—can be used with location services to enable enterprises to solve complex logistics when there are no maps in the public domain.

Data privacy: Comply with government regulations and customer privacy obligations. Solutions can ensure data privacy and compliance, while maximizing the utility of big data at scale. Fleets can instill trust across value chain participants and avoid privacy breaches through anonymization and consent management.

Exchange and monetization: Provides an additional channel for revenue generation through the datasets. Solutions can act as a neutral environment for pooling datasets across multiple industry participants.

Robust and secure location platform technologies that integrate enterprise-grade location data, services, and tools can be used to solve complex logistics problems and uncover new, actionable insights. Dynamic routing based on real-time events allow drivers to minimize delivery times and make more deliveries per shift, maximizing productivity and profitability.

A strong location-based solution allows fleet managers to perform driver performance analysis to better understand driver behavior and get a location-centric context of the route. They can rapidly analyze journeys to determine what is impacting performance and quickly provide insights to take swift action for safety, savings, and compliance.

— Susan Beardslee, Principal Analyst,
ABI Research



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YOU WEAR IT WELL:
**WEARABLE
TECHNOLOGY
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Advances in technology and increasing adoption mean wearables in the warehouse are here to stay. See how logistics providers and customers put these technologies to work to revolutionize their warehouses.

By Amy Roach

Take a walk through a busy distribution center today and you might find workers decked out in futuristic-looking “accessories” such as exoskeleton suits and head-mounted smart glasses, while flashing Spider Man-like wrist and ring scanners and taking directions from an automated voice-control headset. No, they are not extras from a sci-fi or superhero movie set but rather your average warehouse worker, taking advantage of the wide range of wearable technologies that are available today for industrial use.

Wearables are not new to warehouses—the devices and technologies that power them have been in use for years—but they have been increasing in popularity. They also have expanded rapidly in scope and scale, with a number of new offerings hitting the market in recent years.

Though complicated technology powers the devices and systems, the idea behind the functionality of wearables is pretty simple. “These devices have got to do three things: first, direct workers to go and do something. They are powered by a warehouse management system that directs workers to a task, location, or SKU,” says Ashley Hartwell, managing consultant of UK-based Supply Chain Consulting Group.

“Second, wearables have to be able to confirm what that ‘something’ is either by scanning it, by voicing it, or by seeing what it is,” she adds. “Third, these devices have to be able to identify what that something is.”

There is some debate over just how much penetration has occurred and is forthcoming for wearables in the logistics and supply chain space. Mobile and wearable technologies are in between the Takeoff and Maturity stages on the S-Curve of Innovation, according to

Hector Sunol, co-founder and CEO of Cyzerg Warehouse Technology in Miami.

“This position indicates that the technologies have overcome a significant obstacle and have been adopted by the early majority of adopters,” he writes in *Ready for Mobility Solutions & Wearable Warehouse Technology?* “Additionally, this position suggests that they are soon to be adopted by the general public, which is an indication that the risks

associated with implementing them are subsiding.”

“There’s a huge opportunity for many more companies to move toward using wearables in the warehouse,” Hartwell adds.

As far as current use goes, 30% to 45% of respondents to the Material Handling Industry’s *2021 MHI Annual Industry Report*, conducted with Deloitte, are investing in wearable and mobile technologies for the warehouse, while 25% are currently using such technologies and another 36% plan to use them within the next five years.

More than 90% of respondents to a 2019 study by industrial technology provider Zebra expected to adopt wearable mobile computers by 2028, while 44% of respondents were already using wearable computers.

And, a Technavio forecast released in July 2020 suggests the global industrial wearable devices market will grow by \$3.4 billion during 2020-2024.



A warehouse worker wearing Verve Motion's exosuit.

PHOTO COURTESY OF ADUSA DISTRIBUTION



Rufus Labs outfits supply chain workforces with rugged wearable barcode scanners, mobile devices, labor analytics software, and support services in one monthly subscription.

Regardless of the exact numbers, the interest is there and business is strong for manufacturers of wearable devices. Zebra, a dominant industry player, reported a strong third quarter in 2021, posting net sales of \$1.44 billion, a year-over-year increase of 26.9%.

Wearables provider Kinetic saw four times the deployment of its wearable device in 2021, according to Haytham Elhawary, its founder and CEO. “In 2020, companies jumped on the opportunity to provide their workforce with technology that makes them safer and more productive,” he says.

WHY WEARABLES?

The appeal of wearables goes beyond the cool factor. Wearable devices—which range from voice headsets used for picking to wrist, ring, glove, and head-mounted bar-code scanners, to smart glasses equipped with scanners, to wearable safety devices aimed at improving ergonomics—are known for several key benefits including improved worker safety, increased productivity, and the cost reductions stemming from these improvements.

Wearables help to improve three important aspects of a warehouse: speed, safety, and accuracy. “Having access to the right data without walking up to the workstation time and again speeds warehouse processes and operations,”

says Sunol. “By keeping the hands as free as possible, wearable devices allow clerks to focus more on the physical process of material handling.

“Devices with sensors can warn workers about potential dangers in certain activities and locations, and even suggest preventive measures,” he adds. “And, the level of sophistication that these devices provide reduces error rates associated with larger barcode scanners.

“The more advanced the technology you choose, the more accuracy you are equipped with,” Sunol notes.

That speed is a huge benefit. “Normally, you would budget around three seconds to scan something on a normal handheld device,” says Hartwell. “With a wearable, that might be as low as one second. That time savings can add up when it is repeated 200 times an hour.”

The size of wearable devices is also a good selling point. As opposed to heavy and bulky handheld scanners that can weigh a few pounds each, the wearable barcode scanners from Rufus Labs, for instance, weigh just eight ounces, according to Gabe Grifoni, CEO of Rufus Labs.

“Handheld devices can be heavy, and wearing them all day can lead to arm strain,” he says. “Wearables offer a huge improvement in how warehouse workers feel about their equipment; it makes their job easier and better.”

There are other benefits as well. “Wearable technologies make it easier to work with precision in the fast-paced logistics environment,” notes Sandeep Sakharkar, chief information officer for global 3PL GXO Logistics, based in Greenwich, Connecticut. “The advancements in these technologies are enabling greater precision in inventory management while improving safety.

“And, it’s a huge benefit for e-commerce order fulfillment, which continues to grow as more people buy items online,” he adds.

IMPROVING EFFICIENCY, REDUCING ERRORS

Over seven weeks starting in October 2020 at their distribution center in Everett, Washington, GXO ran a pilot to implement a wearables solution from ProGlove Inc.

Employees wore ProGlove smart-glass headsets during inventory picking. The ProGlove system that GXO uses pairs wearable barcode scanners, worn on the back of the hand, with smart glasses that use a software interface to deliver picking information right into the worker’s field of vision.

“The benefits of ProGlove improve the health and safety of our employees thanks to its ergonomic design, while improving efficiency by 10% and reducing errors by approximately 75% during inventory picking,” Sakharkar explains, detailing the results of the pilot.

In September 2021, GXO expanded its partnership with ProGlove to Europe, where it deployed wearable scanners at locations across the UK, France, Italy, Spain, and the Netherlands.

Sakharkar is also a big believer in wearables’ benefits for an industrial workforce. “Our employees enjoy working with technology that enhances their overall experience,” he says. “Also, employees can excel faster, which increases their overall job satisfaction and opportunities for advancement.

And, the technology has also helped GXO “reduce training time for picking by approximately 80%, which is critical during peak,” he adds.

As with all technologies, wearables have their share of detractors as well as companies who might be interested in the technology but not quite ready to make the switch.

For starters, the cost of wearable hardware may be prohibitive for some smaller companies—especially considering the wide range of affordable options in the traditional handheld realm.

“There are a lot of cheap alternatives in the handheld space,” notes Hartwell. “If you want to go down a cheap handheld scanner route, you can easily implement an Android phone or barcode scanning mount. It won’t be a great experience, but it will be an inexpensive way to get everyone on radio frequency.

“On the other hand, with wearables, you’re paying for something that’s built for logistics,” she adds.

ADDRESSING THE CHALLENGES

Other challenges associated with wearables include changing worker behavior, practical considerations about whether the equipment is ideal in particular settings, and any software or technology concerns with implementation.

“Not all legacy warehouse management systems instantly work out of the box on a handheld wearable,” Hartwell explains. “In some cases, companies need to put in some sort of custom development to interface.”

Another challenge is finding relevancy amid other large and pressing supply chain challenges in the current climate. “With the context of the macro environment right now, supply chains are a mess,” notes Elhawary of Kinetic. “There are so many things going on in the minds of operations leaders that getting them to focus on wearables doesn’t always work.”

What works for most companies when making the choice to embrace wearables in their warehouses is finding success for their specific goals. Here are a few examples of companies that have done just that and found that wearables are the right fit for their needs.



SEEING THE LIGHT IN LAST-MILE OPERATIONS

To improve efficiency at one of its letter and parcel-sorting centers, worldwide shipping provider DHL’s DHL Express Belgium turned to a wearable solution from Belgium- and New York-based Iristick, which manufactures a line of rugged, industrial-grade, head-mounted smart glasses. By combining hands-free barcode scanning and voice commands, Iristick enables effective sorting operations as well as pick-by-vision capabilities.

“We offer what is called second-generation smart glasses, which means that our smart glasses are connected to a smartphone—that’s where our processing power comes from,” explains Johan DeGeyter, Iristick CEO. “The glasses are equipped with two cameras—one central camera and one optical zoom camera on the side. The smartphone uses the camera feed to detect barcodes, which are then processed or fed into an underlying computer system.”

In DHL Express’ case, Iristick was deployed for workers who man the conveyor belts carrying mail from the postal service as well as small parcels being sorted for routing to last-mile delivery. The conveyor works at high speed and DHL Express wanted to boost workers’ ability to sort quickly and efficiently. By using Iristick’s smart glasses, “workers can just look at the box and the glasses scan the barcode,” DeGeyter explains. Instructions on what to do with the package then pop up in a small screen at the top corner of the glasses. “By the time a worker physically holds the package, all the information is already there,” he adds.

“We are pleased with the Iristick glasses: the speed and accuracy of barcode reading and decoding is optimal, operators adopt them quickly and hardly any training is required,” says Peter Swillen, OPS systems manager for DHL. “Hands-free scanning speeds shipment handling, and the glasses make in-depth address knowledge obsolete. It allows for flexibility in sort planning as the glasses constantly retrieve and display the most recent and optimal sort position.”

The two companies worked together closely to ensure the glasses were functioning ideally for the DHL environment. “Iristick has been supportive during several test iterations, improving the reading speed and accuracy of the glasses and developing accompanying software to facilitate the testing,” Swillen explains. “While we first looked at assisted parcel sorting, we realized through the testing that ergonomically, the glasses are best suited for our letter sort.”

As a next step, DHL is adapting its own data retrieval software in order to work seamlessly with the Iristick glasses. “Once that is ready, we can start rolling out in Belgium,” Swillen notes. “Additional countries have also already shown interest.”

RUFUS LABS AND FISHER SCIENTIFIC: LOVE AT FIRST TRY

It's not often that a warehouse manager and operations department will admit to "falling in love" with a potential technology. But that is exactly what happened when the team at Thermo Fisher Scientific's UK-based Micro Biology Division (MBD) tested the wearable technology from Los Angeles-based Rufus Labs.

"We trialed four devices that met our initial user requirement specifications," says Craig McCafferty, MBD's warehouse manager. "After extensive trials of some market-leading devices and Rufus, our operatives fell in love with the Rufus platform."

"Our WorkHero analytics platform is a subscription-based model, and we provide the wearable devices and scanning technology that customers can use to replace their legacy handheld systems," says Gabe Grifoni, CEO of Rufus Labs.

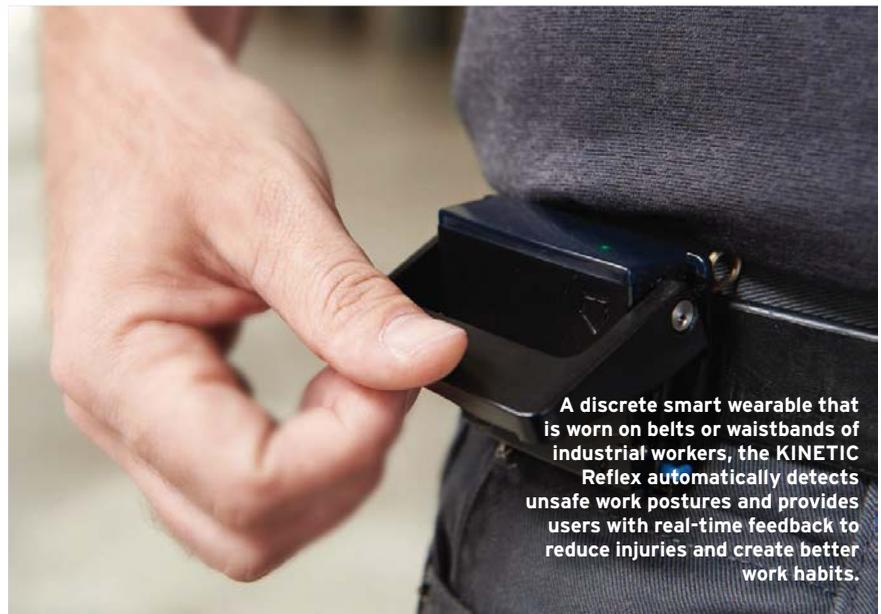
Rufus Labs wearables include barcode scanner cuffs, gloves, and rings. The product suite boasts easy interoperability with any Android- or web-based system, and the data and metrics from the wearables load directly into a comprehensive dashboard.

Today, the Rufus platform is deployed at two Fisher Scientific sites in Europe, with rollouts planned at three additional sites in Europe and multiple facilities in the United States.

Within a few weeks of starting the wearables program, "We started seeing the capture of non-scan, usually non-value-added tasks—as well as scanned tasks—being tracked in Rufus," McCafferty says.

"This gave us unbelievable insight into what was happening in our warehouse and allowed us to help team members increase performance by analyzing their scans, steps, and hours on the task," he adds.

As for specific results, McCafferty notes: "We have seen up to a 5% increase in productivity on scanned tasks, plus the elimination of 520 management hours per site by eliminating low-level



A discrete smart wearable that is worn on belts or waistbands of industrial workers, the KINETIC Reflex automatically detects unsafe work postures and provides users with real-time feedback to reduce injuries and create better work habits.

management tasks, and 40% of a full-time equivalent in the removal of non-value-added tasks at the Perth site."

It's a far cry from what the company was previously using. "We have come a long way from brick-on-a-stick solutions, which are often cumbersome and not great ergonomically, and picking with paper and pen," McCafferty says.

KINETIC AND FRITO-LAY: CHIPPING AWAY AT INJURIES

As warehouse workers know all too well, sprains and strains are a common occurrence at distribution centers. Helping to reduce those injuries was the focus of snack maker Frito-Lay's decision to partner with Kinetic on a wearable technology deployment to address the ergonomic challenges its warehouse employees face.

Kinetic's wearable device is equipped with sensors to detect high-risk movements like improper bending or twisting. It vibrates to give workers a real-time alert and allow them to self-correct their movements.

As part of Frito-Lay's (and parent company PepsiCo's) goal to create an injury-free work environment, the company introduced the Kinetic Reflex wearable device to thousands of workers in 34 manufacturing and distribution centers located throughout North America, in summer 2020.

"At the beginning, the workers were doing 100 high-risk postures a day, and by the end of the program, they were

doing 33," notes CEO Elhawary. "So, they reduced that by 70%."

In the first two quarters of deployment, Frito-Lay reports that data collected from nine manufacturing sites shows a 19% reduction in strain/sprain injuries among all employees, and a reduction from historically 100% of strain/sprain injuries requiring modified days (when workers can't do their jobs) to only 33%.

Additionally, data from the device provided custom insights into how employees were moving while performing their jobs, which led to new opportunities to improve workplace ergonomics, ranging from training and coaching to workstation and work process redesigns.

EMPLOYEES ARE ALL IN

High buy-in from employees has been key to the program's success. "Wearables started off as a way for us to solve for the traditional ergonomic risks that we see, which drive some of our workers' comp costs," says Cormac Gilligan, vice president of global environment, health & safety at PepsiCo. "But it has become an employee engagement exercise because they like and want to wear the device."

Next up, Frito-Lay is expanding the program into a two-year deployment at multiple manufacturing locations and PepsiCo is debuting the wearable program to the beverage division, with thousands of devices to be deployed in an ambitious four-year program. ■



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WELL SUITED

From the lab to the warehouse, exosuits gain ground in the quest for warehouse safety.

Jokingly known as “Iron Man” body armour, exoskeletons do seem almost superhuman in their ability to protect workers from repetitive injuries like sprains and strains. These wearable devices, most common in industrial and warehouse settings, are engineered to reduce muscle strain and make lifting less stressful on the body, resulting in fewer workplace injuries. While exoskeletons are still fairly new on the market, one manufacturer, SuitX, believes they are destined for broad use—even beyond warehouses. “There is no doubt in my mind that these devices will eventually be sold at hardware stores. As the prices come down, you’ll be able to simply buy them at Home Depot,” SuitX founder, Dr. Homayoon Kazerooni, told the BBC in April.

SuitX, which began in the Robotics and Human Engineering Lab at the University of California, Berkeley, specializes in the research and development of occupational and medical exoskeletons, and was just acquired by Ottobock, a leading global innovator for prosthetics, orthotics, and exoskeletons, based in Austin, Texas. The SuitX line includes three products, one each for shoulders, back, and legs (they can be worn separately or combined), all designed to reduce strain.

Also spun out of a university lab—in this case, Harvard—Cambridge, Massachusetts-based Verve Motion offers another type of exoskeleton, aimed at incorporating lift-assist technology in a wearable format. Verve Motion’s product is worn like a backpack, with additional components that wrap around the thighs. The suit applies assistance in parallel with the user’s muscles and responds to their movement in milliseconds. “With this combination, everything that the user lifts becomes about 40% lighter,” explains Ignacio Galiana, CEO of Verve Motion. “So think about a worker in logistics, lifting tens of thousands of pounds every day, we can reduce about 10,000 pounds off their backs every day.”

The suit also tracks and measures how wearers are moving, which allows the company to then integrate more ergonomic and safety initiatives to improve overall safety in the warehouse.



The Paexo Back exoskeleton from Ottobock reduces the strain on the back when lifting heavy objects.

PHOTO COURTESY OF OTTOBOCK

After completing a recent pilot program which proved that Verve’s suits enhance the safety and effectiveness of its grocery distribution center associates, Verve customer ADUSA Supply Chain—a family of companies that support the omnichannel grocery brands of Ahold Delhaize USA, which include Food Lion, Giant Food, The GIANT Company, Hannaford and Stop & Shop—is planning to expand its use of exosuits to 250 workers in its facilities. During the pilot, feedback from wearers showed a vast majority reporting reduced fatigue, soreness and better posture, according to Chris Lewis, President, ADUSA Supply Chain.

“We’re proud to pilot solutions like this one that enable us and our partners to care for the workforce in distribution centers by helping associates reduce fatigue, work more effectively and reduce the likelihood of injuries,” Lewis notes.

It may be too soon to say how widespread the adoption of exoskeletons is currently, but Ottobock expects that the market for exoskeletons in the professional environment will multiply to several hundred million USD by 2025. And the current need is easy to see: More than 1 million back injuries occur annually in U.S. workspaces, according to the Department of Labor, which leads to more than 260 million workdays lost due to back injury.

And the resulting benefit for workers is already clear: “Workers using our exosuits feel much, much better at the end of the day,” Galiana says.

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A stack of several cardboard boxes is positioned in front of a bright yellow door. The boxes are of various sizes and are stacked on a grey tiled floor. A brown doormat is partially visible in the foreground. The scene is brightly lit, suggesting an indoor or well-lit outdoor setting. The text is overlaid on the upper portion of the image.

KNOCK, KNOCK! SMBs DELIVER THE FINAL MILE

**SMB manufacturers and
retailers are killing it in the
middle and final miles.**

By Conrad Winter



It was only back in 2017 that Undercover Snacks, a New Jersey-based manufacturer, was making its chocolate and quinoa snacks by hand in a single commercial kitchen and delivering them from the back of an SUV.

Today, in an estimated 10,000 to 12,000 stores across the United States and experiencing rapid international growth, the company's commitment and personal approach hasn't changed much.

Not only did that approach help the company survive COVID, but committed relationships with retailers and carriers enabled it to thrive, doubling the number of stores carrying its products in 2021.

Undercover Snacks' journey wasn't without the transportation challenges experienced by other small and mid-sized businesses (SMB), including manufacturers and retailers. For them and others, the secret was a combination of strategies both tried-and-true and technology-based. Like many others in this crunched-capacity market, they tied themselves tightly to their transportation partners.

"We've had to cultivate relationships with a number of major carriers and transportation and logistics companies," says Michael Levy, chairman and co-owner of Undercover Snacks. "For various routes, we have developed a good rapport with some companies we think highly of, but they also face challenges including driver shortages and other bottlenecks impacting performance and dependability."

Consistency and a little bit of compassion have proven to be a winning approach for securing capacity in the current freight market.

"It stems from how you treat drivers and whether you provide them with business throughout the year that keeps them happy during the crazy times," says Manny McElroy, senior vice president of transportation for ITS Logistics, an omnichannel third-party logistics provider based in Sparks, Nevada. "That keeps the drivers in your network and keeps the capacity with you."

Strong carrier relationships proved decisive for Undercover Snacks during the pandemic because it enabled them to

Undercover Snacks, a chocolate quinoa treats SMB, thrived during the pandemic thanks in part to committed relationships with retailers and carriers.



have product available. Retailers who allocate slots on a shelf want to make sure they are filled, particularly after what happened with the run on the center aisle and in grocery stores early in the pandemic.

“Part of our success was that we were able to have products available to step in if other suppliers couldn’t deliver,” Levy explains.

“We’ve forged some nice relationships that we expect to grow significantly with customers who now trust and understand that we have strong manufacturing capabilities as well as the ability to execute on the logistics side,” he adds.

WELL WORN RELATIONSHIPS

For New Jersey-based luxury e-tailer ShopWorn, which receives almost all its merchandise from overseas, relationships with freight forwarders—some stretching back 20 years—were essential. They enabled the flow of “shopworn” designer handbags, watches, jewelry, and accessories—merchandise that has only been worn in the shop and never used—to keep flowing despite the ocean and air capacity crunch.

“Our business is built on relationships, starting with the brand and our consumers as well as with our carriers, whether for small packages or inbound freight,” says Larry Birnbaum, president of ShopWorn.

ShopWorn’s relationship with its customers continues to grow. Sales jumped 67% in 2021—more than double their average annual growth of

“BY PUTTING THE RIGHT SYSTEM IN PLACE, WE CREATED THE ABILITY TO SCALE TO MUCH LARGER VOLUMES EFFICIENTLY, AND TO SERVE WORLD-CLASS RETAILERS AND PARTNERS.”

—MICHAEL LEVY, CHAIRMAN AND CO-OWNER,
UNDERCOVER SNACKS

30%, according to Birnbaum.

ShopWorn also made a seminal technology leap in 2021 from an accounting-based solution to a system that could integrate inventory, sales, and fulfillment management.

“We just outgrew our old system. It couldn’t give us the data that we needed,” says Birnbaum. “Unfortunately, we had to launch the new system in the middle of October, which was the start of the season, but we wouldn’t have been able to do what we’ve done to date without it.”

Undercover Snacks also enhanced its systems significantly during the pandemic. They switched from an accounting platform to Oracle NetSuite, which integrates order fulfillment, financial reporting, quality control, track and trace functionality, and purchasing, receiving, and demand planning management.

“We have real-time visibility into nearly all aspects of our business,” Levy says. “Many companies wait a little longer to invest in this type of technology. While we’re still in the earlier innings, we have big ambitions.

“By putting the right system in place, we created the ability to scale to much larger volumes efficiently, and to serve world-class retailers and partners—from major retailers like Kroger, CVS, and Rite Aid to the foodservice industry to travel and hospitality companies like United Airlines.”

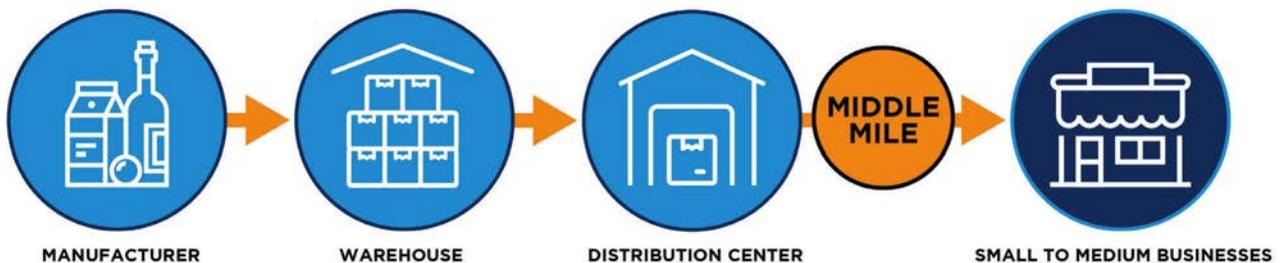
The system upgrade integrates customer management, supply and demand planning, and track and trace functionality—which is crucial in the food industry. Additions include implementing handheld devices used for pick and pack in the warehouse and connectivity with customers and suppliers through EDI.

NAVIGATING THE MIDDLE MILE

Undercover Snacks and ShopWorn’s moves to collect and use more data reflect wider trends among small and mid-sized shippers particularly in the middle mile—that leg of the supply chain between the factory or distribution center and the retailer.

One invaluable byproduct of utilizing consistent carriers is that you can build a good database to drive decisions, according to Christopher Kupillas, vice president of managed logistics at BlueGrace Logistics, a third-party logistics provider based in Los Angeles, California.

WORKING THE MIDDLE MILE



SMBs increasingly focus on improving efficiencies in the middle mile—the part of the supply chain between the factory or distribution center and the retailer.

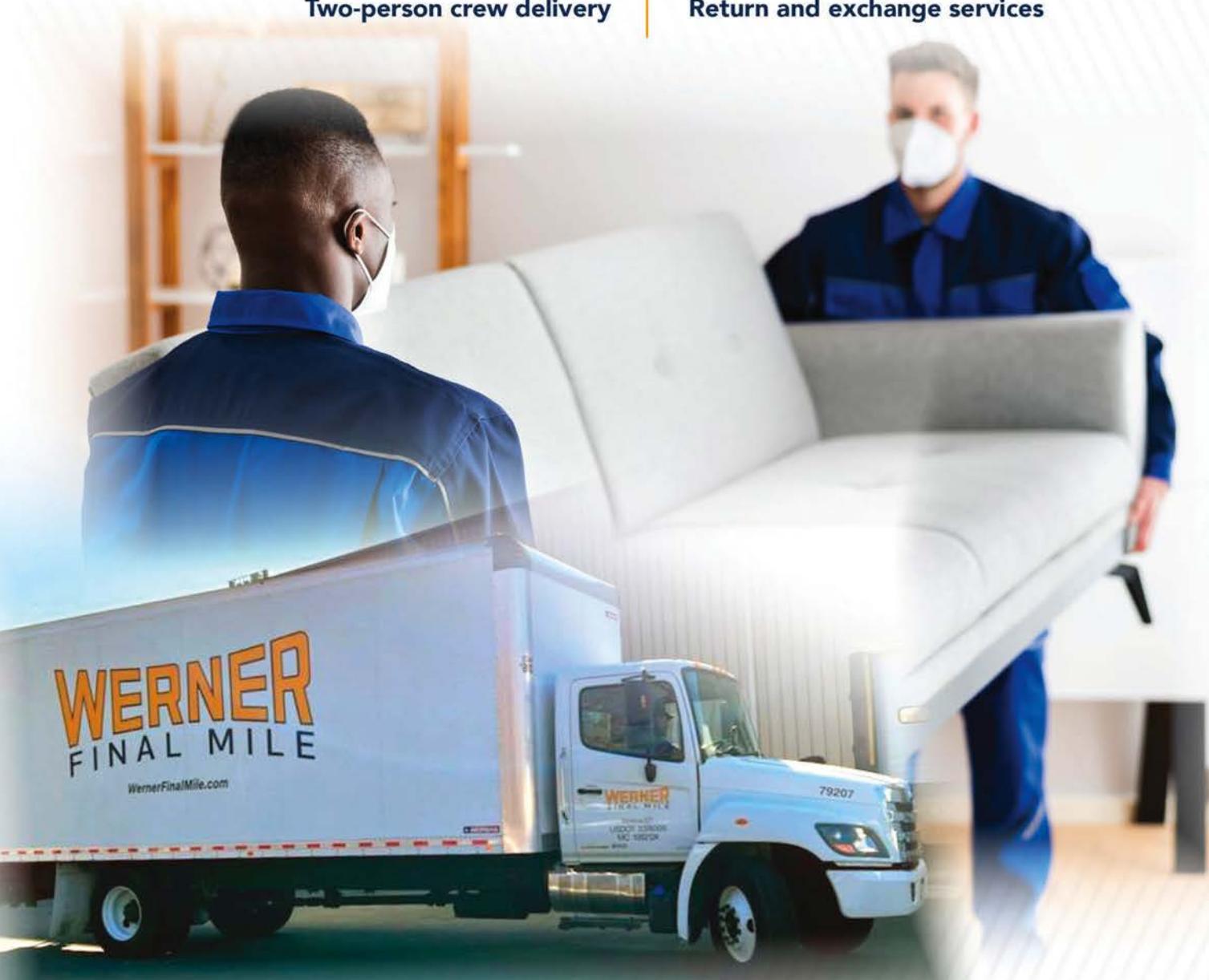
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E-commerce service expectations are higher than ever. To differentiate from competitors and remain profitable, SMBs must implement e-commerce best practices including fast shipping, easy returns, a streamlined checkout process, and efficient supply chain and logistics management on the back end.

“A big mistake some small to mid-sized shippers make is trying to save a few bucks on a load,” Kupillas says. “Shopping among brokers and asset-based LTL carriers spreads your data out everywhere.

“By using five different systems and 10 different carriers, you can’t capture enough information to make actionable or valuable changes to the organization,” he adds.

“With our customers, we capture data in real time at the shipment and order level,” says Kupillas. “We do weekly performance reviews and we look at carrier performance and performance to retailers’ scorecards. What is impacting the carrier or your retailers’ on-time percentage? Because if you don’t capture this information quickly and stay flexible with how you execute it, this is a challenging market to ship in.”

OPTIMIZING THROUGH DATA

Good data informs network optimization—another important strategy for SMB shippers like Undercover Snacks. “We have tailored key reports and alerts in NetSuite to track our business and logistics closely,” explains Levy. “We have much more visibility so we can talk with our various carriers or distributors about what we’re shipping and how much

we’re selling within periods of time to different locations.”

Undercover Snacks relies primarily on distributors who consolidate the snacks with goods from other manufacturers to get its products to stores throughout the United States. They also ship by truckload for a small number of retailers and, to a lesser extent, rely on LTL, including temperature-controlled transportation in warmer climates to prevent the chocolates from melting.

As the company eyes Western expansion, Levy says they’re starting to look at warehouse space and speak with 3PLs to partner with.

The strategy of opening forward stocking locations to facilitate national distribution is not a given in today’s retail

“A BIG MISTAKE SOME SMBs MAKE IS TRYING TO SAVE A FEW BUCKS ON A LOAD. SHOPPING AMONG BROKERS AND ASSET-BASED LTL CARRIERS SPREADS YOUR DATA OUT EVERYWHERE.”

—CHRISTOPHER KUPILLAS, VICE PRESIDENT OF MANAGED LOGISTICS, BLUEGRACE LOGISTICS

conditions. During the pandemic, when volume for canned goods increased, one consumer product goods manufacturer pulled national distribution back to its two factories because it couldn’t make products fast enough to allow for the lead time to get to the distribution centers and then to stores. The change required a switch to longer haul transport, from which they relied on long-standing carrier partners to execute. The company says it has no plans to change the model while stress on its inventory remains, but it continues to make adjustments to find the right carrier mix for its runs.

Network optimization is a key strategy in Undercover Snacks’ growth, too. “The fact that we’re selling a lot to distributors means that now we’re able to engage them in discussions about network planning and consolidation,” Levy says.

WORKING THE PLAN

Making the most of capacity is difficult even when the market is flush with it.

“The biggest challenge for SMB shippers is the planning process,” Kupillas explains. “They have to consider the must-arrive-by date windows for the retailer, production time, preferred carriers, and carriers’ actual transit all at the order level—and these vary by location and retailer. It’s hard for SMB shippers to do this without technology.”

Shippers have to know if they’re using the right carrier for the job and if they’re giving the carrier enough time to deliver on time by considering factors such as carrier lead time and lead time from delivering terminal to get an appointment to drop or unload a trailer at a retailer. “A lot of these aspects to deliver are complicated to manage,” Kupillas notes.

In addition to these middle-mile challenges, many small and mid-sized shippers like Undercover Snacks have to contend with the final mile to consumers. In contrast to the middle mile where big moves can have big impact, in the final mile little moves are what matter, starting with fast, free delivery.



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Meeting final-mile challenges is a necessity for success. Even the potential return is part of one big experience where service defines success or failure.

“Two years ago, you’d say high-level fulfillment—the order, delivery process, and product—is a competitive advantage,” says Kasia Wenker, director of supply chain solutions, ITS Logistics. “But that’s no longer the case. Fulfillment is now a necessary condition for companies to even survive among the competition.”

Fulfillment intimately impacts operating margin today and the financial considerations of shipping decisions extend well beyond the cost of the shipping rate. Wenker cites shipping cost as an example of this. Fail to display it at checkout fast enough and you can lose the sale.

“If you can’t produce the shipping cost, if your APIs time out, consumers will abandon the cart,” she says. “You literally have three to four seconds.”

This is one example of shipping determining sales. And it’s why the customer journey should drive fulfillment options, Wenker says, because brand perception, customer commitments, and customer expectations are all affected by shipping choices.

Successful e-tailers have eliminated the line between e-commerce and e-commerce fulfillment. ShopWorn’s intentional approach to fulfillment is



Luxury e-tailer ShopWorn receives almost all its merchandise from overseas. During the pandemic, relationships with freight forwarders—some stretching back 20 years—were essential.

“THE CUSTOMER JOURNEY FROM THE POINT OF PURCHASE TO FINAL DELIVERY IS PART OF YOUR BRAND BECAUSE EVERYBODY CAN FIND ANOTHER CHEAPER, FASTER, BETTER OPTION ONLINE. EXECUTION HAS TO BE PART OF YOUR SUCCESSFUL PRODUCT OFFERING.”

—KASIA WENKER, DIRECTOR OF SUPPLY CHAIN SOLUTIONS, ITS LOGISTICS

an example. “Our mission is to give the customer the most authentic experience possible for this luxury goods space,” says Michael Goad, vice president of revenue.

Free shipping is an inextricable part of that experience. Even with sky-high small parcel rates, there was never any discussion about charging for shipping. “Over my years, I’ve seen pushback from customers not wanting to spend extra for freight,” Birnbaum says. “You have to listen to the people.”

Protecting the e-commerce experience inspired Undercover Snacks to bring fulfillment in house, although that may change, according to Levy, as e-commerce sales continue to grow. They currently sell from a WooCommerce platform and their products are sold on Amazon, but not fulfilled by Amazon.

“We would gladly use Fulfillment by Amazon, but they do not provide ice packs or other cold shipping solutions that are required to transport chocolate in warm climates,” Levy says.

Fulfillment by Amazon (FBA) is driving the industry forward by enabling many e-tailers to deliver products in one or two days almost anywhere in the United States. But Wenker says today’s delays in the upstream supply chain can make it hard to compete in the FBA arena.

“FBA is a wonderful product,” she says. “But if you can’t keep your products stocked with Amazon due to supply chain issues on the front end—like at the ports—your rankings will fall off. And all of a sudden, the Amazon machine will not work for you.”

A BALANCING ACT

Supporting service excellence while ensuring service capacity is a balancing act for SMBs with growing e-commerce sales. Both Undercover Snacks and ShopWorn like to handle fulfillment in-house to control the service and ultimately the brand experience, but they both also outsource a portion of their fulfillment to 3PLs. For now, both will continue to use a combined approach as they continue to grow.

Expanding will be an expense either way, but, as Wenker explains, it’s a piece of an evolving operating margin equation that is an unavoidable part of success in the e-commerce world.

“Your brand will no longer survive based solely upon the products you offer to the customer,” she says. “It is the delivery portion of it as well: The customer journey from the point of purchase to final delivery is part of your brand because everybody can find another cheaper, faster, better option online. Execution has to be part of your successful product offering.”

Winning in the middle and final mile will come from taking the long view on relationships with carriers, customers, and every supply chain partner between. But SMB shippers don’t have to wait for long-term results. The benefits of committed collaboration with carrier partners, and taking the steps to ensure what Michael Goad of ShopWorn, calls an “authentic” experience, are the keys to short-term success in today’s crazy capacity-stricken supply chain. And they’re the strategies many small and mid-sized businesses use to write their own success stories. ■

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CARGO SECURITY:



**HAVE A
SAFE TRIP**



From leveraging bottlenecks to launching malware attacks, criminals are targeting the supply chain. Here's how to keep your freight-and information-safe.

By Helen Mann

How's this for scary? In the second quarter of 2021, cargo theft experienced a 253% increase by value, according to Sensitech's quarterly Cargo Theft Intelligence Report. The average loss per incident was \$365,459.

Full truckload theft accounted for more than half of freight-related crime, in spite of its decrease from the first quarter of 2021, Sensitech's report finds. Pilfering—the practice of stealing select items out of a trailer—accounted for 44% of thefts and rose 10% during that period. Electronics were the item du jour for thieves. Theft of computers, televisions, gaming consoles, and similar items rose 60% from the first quarter of 2021, and a distressing 92% since the second quarter of 2020. One incident alone involved an electronics load valued at \$1.2 million.

RISKY BUSINESS

Moving freight in 2022 can be a tricky business. Not only are ongoing supply chain slowdowns generating opportunities for cargo thieves, but today's increased reliance on technology brings a whole new set of vulnerabilities with it.

It isn't just cargo theft that can keep U.S.-based shippers up at night, either. Instead, companies have to account for data breaches and malware.

"If your supply chain is reliant on technology, your data has to be that much more protected," explains Azad Ratzki, chief technology officer at BlueGrace Logistics, a third-party logistics provider in Riverview, Florida. "You get the benefits of efficiency, but if it goes down because of ransomware, what was once a purely physical process is now both physical and virtual."

The good news is that shippers can deploy strategies and technologies to ward off crime.

"With the enhancements that have been developed, such as geofencing, RFID, or electronic logging devices monitoring truck routes, there's better visibility than there ever has been before," says Eddie Leshin, senior advisor

at BlueGrace Logistics. "Shippers can see where a product is in transit, whether it's on the right track, and whether it's being moved properly."

SLOWDOWNS MAKE FREIGHT A TARGET

Ongoing bottlenecks have made freight more vulnerable to attacks in transit. But numerous stops have always been an inevitable part of surface transportation, whether that's a driver stopping to take a shower or containers waiting at an intermodal yard. Unfortunately, that can make freight a prime target for thieves.

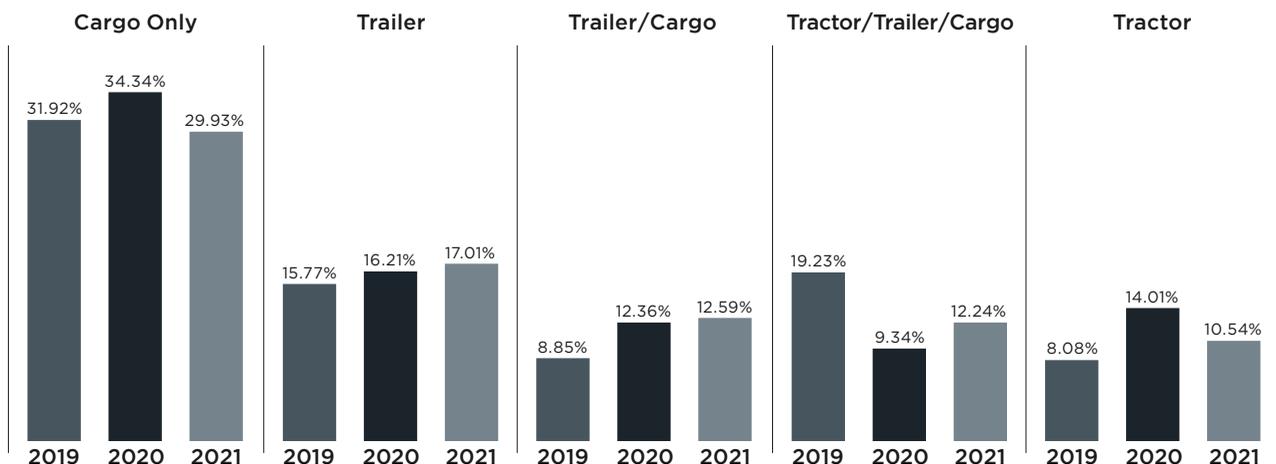
The problem worsened in 2020. In its annual Supply Chain Security Risk Report, CargoNet, a freight security consultancy in Jersey City, New Jersey, reported the first increase in cargo theft in years. Thanks to a combination of increased consumer demand and pandemic protocols, break-ins spiked from 1,104 instances in 2019 to 1,427 in 2020.

"Cargo thieves have never had a more favorable environment," the report notes.

"What jammed up the supply chain was the unprecedented pull of goods to the end user," says Keith Lewis, vice president of operations at CargoNet, a Verisk business. "We ended up with a shortage of truck drivers, a shortage

CARGO THEFT BY INCIDENT TYPE

Top 5, Q3 2021



Source: Cargo Theft Trends Review, CargoNet, a Verisk business



INSURING AGAINST RISK

To help you navigate and mitigate supply chain risk and disruption, *Inbound Logistics* got some expert advice from Erika Melander, (pictured, left) manufacturing practice lead at Travelers, a 165-year-

old insurance company with offices in the United States, United Kingdom, Ireland, and Canada.

How has the COVID-19 pandemic affected the way manufacturers assess and manage risk?

COVID-19 put a spotlight on the fragility of the supply chain. While we've seen severe weather, political disruption, economic turbulence, and other events lead to supply chain disruptions in the past, few, if any, have been as wide-reaching as this pandemic.

What has been made clear is that even the companies with the best holistic risk management programs need to deal with the continuing changing nature of supply chain risk. At Travelers, we focus on analyzing risk so that we can help companies navigate and mitigate those threats. That is why we know it is so important for manufacturers to take a fresh look at supply constraints upstream, in-plant, and downstream and implement best practices to manage risks.

To help manufacturers do this, Travelers offers a free Supply Chain Pressure Test. It is a quick questionnaire that can help uncover and avert potential supply chain risks before they emerge. By regularly assessing their risk landscape, manufacturers can make adjustments and take actions that can help them prepare more effectively for the next disruption.

What should manufacturers keep in mind to limit supply chain vulnerabilities?

It is important to focus on risks to the entire supply chain, not just upstream, because a break or stress in any part of the chain can result in an unexpected and costly business interruption.

In the recent past, upstream supply bottlenecks have been widely reported. Two examples include when the *Ever Given* cargo ship was stuck in the Suez Canal, as well as the chip shortage in the auto industry. However, it is not just this end of the supply chain that demands focus. The in-plant and downstream segments can also affect a manufacturer's business.

Consider manufacturing plants that had to reduce output or shifts while they managed employee safety, or customers who canceled orders because they were affected in their own

way by the pandemic. These impacts to employees and customers also led to disruption. Maintaining a focus on pressure points across the entire spectrum is critical for every manufacturer.

What specific steps can manufacturers take to reduce the potential for interruption of the flow of goods to customers?

Start by conducting a thorough review of your suppliers. Consider their track record, financial resources, certifications, and business continuity plans. This can help you identify areas of vulnerability, which could potentially result in a delayed shipment.

If you source critical components or materials from a single supplier, think about expanding your list to include a network of trusted backup suppliers. This can help protect you if your primary supplier experiences a disruption.

You may also want to reevaluate the cost-benefit of using offshore supplier networks and weigh the benefits of bringing the supply chain closer to you, which could shorten delivery times and reduce inventory requirements. Be sure to also consider the geography and typical weather patterns within a supplier's region.

Next, look at your employees and the key roles they play. Many of them have specialized skills and cannot be easily replaced, especially given the tight labor market. To help minimize any production disruptions that could occur if any of your employees leave their roles or are injured, have plans in place for how you can find and attract qualified talent, appropriately onboard and train them, and keep them engaged.

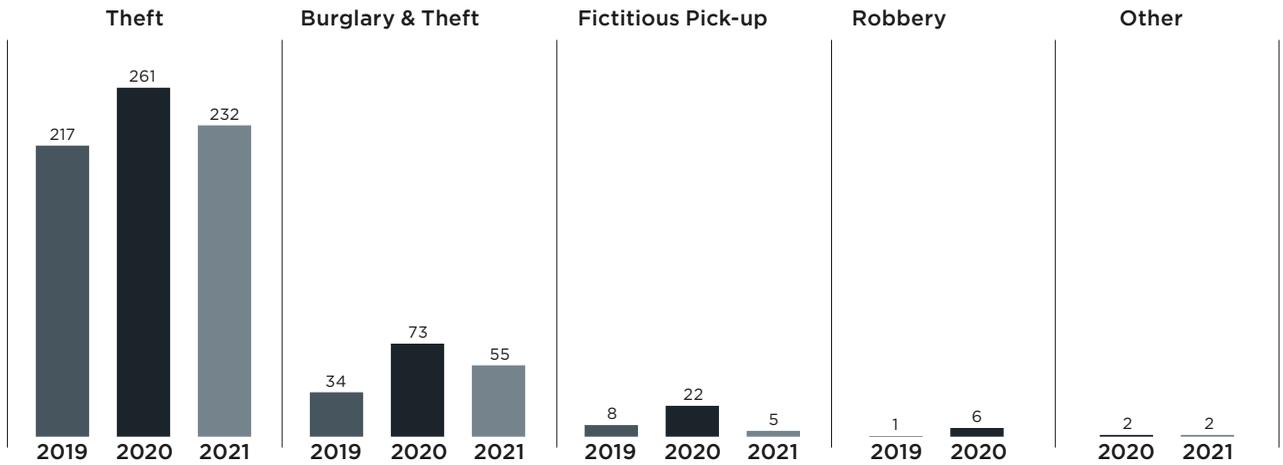
It is also important not to forget about your machinery. This is often highly specialized, which means there may be a long lead time for a replacement part if any piece of equipment breaks down. Creating a business continuity plan that includes critical machines is vital.

Next, move downstream and look at the final leg of a product's journey. To help reduce interruptions to the flow of goods to customers, think about ways to diversify distribution networks, and consider distribution partners who are investing in automation to accommodate the increased volume of e-commerce transactions.

It is also important to think about inventory controls and cargo risks, since a lot can happen on a product's journey to your customer, whether in transit or in storage. Finally, don't forget about insurance, which can help protect assets and revenue along the supply chain.

CARGO THEFT BY MODALITY

Theft by Incident Type, Q3 2021



Source: Cargo Theft Trends Review, CargoNet, a Verisk business

of trucks, a shortage of trailers, and a shortage of container chassis. Add all that up and you get a lot of freight sitting for long periods.”

By the end of 2020, those issues cost shippers \$63 million in value, according to CargoNet statistics.

But carriers are not stuck waiting for a burglar to strike. They can use seals, locks, GPS systems, and telematics to ward off crime. Importantly, when it comes to security measures, there isn't a one-size-fits-all solution. Run a risk assessment and planning security measures in correspondence with the value of a shipment, recommends Bill Schoenherr, vice president at NovaVision, a security products company based in Bowling Green, Ohio.

“If you have a load to ship, don't do nothing,” he says. “Even if your company is on a budget, get something as simple as a bolt seal.

“Depending on the type of shipment, you can layer multiple technologies, which we recommend as you do your risk assessment,” he adds. “The main goal is getting the doors closed, locked up, and controlled.”

It's just as important for carriers to have a plan with their drivers that goes beyond reminding them to park in a

safe area. Backing up to a building and parking in well-lit areas are good starts, but Lewis recommends staying out of high crime areas altogether.

“Hot spots or danger zones are all over the United States,” he says. “If my drivers will run out of hours and finish the day in a high theft area, I tell them to stop a half hour earlier in the middle of nowhere. That greatly reduces the risk of theft.”

SECURING WAREHOUSE INVENTORY

Cargo security is equally important once freight reaches its (temporary) destination. Warehouses can be compromised in a few different ways.

For one, employee churn is notoriously high. In 2018, turnover averaged 32.5% among warehouse employees, according to a 2019 International Association of Refrigerated Warehouses survey. This can leave warehouses vulnerable to bad actors.

But attacks can obviously come from the outside as well. In November 2021, three men were indicted following a failed warehouse heist outside of Long Beach, New York. The trio allegedly broke into the warehouse wearing fake police tactical gear, restrained employees, and stole inventory worth hundreds of thousands of dollars.

“In today's environment, we deal with a lot of unique situations,” says James Spence, principal consultant at ADT Commercial. “Computer chips, for example, are now at an extremely high value. You have to put an extra level of protection around any logistical environment that houses items like computer chips.”

As a result, warehouses perform security audits and use tools like access credentials, Bluetooth door readers, intrusion detection, and license plate readers to unlock a gate.

“For warehouses that see high turnover or store high-priced inventory, it's best to avoid manual processes,” says Bernhard Mehl, CEO and co-founder of KISI, a physical security system provider in New York City. “You can set up a system to decide which groups of people have what level of access.”

USING DATA TO FIND WEAK SPOTS

A big benefit of utilizing the available technology is collecting data. A few weeks or months of surveillance information can be helpful for identifying security weak spots.

“If a security breach or theft happens, you can go back and investigate the data that you've collected,” says Mehl.

VIRTUAL THREATS ON THE RISE

In addition to physical security, threats are becoming increasingly common in the virtual world. Cybersecurity breaches are on the rise, and logistics firms are not an exception to that trend.

Cybercriminals use malware and bots to exploit security weak spots and gain access to a company’s confidential data. In addition to financial harm, cyberattacks can compromise the security of any vendor or partner that a firm works with.

“As long as a company has information that is valuable to hackers, they will be a target,” notes Pierluigi Stella, chief technology officer of Network Box, a cybersecurity service provider in Houston, Texas. “Sometimes a logistics firm isn’t even the target, but hackers use it as a vehicle to target somebody else.”

These attacks are often facilitated through email phishing scams. Hackers gain access to company information when an employee accidentally downloads malware through an email attachment or link.

Many attacks involve ransomware,

where cybercriminals encrypt sensitive data and then demand payment (a ransom) for its return. Companies on the receiving end of this extortion may even find that a hacker has sold their information on the internet. Ransomware incidents rose by 715% in 2020, finds a BitDefender report.

But even truck equipment can potentially be hacked. In June 2020, the FBI circulated an advisory warning that cybercriminals could breach electronic logging devices to access company networks or gain control of the truck engine itself.

CYBERSECURITY FROM THE TOP DOWN

These types of attacks can be mitigated through company-wide awareness, starting from the top down.

“Cybersecurity needs to be a boardroom conversation that is addressed on day one,” says Vijaya Rao, founder and CEO of Techvio, an IT solutions platform in Philadelphia. “Companies need to take a

Many warehouses and DCs protect their facilities using security systems such as Kisi, which provides workers cloud-based keyless entry.



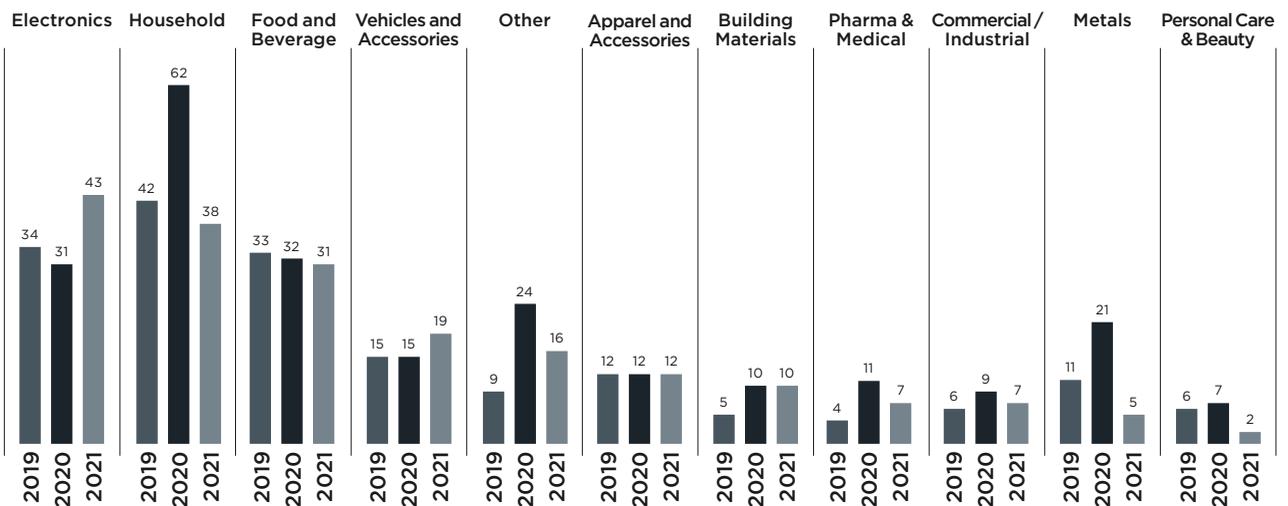
30,000-foot view and decide what their cybersecurity goals are.

“If you have a security operations protocol determining how data is handled within the company, decide what protections are needed, and who has access to what,” he adds. “That is how you maintain a strong cybersecurity posture.”

Firms don’t have to be sitting ducks, waiting for an attack to happen. “Some small or mid-sized businesses might be reluctant to invest in these measures,” says Ratzki. “But business owners can feel good knowing that their company is protected.”

CARGO THEFT BY COMMODITY

Q3 2021



Source: Cargo Theft Trends Review, CargoNet, a Verisk business

HIGH

STRESS
LEVEL

**BUILDING CARRIER
RELATIONSHIPS
THAT WITHSTAND THE
STRESS TEST**

Developing mutually beneficial relationships guarantees your partners will be there for you - in good times and bad.

By Gary Wollenhaupt

In times of crisis, you learn who your real friends are, as the saying goes. That has never been more true as pandemic-driven supply chain disruption tested relationships among partners across the industry.

The pandemic fostered challenges like the surge in e-commerce shipments, new safety protocols, falling capacity and uncertainty. Shippers and logistics providers learned which relationships withstood the stress test and which did not.

As the supply chain has begun to stabilize, partners have learned to adjust to the new normal. Shippers and carriers have long memories about who stood by them when times were tough and who chased after new relationships for a few cents per mile in either direction.

Technology plays a part in making those relationships more efficient. But there's no substitute for respecting the people who drive the trucks, book the loads and work the docks. Shippers and providers have learned new lessons about building mutually beneficial relationships during this crisis and the next.

RELATIONSHIPS MATTER

Although the terms “shipper of choice” and “carrier of choice” have been in vogue for years, they took on deeper meaning during the pandemic.

Relationships that matter aren't based on knowing someone's name or their favorite football team but counting on each other when it matters. If you waited until your company was in a capacity crunch to build relationships with carriers, it was too little, too late.

“When every carrier has more business than they can handle, a shipper becomes a glass of water in the ocean,” says Lonny Holston, export operations coordinator for Mickey, a digital platform for commodity transactions. “Hopefully, shippers had been cultivating their relationships with carriers before the pandemic.”

While cost is always a factor, the criteria that PFS, an Allen, Texas-based e-commerce fulfillment provider, considers when selecting carriers has changed since the pandemic.

“Cost and service are going to be important, but we've come to value the ability to be predictable and reliable,” says Tracey Mewborn, corporate traffic manager for PFS.

PFS manages logistics for its customers in both inbound and outbound lanes, handling truckload moves and direct-to-consumer deliveries.

“During periods of crisis, when we're asked to deliver a miracle on behalf of our clients, we lean on personal relationships with our carrier partners,” says Patrick Lowe, area vice president of business management for PFS. “We need the same agility and responsiveness from them that we're being asked to provide. It does us no good to pick, pack, and ship the orders if they can't get put into the network.”

Shippers look to build relationships just as much as carriers do to ensure capacity availability and efficiency. Logistics provider Schneider connects shippers and carriers to develop more capacity options through technology. Despite the growth of transactional



Building strong relationships with carrier partners starts with respecting drivers—establishing personal communication, expediting loading and unloading of freight, and streamlining proof-of-delivery paperwork.

freight tech companies and apps, shippers still look for carriers they can count on.

“Shippers may work with a lot of different carriers, but they absolutely prefer to work with a few carriers that can give them a lot of options and are really in it with them,” says Erin Van Zeeland, senior vice president and general manager of logistics services at Schneider in Green Bay, Wisconsin.

To some extent, good relationships can be quantified. Echo Global Logistics, a Chicago-based third-party logistics provider, tracks shipper performance across various factors such as how often the freight is ready when the shipper says it will be ready, and how long drivers spend waiting to load and unload.

“We operate based on the data we gather from shippers, and those are the things carriers care about in terms of reliability,” says Jay Gustafson, Echo's senior vice president of marketplace solutions.

RESPECT THE DRIVER

Shippers who want to build better relationships can start with respecting drivers. Given the ongoing driver shortage and capacity crunch, making life more efficient for drivers goes a long way. Drivers have long memories and talk to each other, so a shipper that makes drivers wait for a load or

requires onerous paperwork for proof of delivery may find themselves in a capacity shortage.

“The most precious asset in the whole ecosystem is the professional driver,” says Van Zeeland. “We need to ensure that we are efficient with the driver's time and that we respect the job that the driver is doing so that we make it worth it for that professional to stay employed in this industry.”

Schneider uses scorecards where drivers can rate shippers' locations; it then shares that information with the shippers.

“Drivers rate shippers like you'd rate a restaurant,” Van Zeeland says. “The drivers vote with their decision to accept a dispatch and an offer from a customer location that may or may not be doing the right things for the driver.”

“You can clearly see when a shipper is not valuing a driver's time, and we can show shippers how long their freight waits to get a driver involved,” she adds.

PFS encourages its local managers to meet with drivers face-to-face at the loading dock. “While technology helps us find resources, nothing beats personal communication for building relationships,” Mewborn says.

Echo Global Logistics uses data from geofencing and other sources to monitor shipper performance and set expectations with trucking companies.

“The last thing we want to do is send

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a driver into a facility where we know it might take them six hours to get loaded and not give them a heads up,” Gustafson says.

TECHNOLOGY REDUCES FRICTION

Shippers can't rely on having refreshments and a restroom for drivers and call that relationship building. Today, companies must invest in technology to be considered a shipper of choice.

“To be a shipper of choice, companies have to go beyond the Golden Rule to the Platinum Rule, which is to treat others how they want to be treated,” says Dan Cicerchi, general manager and vice president of transportation management at Descartes, a software-as-a-service provider of logistics solutions.

The same information systems that enable shippers to provide updates to their customers make life easier for carriers with mobile apps to take photos for proof of delivery, which also speeds payment of invoices.

“Connecting all the capabilities that shippers need are also things that are good for carriers,” Cicerchi says.

With real-time tracking technology, receivers can know if an inbound shipment will be late and change dock schedules accordingly. When the shipment does arrive, there's an open door and labor available to unload.

“Technology doesn't solve everything, but it gives a business the ability to make better decisions to accommodate the drivers,” Cicerchi says.

As technology matures and more companies plug into the potential of data analysis, deeper relationships support more data sharing. These links can help organizations grow closer while operating more efficiently.

“Elevating visibility and communication among parties ultimately strengthens the relationship because there are fewer black boxes that make it hard to know where a parcel is or where the shipment records are,” Lowe says.

Schneider's tech solutions use APIs to plug into shippers' transportation management systems to help find competitive carriers and rates.

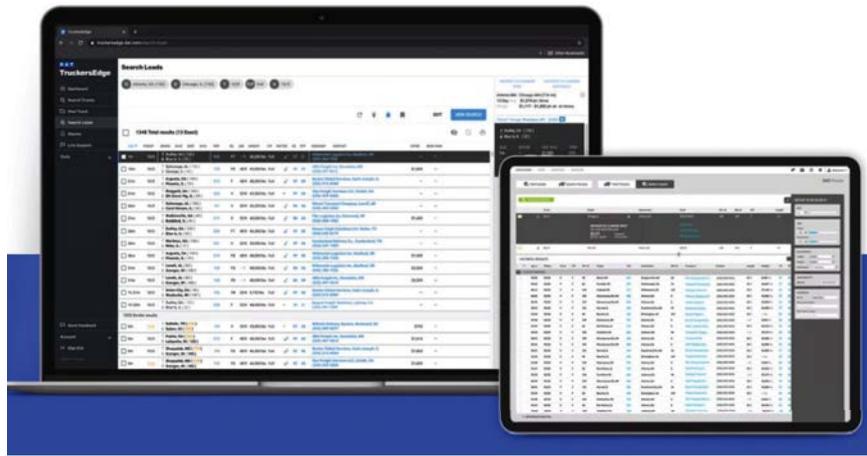


PHOTO: DAT LOAD BOARD

DOES UBERIZATION OF CARRIER RELATIONSHIPS WORK?

While freight matching apps and load boards make it easier to pair shippers and carriers, do relationships get disconnected? Is it easier to ghost on pickups or delay trucks at the dock when you don't know the people behind the loads? After all, you may never encounter the other party again. Does the efficiency and anonymity of technology get in the way of relationships?

Technology may help connect carriers and shippers, but both parties are often interested in building ongoing relationships beyond the transactional.

Schneider serves as a broker to carriers and has its own freight marketplace, Schneider FreightPower.

“We don't intend to stay transactional with a carrier that starts interacting with us that way; it's just our chance to get a look at them after they're contracted with us so that we can determine who we want to be involved with strategically,” says Erin Van Zeeland, senior vice president and general manager of logistics services at Schneider.

E-commerce services provider PFS recently increased its use of load boards to find availability, but it works in a hybrid model to build relationships with carriers.

“We try not to be the one who uses a carrier once and walks away, and then calls again six months later,” says Patrick Lowe, area vice president of business management for PFS.

But sometimes, a one-and-done interaction is good enough for both parties when there are specific requirements.

When there's a particular need for goods to go from A to B by a specific date cost-effectively and securely, going to the marketplace can connect with otherwise unknown opportunities.

“Load boards open up the competition in the market, where other regional and smaller carriers are able to regularly compete for smaller loads,” Lowe says. “We can serve our clients better because we're not beholden to one carrier.”



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“They’re not spending the time dialing for diesel in the spot market, so instead they can determine the best carrier solutions from their supply chain partners, and they can manage freight more strategically,” Van Zeeland says.

Technology can automate repetitive and mundane tasks by managing paperwork and removing the need for phone calls and email updates, allowing people to focus on tasks that add more value for each party.

“A lot of what shippers expect ultimately falls on the shoulders of the drivers,” Cicerchi says. “Technology that removes them from some of the chatter of check calls and document management can play a powerful role in focusing on the things that matter.”

Carriers have embraced technology as part of the onboarding process with brokers and third-party logistics providers. Not too long ago, carriers had to fill out a 20-page contract to apply to work with a broker and fax it back and forth. After all that, the carrier might still not qualify for some reason. With large logistics providers like Schneider, carriers can use the online portal to apply with

just a few bits of critical information to find out whether they qualify.

“That technology is in the brokers’ and carriers’ best interest because it gets rid of wasted effort,” Van Zeeland says.

COVID exposed the points of friction in supply chain operations, and shippers that didn’t invest in automation found it harder to keep up.

“The genie is out of the bottle in terms of the fair expectations that carriers and drivers have about their experiences as they pick up and drop off freight,” Cicerchi says. “The broader community of shippers and logistics service providers needs to invest in technology but to still be invested in the relationships.”

Shippers must understand that carriers come in all shapes and sizes, from independent owner-operators to large asset-based carriers and brokers. Not every trucker has an IT department to implement a proprietary technology platform. The technology must be easy to use for the truckers, so it’s accessible on a smartphone or tablet without the need for complex installation and integration.

“A big trend in the industry, along with the theme of being easy to do business with, is: Let’s meet the carrier where they want to be met technology-wise,” Gustafson says.

COMMUNICATION COUNTS

Good relationships are built on open communications. That’s true in your personal life, and it’s essential in your supply chain. Technology enables faster, seamless communication, so shippers, brokers, logistics providers, and carriers have access to the same information simultaneously.

PFS must meet its customers’ promises—consumers often order based on delivery windows, and they expect accurate updates between the time they click “buy” on the website and the time the product arrives at their door.

“It’s more important than ever to partner with companies that have robust communication outlets,” Lowe says. “If there are issues or delays, we’re able to help our clients be proactive.”

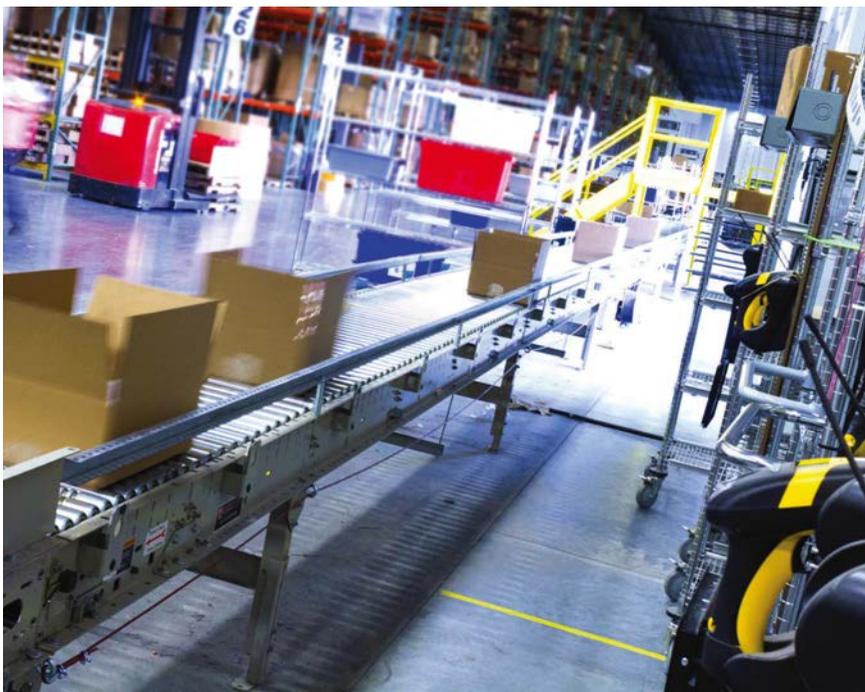
Echo uses the Descartes MacroPoint system to track shipments, so they don’t have to contact trucking carriers for updates throughout the lifecycle of a shipment.

“We access that information as soon as the driver has been dispatched through to delivery, and we use it to provide the right levels of proactive communication,” Gustafson says. “We want to be the shipper of choice to our trucking companies by not bombarding them with phone calls and requests for updates.”

Ultimately, shippers and carriers have similar goals. Both want reliable, predictable information and service to ensure they can cost-effectively meet customer expectations.

Shippers see better cost and service, including flexibility, when they work with carriers they’ve known through market cycles to be solid strategic partners.

“Shippers must understand you can’t pay a driver enough to go into a facility that is rude or disrespectful, or just wastes the driver’s time,” Van Zeeland says. “The turnover impact in going into those kinds of facilities is just not worth it.” ■



PFS, which provides e-commerce operations services for consumer brands and internet retailers, partners with companies that have strong communications outlets to stay ahead of delivery delays or issues.



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10 BEST SUPPLY CHAIN COMPANIES OF 2021

**Gartner's annual global
Supply Chain Top 25 identifies
today's supply chain leaders and
highlights their best practices.**

SOURCES: Thomas Insights, Gartner Inc.



Amid severe and ongoing disruption, organizations that can juggle conflicting priorities to operate agile, robust, transparent, and ethical supply chains are impressive.

Gartner's Supply Chain Top 25 for 2021 celebrates companies whose supply chain strategies have shown them to be purpose-driven, disruptive, and early adopters of innovative technologies.

To recognize the most sustained examples of supply chain excellence, Gartner lists Apple, Amazon, McDonald's, P&G, and Unilever as Supply Chain Masters—an accolade earned as a result of having attained top-five composite scores in the Gartner Supply Chain Top 25 for at least seven out of the past 10 years.

These five aside, here are the top 10 supply chain companies of 2021.

SUPPLY CHAIN MASTERS LEAD THE WAY

To recognize sustained supply chain excellence, Gartner introduced the "Masters" category in 2015. To be considered a Master, companies must have attained top-five composite scores for at least seven out of the past 10 years. All of the 2020 Masters qualified for the category in 2021. Meet the masters:

- Apple
- Amazon
- McDonald's
- Procter & Gamble
- Unilever

1 CISCO SYSTEMS

For the second year running, telecommunications technology conglomerate Cisco Systems tops Gartner's Supply Chain Top 25.

Thanks to its commitment to creating a dynamic, distributed supply chain, focusing on dual sourcing to build resiliency, and fostering meaningful relationships with its suppliers, Cisco has continued to thrive despite the disruptions of the past 18 months.

The company has also made a concerted effort to integrate sustainability initiatives with its supply chain business. Cisco has pledged to reduce its greenhouse gas (GHG) emissions by 30%, while 80% of its component, manufacturing, and logistics suppliers will have a GHG emissions reduction target.





2 COLGATE-PALMOLIVE

Colgate-Palmolive, which provides household and consumer products to millions of households around the world, has demonstrated agility, resilience, and commitment to supply chain sustainability.

Early in 2021, Colgate-Palmolive was featured on *Fast Company's* list of the World's Most Innovative Companies. This was thanks to its development of a first-of-its-kind recyclable plastic tube, a technology it has also shared with third parties.

Colgate-Palmolive has consistently invested in new digital capabilities, including factory automation and advanced network modeling. For example, in a bid to connect manufacturing operations to its supply chain and boost supply chain reliability, the company is moving toward a predictive maintenance model. Wireless sensors and artificial intelligence-powered data analytics will enable Colgate-Palmolive to monitor equipment health 24/7 and optimize its performance.



3 JOHNSON & JOHNSON

Johnson & Johnson has proven itself to be an MVP since the COVID outbreak. In March 2020, the Johnson & Johnson Family of Companies and the Johnson & Johnson Foundation pledged \$50 million to support frontline healthcare workers with meals, personal protective equipment, training, and mental health support.

A partnership with not-for-profit company Prisma Health earned Johnson & Johnson Gartner's Power of the Profession Award for Customer or Patient Innovation of the Year. The pair developed a 3D-printable device, which allowed for a single ventilator to be fitted for use by two patients.

Part of the company's Healthy Lives Mission includes a commitment to using 100% recyclable, reusable, or compostable plastic, recycled paper, and pulp-based packaging by 2025.



4 SCHNEIDER ELECTRIC

Schneider Electric, a global specialist in energy management and automation, operates a diverse supply chain in more than 100 countries.

Driving sustainability throughout the supply chain, which includes embracing an approach known as "embedded sustainability," is a top priority for Schneider Electric to ensure that integrating environmental, health, and social value with core business activities does not impact price or quality.

Currently, more than 73% of the company's investments are being directed toward developing new and even more sustainable solutions.

In addition, Schneider Electric's EcoStruxure platform is helping the company build a coalition of partners committed to driving innovation in the energy management industry.



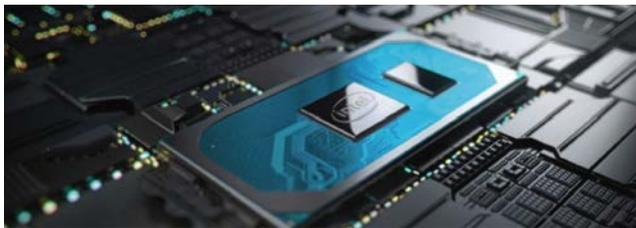
5 NESTLÉ

For the second year running, Nestlé scored a perfect ESG score in the Gartner Supply Chain Top 25. (An ESG rating measures a company’s exposure to long-term environmental, social, and governance risks.)

Nestlé’s efforts include developing simplified packaging and biodegradable and compostable materials and upping its use of recycled content. Nestlé also launched an interactive video platform to

raise consumer awareness about the complex sustainability issues associated with the palm oil supply chain.

The company is also expanding its e-commerce business and developing new direct-to-consumer capabilities across its entire supply chain.



6 INTEL

Amid a worldwide chip shortage, Intel announced in March 2021 that it would be spending \$20 billion to build two new chip plants in Arizona. This signaled the company’s continued focus on manufacturing and demonstrated its ability to deliver innovative supply chain solutions under difficult circumstances.

Intel’s RISE (responsible, inclusive, sustainable, enabling) strategy includes the goal of developing “the most sustainable and energy-efficient PC in the world, eliminating carbon, water and waste in its design and use.”

In its 2020-21 Corporate Responsibility Report, Intel notes it has increased its use of renewable energy from 71% to 81%, conserving 7.1 billion gallons of water in the process.

To drive sustainability throughout its supply chain, Intel requires its 9,000+ tier 1 suppliers to comply with the Intel Code of Conduct and the Responsible Business Alliance (RBA) Code of Conduct, and to develop their own corporate responsibility strategies, policies and processes.

WHO ELSE MADE THE LIST?

These leading companies round out the Gartner Supply Chain Top 25 list:

11. AbbVie
12. Nike
13. Inditex
14. Dell Technologies
15. HP Inc
16. Lenovo
17. Diageo
18. The Coca-Cola Company
19. British American Tobacco
20. BMW
21. Pfizer
22. Starbucks
23. General Mills
24. Bristol Myers Squibb
25. 3M

7 PEPSICO

One of PepsiCo’s top priorities is investing in digital tools and advanced technologies to create a more efficient, streamlined supply chain. It focuses on data integration to better meet consumer demands and sophisticated data analytics to drive those efficiencies.

Following the COVID outbreak, PepsiCo showcased its agile supply chain by quickly launching two direct-to-consumer offerings—Pantryshop.com and Snacks.com—to enable customers to customize a range of its products.

The company is also committed to driving sustainability through its supply chain. For example, PepsiCo recently revealed plans to become net water positive—replenish more water than it uses—by 2030. If successful, the company will be among the most water-efficient food or beverage manufacturers operating in high-risk watersheds.



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8

WALMART

Walmart’s supply chain is often touted as one of the most effective in the world. In the past two years alone, the retailer has invested \$11 billion in e-commerce, supply chain, and technology.

The company launched Walmart+, which rivals Amazon Prime, implemented a range of new fulfillment options—such as curbside pickups—and is upgrading its warehouse management system to drive efficiency through its supply chain.

The company has also committed to achieving zero emissions by 2040.

9

L'ORÉAL

L’Oréal has made it into the top 10 of the Gartner Supply Chain Top 25 for the first time thanks to its agile, customer-centric, and ethical supply chain practices.

“Digital Beauty” is a key focus of the company’s supply chain strategy. This includes a shift towards technology-augmented logistics and increased use of data to accommodate the rise of e-commerce.

L’Oréal also has a fantastic track record for corporate social responsibility (CSR). Not only is it the only company to rate Triple-A in the client data protection (CDP) ratings for four years in a row, but it was also featured in Ethisphere Institute’s 2021 list of the World’s Most Ethical Companies. In addition, the L’Oréal for the Future program includes the goal of reducing the greenhouse gas emissions linked to the transport of its products by 50% between 2016 and 2030.



10

ALIBABA

Alibaba features in the Gartner Supply Chain Top 25 top 10 for the second year running, having significantly expanded its supply chain offerings to deliver manufacturing efficiencies.

Example: Alibaba.com Freight was launched by the company in 2020. This supply chain-as-a-service initiative allows small and mid-sized companies to compare, book, manage, and track bulk ocean and air freight in real time.

The Chinese retailer has also collaborated with Unilever on The Waste Free World Initiative to accelerate the process of returning high-grade plastic back into a closed-loop recycling system within China.



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DEFINING A TOP 25/ MASTERS COMPANY



For 2021, the Top 25 and Masters companies highlighted in the Gartner Top 25 Supply Chains report embraced three key trends that highlighted their purpose, enabled transformation, and accelerated digital capabilities:

1. Integrated, Purpose-Driven Organizations

In 2020, many of the supply chains in Gartner's Top 25 study ranking helped keep society running during the darkest days of the pandemic. Now they have an opportunity to solve some of the world's longer-term social and environmental challenges.

A maturity differentiator among purpose-driven organizations is that those farther along in the journey are not simply supporting a varied list of "green" initiatives and people-related programs. Instead, they integrated these into a larger strategy alongside commercial partners. Some are even leveraging product marketing budgets to fund this work and integrating it into brand messages, instead of treating environmental, social, and corporate governance (ESG) investments as a purely operational cost.

2. Customer-Driven Business Transformation

Along with intermittent supply disruptions and larger-than-normal demand swings, the pandemic has driven an accelerated level of business model transformation across industries that required supply chains to be highly adaptive.

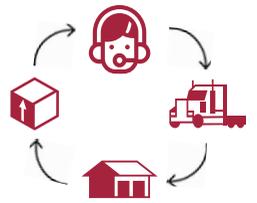
"Many changes were driven by an outsized uptick in products and services delivered direct to customers and patients, instead of through more traditional, centralized locations such as physical stores and medical facilities," says Mike Griswold, vice president team manager with the Gartner Supply Chain practice.

3. Digital-First Supply Chain

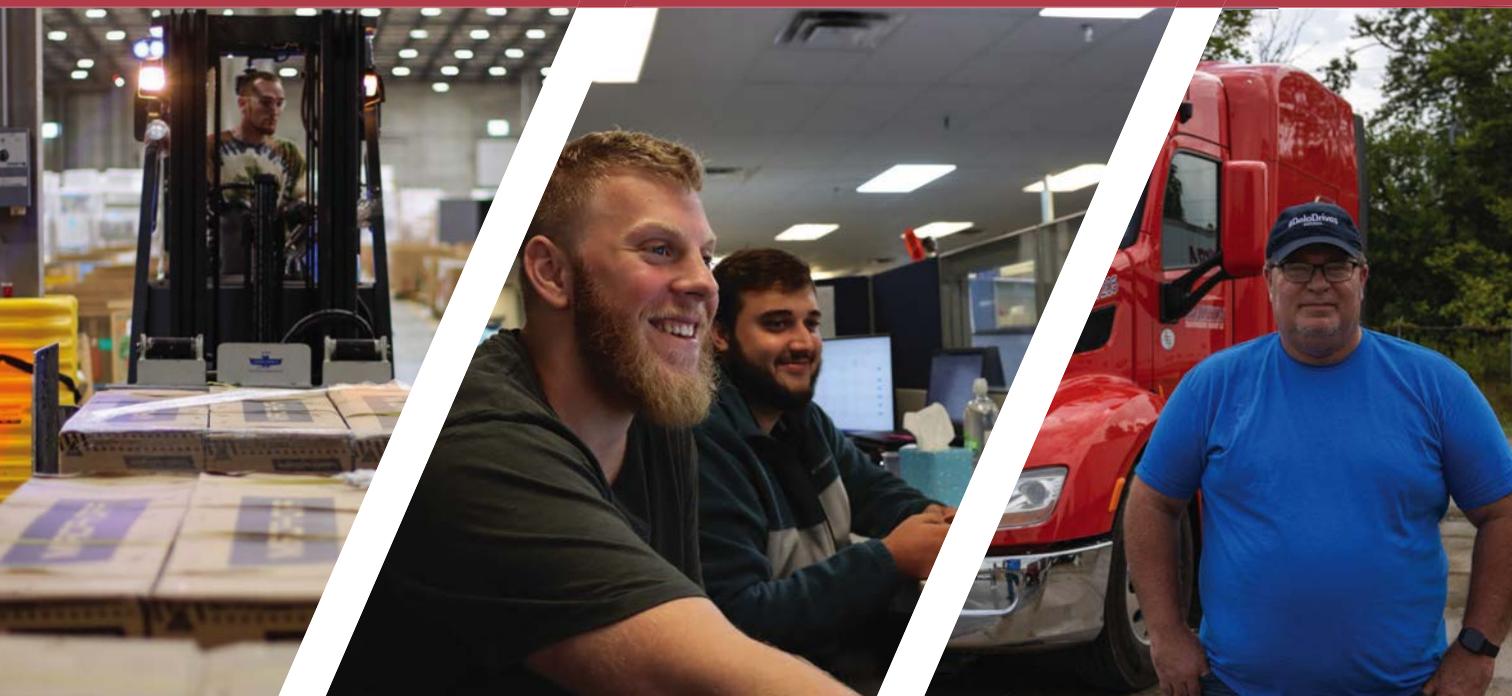
A Gartner survey of board of directors, taken late in 2020, showed that nearly 70% of companies accelerated their digital roadmaps during the pandemic. Some leading supply chains have reached a point in their transformation journeys where they consider themselves "digital first" in the use of technology to enable more seamless customer experiences and more automated and insightful decisions in supply and product management, at scale.

However, digital transformation would not be possible without the right talent. Leading companies conduct formal skills assessment and strategic workforce planning. Artificial intelligence, machine learning, and big data analysis are the most common capabilities, and most are simultaneously recruiting and developing these skills in their organizations. Several advanced supply chain organizations run digital literacy and dexterity programs to enable employees to better understand and exploit digital business opportunities.

"Leaders must position new digital technologies as a means for employees to stop spending time on manual, non-value-added activities, so they can focus on providing value for their customers," says Griswold.



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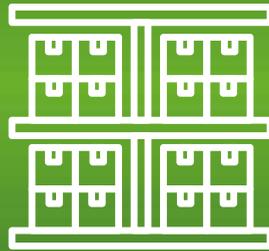


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18 QUICK TIPS





Looks like 2022 will be fraught with many of the same challenges as last year. But IL has your back. We collected 18 tips from our audience – the leaders in logistics – to help you navigate with certainty.

1 COLLECT DATA INSIGHTS.

2021 was a frenetic year for manufacturers, retailers, and distributors specifically related to logistics and freight procurement. And arguably nothing has caused more headaches than truckload capacity. From rising costs, increased tender rejection, poor on-time delivery, and lack of data transparency, it should be no surprise that shippers are struggling to maintain transportation key performance indicators (KPIs). And unfortunately, it doesn't look like things will get any easier in the short- to medium-term in 2022.

With that said, a growing push in the logistics and freight industries around data transparency, coupled with a long-overdue digital transformation that automates old processes, will help ensure shippers have the sophisticated tools necessary to gain real-time visibility into the capacity market, and actionable data to make data-driven decisions.

Jaimie Kowalski
VP, Marketing, Sleek Technologies

2 TAKE BOTH A BIRD'S EYE VIEW AND A GRANULAR LOOK AT DATA.

The pandemic has both shaken and slowed supply chains across industries so dramatically, requiring professionals in the field to take a keener look at every single step of the process, and recognize the important role technology plays in making this possible. It's no longer just you and your supplier—in fact, it's more critical now than ever before to have both a bird's eye view of the entire system, and granular insight into each step along the way.

This kind of visibility is going to be key to shipping and receiving products in a timely fashion—and in a way that remains compliant in 2022. As such, we see innovative and forward-thinking supply chain leaders integrating and investing in software that provides this kind of critical visibility into every component of the supply chain for more timely and streamlined outcomes.

Suzanne Offerman
Senior Proposition Manager
ONESOURCE Global Trade, Thomson Reuters

3 LIQUIDATE & LIMIT YOUR SKUs AND GIVE E-COMMERCE CUSTOMERS VISIBILITY INTO ORDER STATUS.

Warehouse vacancy rates are still historically low. Storage rates have doubled—and in some areas, tripled—over the past year. Because warehouse operations have become so complex, it's highly unlikely that new facilities will be off the ground in time to increase capacity any time soon.

We have record levels of inventory coming into the country and record levels of inventory already here, sitting on warehouse shelves. Some merchants are holding on to inventory that hasn't moved in over a year. At current and projected storage rates, those merchants will soon be upside down in their investments.

Savvy merchants will do three things to overcome this capacity issue. First, they will look to immediately liquidate anything that has been sitting on a shelf eating up margins. Second, they will narrow their SKU catalog to only their fastest-moving SKUs. Finally, a leaner SKU catalog allows merchants to contract a smaller footprint within the warehouse, reducing storage fees and creating flexibility to more easily distribute their inventory for faster time in transit on final-mile deliveries.

Steve Denton
CEO
Ware2Go, a UPS company



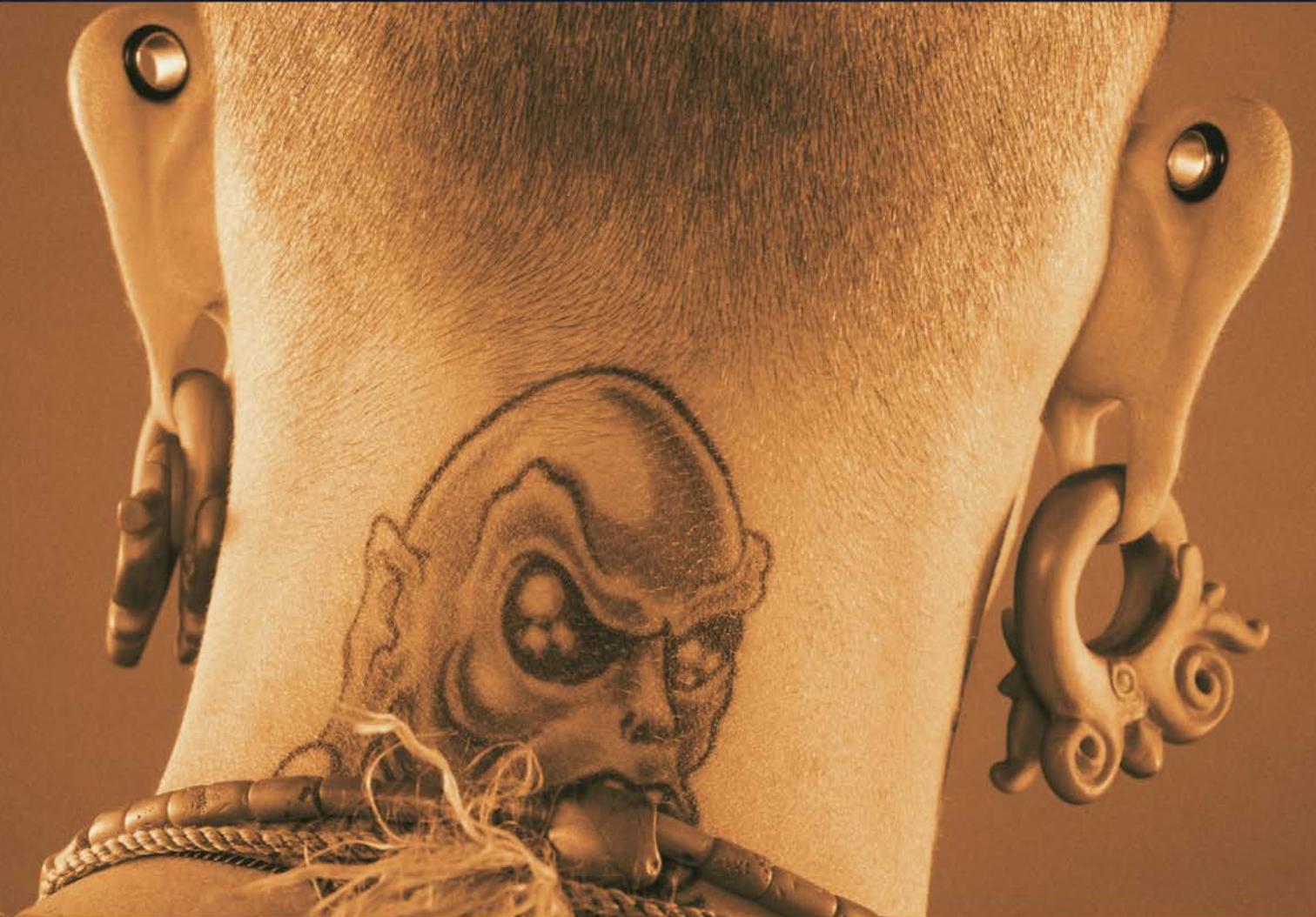
The state of the global supply chain is forever changed—and that's a good thing. Over the past 20 months, retailers, suppliers, and vendors' traditions became obsolete, forcing them to address long-term pain points exasperated by the immense disruptions brought on by the port bottlenecks and shipping delays. In a time when delays have become commonplace, retailers need to take their tail out from between their legs and realize over-communication is key.

Those succeeding are the ones with visibility into their suppliers and warehouses, and the ones who communicate product listings, cart status, and tracking by text and email afterward. Transparency before, during, and after the order process is critical as we enter 2022, and retailers guaranteeing this transformation establish trust with their customers.

Krish Iyer
VP of Industry Relations and Partnerships
Auctane

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4

REFINE REVERSE LOGISTICS PROCESSES.

In recent years, retail and e-commerce industry leaders have focused on optimizing forward supply chains for greater efficiency, lower cost, and better automation. But the reverse supply chain has traditionally been forgotten. This will change significantly in 2022.

As consumer buying habits continue to be robust, so too will product returns—and those returns will take up a larger share of retailers' and e-commerce companies' resources. This will be true for both B2C retailers and B2B companies, whether omnichannel or exclusively e-commerce.

To mitigate this, supply chain leaders will shift their focus to modernizing their reverse logistics—a space that is still largely dependent on spreadsheets and manual tasks.

Technology that delivers consistent workflows, better automation, and clearer visibility into the end-to-end returns process will be essential for retailers and e-commerce companies to keep their heads above the sea of returns. For their customers, a frictionless and responsive returns experience will improve satisfaction and drive loyalty in an era when it's easier than ever to take their wallets elsewhere.

Gaurav Saran
CEO, ReverseLogix

5

SHIFT INVENTORY STRATEGICALLY.

E-commerce strategy will continue to evolve through 2022 in two ways. First, brands and retailers will correct weaknesses identified due to supply chain disruption, such as on-hand inventory levels being too low and single threaded solutions for sourcing or movement. Second, organizations will leverage multiple locations to fulfill orders. With rising transportation costs, brands and retailers will continue to shift inventory closer to their customers, whether that's in stores or through other distribution centers.

This shift reduces time from click to delivery and mitigates the costs. Opening additional locations to hold inventory and ensuring there is an order management system in place to direct orders to those inventory locations to be filled is a major priority for peak season in 2022.

How retailers can plan for disruption in 2022. Given that there have been two years of supply chain disruption, retailers faced a challenging planning environment. 2020 and 2021 may not provide accurate benchmarks for future performance, and 2019 is too dated to support plans.

The best approach will be to create the most accurate estimates possible of demand and required inventory levels and then develop contingency plans to adjust as plans actualize. Things like vendor managed inventory, distribution center inventory, store inventory that can be available to any customer, and additional safety stock for fast movers should help mitigate risk.

Laura Ritchey
COO, Radial



6

LEVERAGE MULTIPLE CHANNELS.

The e-commerce industry is bigger than ever, but customer satisfaction and the movement of goods have never been more of a challenge for product sellers. With trillions of dollars in sales up for the taking, e-commerce is poised for incredible growth in 2022 after an already record-breaking year.

To succeed and compete against retail giants like Amazon, retailers need to diversify their sales channels. To do so, they must invest in adequate technology solutions that allow for seamless omnichannel operations and end-to-end visibility. Consumers now expect to be able to track their orders from start to finish. Providing customers with full transparency into the entire fulfillment process will no longer be an option, but will instead be a requirement.

By investing in modern, innovative technologies, retailers can better serve customers despite ongoing and future supply chain disruptions in the year ahead.

Samuel Parker
Product Evangelist, Cin7

7

APPLY LAST-MILE TECHNOLOGY TO THE MIDDLE MILE.

Middle mile is the new last mile. The most complex aspect of logistics typically is that last mile to the customer's door. But with the rise in e-commerce, the middle mile is becoming just as complicated.

Responding to consumer demand for same-or next-day shipping, businesses now resort to less than truckload (LTL) shipping in the middle mile. LTL has outpaced long-haul trucking in both demand and cost during the past two years, finds U.S. Bureau of Labor Statistics data, and it's likely to continue to rise along with online shopping. LTL will be critical to local fulfillment for companies competing with national brands. Businesses should consider applying last-mile logistics technology to the middle mile to improve efficiency and reduce costs.

Satish Natarajan
Co-founder and CEO, DispatchTrack

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8 SMALL AND MID-SIZED BUSINESSES: PRIORITIZE PARTNERS OVER POACHERS.

COVID-19 spurred growth within e-commerce marketplaces, as many shoppers realized the benefits of the digital marketplace. Social media platforms have only furthered this trend, with TikTok being the latest company to evolve its in-stream shopping tools.

In 2022, small and mid-sized businesses (SMBs) need to take a closer eye to their e-commerce partnerships. While many SMBs have seen the benefits of selling via these third-party platforms, some have also experienced the downside: customer competition. Identifying e-commerce platforms that are partners versus poachers is critical, ensuring that small businesses maintain customer relationships.

Mark Robinson
CEO, UPS Capital

9 CHOOSE YOUR PARTNERS CAREFULLY.

With digitalization revolutionizing logistics and bringing about more efficient processes, information exchange, and visibility, we will see the industry shift into a careful selection of partners based on their technological aptitude and insights. This will strongly be the case for Mexico since new tax regulations are forcing companies to adapt and optimize their processes in order to comply.

Smaller carriers will struggle to comply with requirements when dealing directly with clients without the technical infrastructure of brokers. The accounting team of every logistics company will be put to the test and the ones that manage to leverage efficient and automated processes will avoid the crisis of on-time compliance for every shipment. From that angle, staying competitive will require a stricter filtering system of logistics partners and suppliers.

Anaid Chacón
Head of Product, Nuvocargo



A warehouse is more than just a place to store merchandise—it's an integral partner in your e-commerce strategy and your success as a business. It's critical for brands to undertake a full audit of any potential new partners, and continually audit existing partners to ensure you get the performance you need.

Laura Lough
Fulfillment and Logistics Partnership Director, Digital River

10

OPTIMIZE ASSETS.

As fleet managers re-evaluate their operational strategy, they will look for intuitive asset management technology that offers flexibility, actionable data, and real-time transparency. As we saw in 2021, businesses without the right technology in place have paid dearly with inefficiencies, delays, and errors—resulting in overburdened resources and increased costs.

Looking ahead, asset management optimization through data-driven technology will serve as a critical competitive differentiator in 2022.

Through accelerated adoption of asset management technology, businesses will realize efficient workflows, reduced maintenance and repair costs, updated administrative processes, and end-to-end transparency. Hence, their customers will benefit with critical equipment visibility that improves operational efficiency while reducing out-of-service losses.

In 2022, businesses will also bolster strategic planning efforts to strengthen their supply chain with the goal of “pandemic proofing” their operations. As such, they require asset management technology that leverages data more than ever. This provides a complete and real-time picture of their assets as they move through the supply chain supported by predictive and actionable analytics to efficiently make informed decisions.

With robust EDI and open API tech philosophy, businesses are able to avoid data constraints that are being encountered elsewhere in the supply chain market.

Tom Martucci
Chief Technology Officer
Consolidated Intermodal Technologies (CIT)



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11

REMEMBER PEOPLE UNDERPIN TECHNOLOGY.

Companies that are successful this year will be investors in their people. True performers in the technology field need to be continually challenged and have opportunities to spend a portion of their time learning the new industry technology.

The best companies will encourage their team members to spend 10% of their time on applying cutting-edge technology to the supply chain problem. Innovation is driven by employees already within the organization.

Technology leaders need to actively help team members develop and manage their career planning. Lip service to development and opportunity will cost companies their best technology talent.

Ensuring that the technology staff understands the entire stakeholder model and how to deliver value for clients, whether internal or external, means the business views the results as success. When technology is successful, the business has the tools needed to be successful. Supply chain solutions to the current environment will lean heavily on technology, which begins with people.

**Bart Bullard
VP of Technology & Innovation
Pegasus Logistics Group**

12

MAP YOUR PROCESSES—APPLY SUPPLY CHAIN TAXONOMY.

Manufacturers will look to technology in 2022 for supply chain solutions, but purchasing a fancy tool will not solve problems unless you're prepared. Artificial intelligence is widely misunderstood, with the largest companies just beginning to reap the benefits of machine learning after years of work.

Companies over the next few years need to spend time and money: Increase the quality of data currently stored in their servers; expand the collection of data to sources outside their ERP systems (the Internet of Things), and learn to utilize this information to better understand business facts and behaviors.

Effective system integration across all business functions is complex, and integrating external information—from suppliers and other external data—adds another layer of complexity and risk of capturing inaccurate data. Full utilization of these systems requires a company to develop an accurate and complete business process taxonomy, which is a map of necessary business processes from each department of an organization and supply chain partner. ERP software and consultants bring technology knowledge, but only those performing the functions can explain the knowledge of an organization. This holistic approach to systems integration is critical for technology to help minimize the effect of supply chain disruptions.

Mark Fagan
Global Leader, Manufacturing and Distribution, Moore Global
Partner, Citrin Cooperman



13

INTEGRATE DISPARATE SUPPLY CHAIN TECHNOLOGIES.

Due to the tight labor market, companies will focus on core processes and explore opportunities to outsource non-core functions like returns management and liquidation.

Sustainable business has become table stakes and businesses need to prove results to regulators and consumers.

As we move into 2022, supply chain managers will need to make integration technology a central focus to keep both sustainability and profitability top of mind.

Pandemic-induced supply chain hurdles offer a reboot opportunity for companies. As business leaders are forced to rethink strategy, they can leverage technology to both improve supply chain performance and address sustainable supply chain management practice from product design through to distribution and the end of an asset's life cycle.

Technology delivers a measurable, demonstrable way to prove commitment to environmental protection in all facets of the business.

Brian Johnson
SVP Logistics, Liquidity Services

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14 APPLY THE FREIGHT CONTAINER MODEL TO E-COMMERCE PACKAGING.

The pressure to combat climate change is speeding the development of reusable packaging, and expanding it to new types of supply chains. Optimizing shipping routes to minimize carbon footprints will become common practice.

Sustainable supply chains will build in ways to pick up corrugated material such as cardboard boxes and packing fillers like peanuts, and reuse them as many times as possible.

There's huge untapped potential in applying the freight container model to consumer packaging, where each unit is used countless times, maintained, and packed with products in highly optimized ways. Another model worth looking at is the thermobox that food delivery services use, which could be used as a modular industry standard across verticals.

As public opinion accepts the need to cut emissions, even last-mile consumer deliveries will adopt recycled and reused packing materials, find ways to use less plastic, and match packing boxes more closely to the size of the item.

Circular supply chains will also replace traditional linear operations. It will become accepted practice to offer pickup for items that have reached the end of their lifecycle, invite customers to return empty items for refill, and/or remove as much friction as possible from the process in cases where refill/reuse already exists.

Nike Polvinen
CEO, Logmore

15 CONSIDER RECURRING BUSINESS MODELS TO MITIGATE SUPPLY CHAIN ISSUES.

The supply chain crisis is here to stay, and in order for businesses to survive long enough to see the light at the end of the tunnel, leaders must find ways to be creative and differentiate themselves from the competition.

Companies, especially small businesses, that can expand beyond their core offerings and offer services, which by nature are not supply chain-reliant, will have the upper hand. Additionally, those who look to transform their business to a recurring model, offering subscription-based services and products, will be more resilient to supply chain disruptions with planned purchases and also capture market share left on the table from businesses that folded during the pandemic.

Companies that are able to bill monthly or annually, and become less dependent on day-to-day sales of products and services, will win the supply chain game. Ultimately, businesses that are able to get creative with their offerings and figure out a recurring billing model will be less reliant on a volatile supply chain for cash flow in 2022.

Terence Cummings
Vice President, Small Segment and Business Operations, Sage

16 INCREASE MODES AND SAFETY STOCK.

Nearshoring may not be a long-term solution for many shippers who also have to consider the cost of opening new factories, retooling existing manufacturing sites, and finding a workforce ready to take on the challenge. Given the difficulty of executing this and the potential for further bottlenecks in the future, completely redesigning the supply chain takes more time and adds more complexity than many shippers are able to handle. A more productive approach in the long term is to take more control over the logistics process, look to alternative transportation modes, and hold more inventory.

Paul Pessutti—EVP & CRO, Slync.io

17

UPSKILL YOUR WORKERS.

The high turnover among truck drivers and warehouse workers will continue to strain supply chains in 2022. To fill the gaps left by the shortage and ensure your company is able to continue growing, focus on technology implementation, upskilling, and training.

Warehouses and trucks are becoming more modern and automated, helping companies streamline operations and meet quotas despite high employee turnover. However, new technologies also require companies to focus on training existing employees and upskilling workers across the supply chain to efficiently utilize various solutions.

The focus on upskilling, and how technology like the cloud and automation can streamline distribution and manufacturing, will be huge in 2022. Companies would be smart to start talking about it today.

Joe Scioscia
VP of Sales, VAI



18

DIVERSIFY SOURCING.

Supply chain shortages will continue into 2022 and it will be crucial for companies to find ways to make their supply chains more resilient to keep up with consumer demand. Success and profit will come for companies taking new approaches.

As ports try to keep up with international sourcing challenges, market participants will be expected to put more of an effort into supplier diversification and consider buying elsewhere from companies with greater capabilities. Providing multiple channels from which global companies can access goods and services is how we will see success in supporting rising consumer needs.

Sean Elliott
Chief Technology Officer/Chief Digital Officer
Körber Supply Chain

Looking Ahead

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SHIPPERS STOCK UP

Shopping List

Raw materials

Equipment

Supplies

3PLs

Parts



As the pandemic continues to impact supply chains, retailers go shopping for third-party logistics providers to gain end-to-end control.

By Debra Phillips

For years, retailers have selected third-party logistics (3PL) providers with varying degrees of integration between retail operations and the functions typically outsourced—carrier or mode selection, transportation and delivery to distribution centers or retail outlets, and in recent years, home deliveries. That dynamic is changing as some major retailers choose to own a 3PL, rather than pay one to provide services.

In the fourth quarter of 2021, American Eagle Outfitters (AEO) acquired Quiet Logistics, a company with eight fulfillment centers in six cities where workers and robots fulfill orders. This deal is the second step in AEO's desire for greater control over its supply chain. In May 2021, American Eagle acquired AirTerra, a delivery company.

Another major retail firm, Ashley Furniture, also chose to buy rather than build its own logistics operation when it acquired certain assets of Wilson Logistics. Since 1974, Ashley Furniture has managed a private transportation fleet, creating Ashley Delivery Services (ADS). Today, ADS operates more than 900 tractors and 2,000 trailers—almost equal to the number of assets owned by Wilson Logistics with 800 tractors and 2,000 trailers.

It is unclear how each retailer plans to leverage its newly acquired operation. AEO has been quoted as stating that Quiet Logistics will operate independently, while Ashley Furniture stated in a press release: “We are excited to welcome members of the Wilson team as we continue to service existing customers and expand upon the strong legacy established by Wilson.”

While 3PL acquisitions have been prevalent for some time—XPO Logistics, for example, acquired 17 companies in one year—shippers acquiring 3PLs represents a sea change. These are not larger logistics firms growing through the acquisition of smaller providers, but shippers purchasing their own service providers.

Industry analysts are in a wait-and-see mode, saying it is too early to tell if this is a trend or a temporary reaction to market factors. Similarly, the effectiveness of these new mergers is too soon to be validated.

FROM COURTSHIP TO MARRIAGE

However, supply chain strategic advisors such as Adrian Gonzalez, president of Adelante SCM, recognize several reasons a shipper might choose



American Eagle Outfitters, a global specialty retailer best known for its jeans, recently bought e-commerce fulfillment company Quiet Logistics; it also absorbed e-commerce delivery startup AirTerra in May 2021.

to make the leap from “courtship to marriage”—from partnering with a 3PL to owning one.

Executives are beginning to recognize supply chain management as a key competitive advantage. The AEO and Ashley Furniture acquisitions indicate how company executives have a greater understanding and appreciation of the importance of supply chain management.

“For years, logistics has been viewed as a cost center,” says Gonzalez. “Logisticians have worked to demonstrate to the C-suites of their various companies that logistics is more than a cost center, it is also a strategic differentiator.”

Jay Schottenstein, chief executive of AEO, validates this dynamic in a press release announcing the acquisition. “An important pillar of our strategy is transforming our supply chain to create greater agility, speed, and diversification,” he says.

PROTECTING THE BRAND

The explosive growth of e-commerce makes the delivery experience part of a company’s brand. In today’s business environment, delivery drivers are not only dropping shipments at distribution centers and retail stores, but increasingly in the homes of end consumers.

In these situations, on-time delivery is not all that is required to protect a company’s brand. Even without harm to its contents, a damaged package can create a negative impression with consumers. Attitudes, and even delivery drivers’ attire, have been proven to reflect on the brand whose products the drivers are delivering.

“Supply chain is becoming more of a consumer-facing activity,” says Shekar Natarajan, AEO’s chief supply-chain



To help ease supply chain issues, Ashley Furniture acquired Wilson Logistics. The acquisition is expected to expand Ashley Distribution Services’ brokerage and distribution operations in the western United States.



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Wilson Logistics is a Missouri-based trucking and logistics firm with more than 1,000 trucks. Ashley Furniture Industries affiliate Ashley Pacific Northwest has entered into an agreement to acquire certain assets of Wilson Logistics.

officer. “In that world, you need to have consistency and control over your experience.”

Supply chain managers have faced unprecedented challenges in the past two years of the pandemic. This new reality, according to Gonzalez, has created a desire for greater and more direct control over their supply chains.

“In a word, it is about control,” says

Gonzalez. “Every aspect of the supply chain is being re-evaluated.”

With capacity constraints in most areas of transportation, including ocean freight, supply chain managers are rethinking many aspects of the supply chain as a means of gaining greater control.

“Companies that once outsourced to China or Vietnam are looking at new

locations for sourcing products closer to their operations,” says Gonzalez. “Businesses that once could not get truck capacity at market rates are operating private trucking fleets.”

In this same vein, shippers are no longer content to have visibility to the technology and performance of 3PL providers. They want direct control and the ability to act quickly and with greater flexibility.

WHAT DOES THIS DYNAMIC MEAN FOR 3PLS?

For 3PLs, the benefit of remaining a vital part of a customer’s supply chain is not new. In fact, 3PL providers should follow best practices established years ago—offering technology that a company may have little time or budget to implement, adding scale and scope, and being responsive to their customers’ needs, Gonzalez says.

“The true value that a 3PL brings—whether as a partner or a subsidiary of a retailer—is talent,” he adds. “Knowledge and expertise are key differentiators for 3PLs, now and in the future.” ■

RETAILERS SHOP FOR CONTROL

Shippers acquiring third-party logistics (3PL) providers is part of their broader goal to gain end-to-end supply chain control, according to the Retail Industry Leaders Association (RILA).

“Retailers are working to counteract the uncertainty of the past two years,” says Jessica Dankert, vice president supply chain, RILA. “In addition to owning 3PLs, retailers are also acquiring last-mile delivery providers and operating private trucking fleets.”

Generally, “Companies look at the level of competency within their own organizations and search outside their internal resources to fill any gaps,” Dankert says.

Retailers have significant knowledge about customers and their buying behaviors, including seasonality peaks and valleys, but external aspects of the supply chain are the “great unknown,” she says. These functions include transportation and delivery of products to distribution centers, brick-and-mortar stores, or consumer homes.

A pandemic, capacity tightness across all transportation modes, driver shortages, and congestion on highways and at ports make transportation and delivery even more challenging than in pre-COVID days.

Whether they are buying third-party logistics or transportation providers, operating private fleets, forming more collaborative relationships with strategic partners, or advocating for infrastructure improvements, retailers are taking control of their supply chains.



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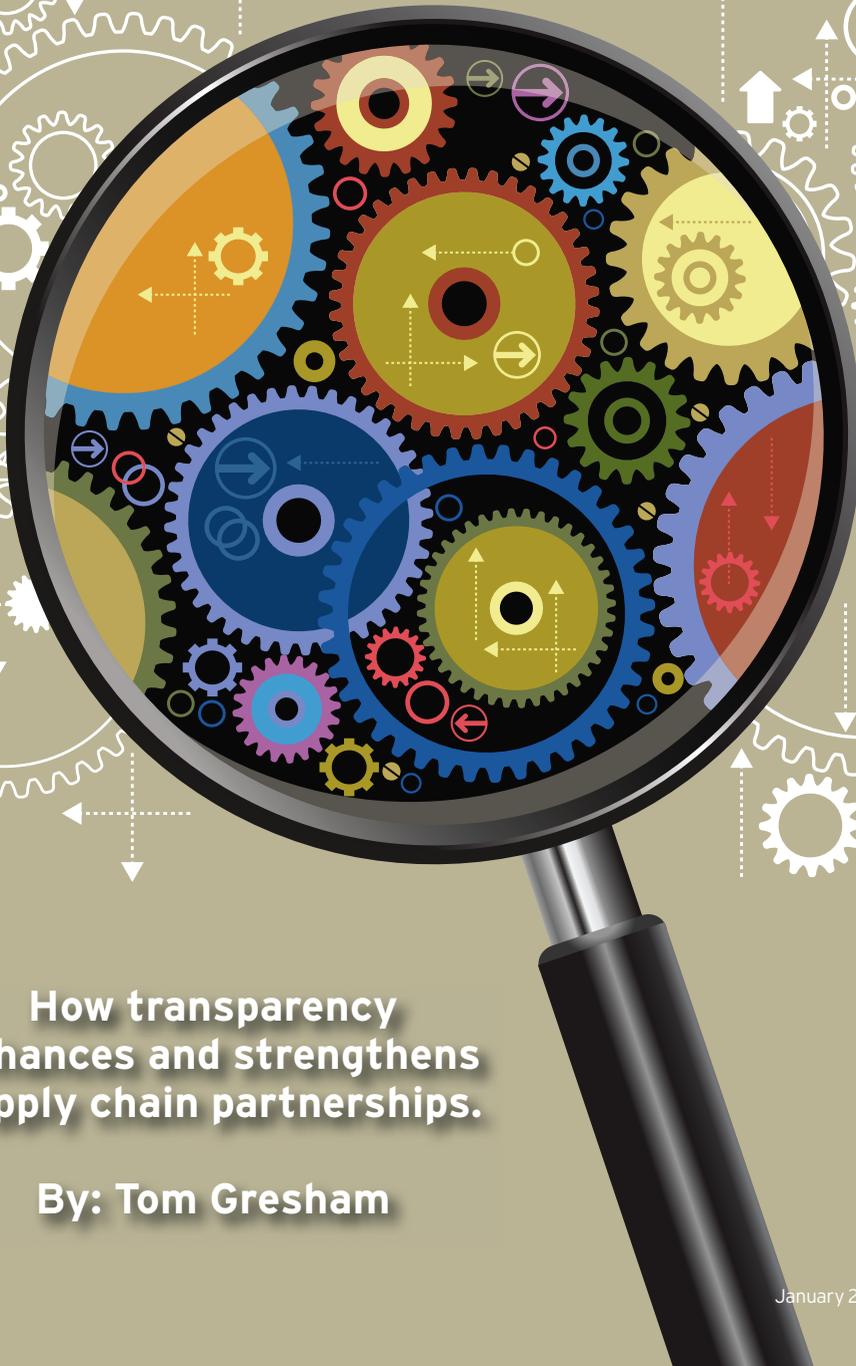
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TRANSPARENCY BUILDS TRUST



**How transparency
enhances and strengthens
supply chain partnerships.**

By: Tom Gresham

The complexity of the supply chain can be daunting. Everything from distribution to data crunching requires dedicated attention that can feel overwhelming unless you have the right tools in place or the right partners to back you up.

On episode 120 of the *Inbound Logistics* podcast (bit.ly/ILMagPodcastPage) Marty Wadle, chief commercial officer and Paul Jensen, senior vp of supply chain solutions for Ruan, an Iowa-based logistics provider, spoke about the importance of transparency and trust in the industry. Here are the highlights of their interview.



Marty Wadle, Chief Commercial Officer, Ruan



Paul Jensen, Senior VP of Supply Chain Solutions, Ruan

IL: How do your partners and customers benefit from working with an integrated solutions provider that offers value-added warehousing, a dedicated fleet, and a managed transportation system?

Wadle: A single integrated solution removes waste and duplication and creates a stronger relationship with the customer. It creates inventory visibility throughout the supply chain—whether it's raw materials inbound, work in process, or finished goods.

If you work with one logistics provider, you see the freight all the way through the process. Visibility across the entire supply chain when you're working with one provider is a huge benefit.

A single, integrated solution also enables rapid response to supply challenges. If we see what's going on in the entire supply chain, we're able to effectively maneuver around a clog, wherever it might be. If we see where we have challenges—at the ports or with containers coming in from overseas—then we can do other things to expedite freight once it hits our borders to get that product to customers more efficiently.

We also look at ways to work with our carrier partners to put them on continuous moves. Shippers today are looking to be a shipper of choice. As we act as an extension of our customer, we do our best to create that shipper of choice view from our carrier perspective: How quickly can we get

carriers in and out of the docks? Can we put two or three different lanes together to create a continuous move, keep that carrier moving, and eliminate their empty miles? That just creates a better solution.

We also look for backhauls for our dedicated resources that may be delivering finished goods for one of our value-added warehouse customers. The trucks can pick up inbound raw materials or other third-party freight so we can keep dedicated assets loaded at all times. That drives continuous improvement and takes waste out of the system for customers.

Jensen: A common theme across the different services that we provide is transparency. On the dedicated fleet side, we're 100% transparent. On the managed transportation side, we're 100% transparent with our customer—from a service, cost, and carrier payment standpoint—and that develops a sense of trust with customers.

We operate best when we're part of our customer's enterprise. We bring the most value when we're included in strategic discussions about the direction of their organization, when our goals and objectives are fundamentally aligned. And that starts from the first day we engage with a customer.

We are all about being as transparent as possible, so that the decision-making on both sides—from our customer's perspective and our perspective—drives toward a common goal.

IL: What are some innovations that Ruan has implemented where you really see that value-add in play?

Jensen: Every implementation of a solution begins with the needs of the customer. Whether that's a sophisticated racking system or a complex pick-to-light, multifaceted kitting operation that directly feeds manufacturing lines, we build solutions that meet a specific customer objective.

That includes both finished goods on the outbound side as well as inbound raw materials through a consolidation center. We bring product from across the country into a single consolidation point for splitting, cross docking, reconfiguring, staging, and shipping to various manufacturing sites.

It starts with what our customer's needs are. As we get into a customer's business, and we start to learn what their supply chain chokepoints are, we can help them design a better solution that feeds through that distribution process. We understand what it takes to run assets, what it takes to manage carrier relationships, and what it takes to run distribution and finished goods shipping.

IL: When shippers look for a warehouse partner, a lot of thought has to go into that decision. What are some of the things shippers might overlook when they evaluate a new partner?

Jensen: As proposal systems and technology have gotten better, the nuts and bolts of how to share requirements



Dedicated contract transportation solutions allow companies to focus on their core competencies without having to own or operate a private fleet.

has gotten easier over the past five or 10 years. What hasn't gotten easier is understanding who your partner is going to be—getting to know them. And not just the services that they provide, but the type of organization they want to be. The way they behave, the way they interact with their customers, and cultural alignment is often overlooked. You need the ability to meet each other's needs in a transparent way and develop a sense of trust.

When you go out and try to find the right partner, understanding who they are and what they want to be is just as important as pricing and capabilities because your needs will evolve.

I saw this on the shipper side when I worked for a seed manufacturer. In the five years I was there, our business in that industry changed dramatically with complexities that were injected into the manufacturing process, which resulted in much different distribution. Having a partner who could work through that with us would have been a lot easier than trying to figure it out on our own. That's the kind of partner we want to be.

I'd also caution folks as they look to build a distribution network, build out a regional distribution concept, or just take distribution out of manufacturing to allow more space to create material. Don't shortchange your long-term plan. Often, in the interest of saving a few dollars on the front end, companies want to buy into a smaller facility that meets today's needs, but it won't meet their

needs in three to five years. Take a hard look at what your long-term plan is and build for who you want to be—not for who you are.

Although it's more expensive in the near term, it's a lot less expensive in the long term to be in the right facility, as opposed to having to make changes along the way as you implement your growth strategy.

Wadle: We perform site analysis for potential customers. One thing that you look at is identifying the right location for your inbound raw materials and for

your outbound finished goods locations, to reduce that transportation spend.

Once you've picked that location, you also want to look at where you will draw employees from to fill that warehouse. If you're in a spot where you don't have access to enough team members, you will be challenged.

We work with our customer to make sure that not only do we find the right location from a transportation standpoint, but also decide if it is the right location for staffing inside the facility. Then we work closely on the configuration.

If we know that a customer's growth projects that they will need 450,000 square feet in four years, we don't want to get them into a building that's 250,000 now and then we've got a year to figure out how to add to it or move into another location down the road. We work with the customer to configure the portion of that building they need with the ability to grow into the balance of it.

In the meantime, we'll work with other partners, other shippers, to bring in third-party freight to defray the cost of that facility so customers can take the full building and be able to grow into it eventually. ■



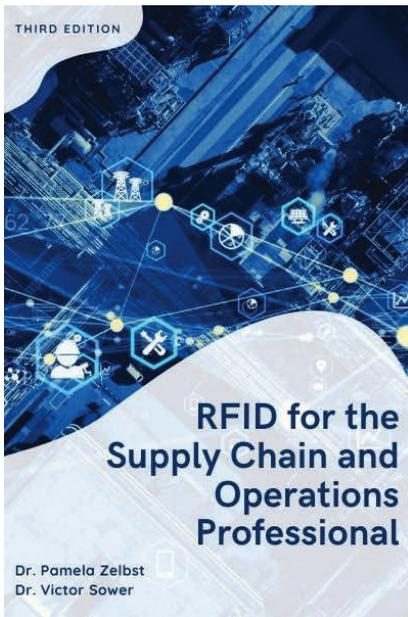
Ruan offers versatile warehouse space and customized solutions tailored to partners' requirements.

WINTER READING GUIDE

2022

Get cozy and boost your logistics knowledge. These latest resources cover everything from textile supply chain tactics





RFID FOR THE SUPPLY CHAIN AND OPERATIONS PROFESSIONAL

Third Edition

BY DR. PAMELA ZELBST AND DR. VICTOR SOWER

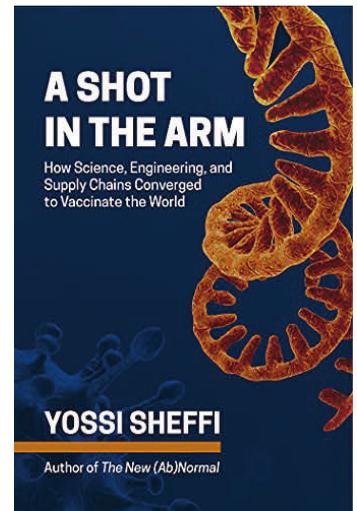
Beginners can use this guide to develop a basic understanding of RFID technology with specific usage examples across several industries. This book covers implementation as well as how to pair RFID with other technologies, such as global positioning systems, enterprise resource planning, the Industrial Internet of Things, and robotics. This latest edition also discusses recent advancements.

A SHOT IN THE ARM

How Science, Engineering, and Supply Chains Converged to Vaccinate the World

BY YOSSI SHEFFI

A weapon is useless without the means to manufacture and deliver it. From scientific advancements to mass distribution, the task of delivering COVID-19 vaccines worldwide is a story of innovation and teamwork as supply chain experts, scientists, manufacturers, and governments collaborated on the greatest product launch in history. This book highlights the vital lessons learned for combating deadly diseases and other global supply chain challenges.

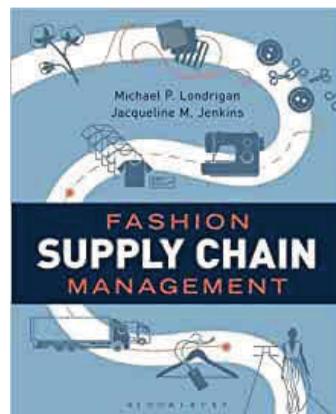


PEOPLE SOLVE PROBLEMS

The Power of Every Person, Every Day, Every Problem

BY JAMIE FLINCHBAUGH

Businesses typically provide new tools and training to improve their team's problem-solving efforts, but that may not be the best strategy. This book provides tactical guidance for supply chain leaders, including why behaviors and principles are the real key to success and why curiosity and initiative have a much greater impact than putting information in the right box.

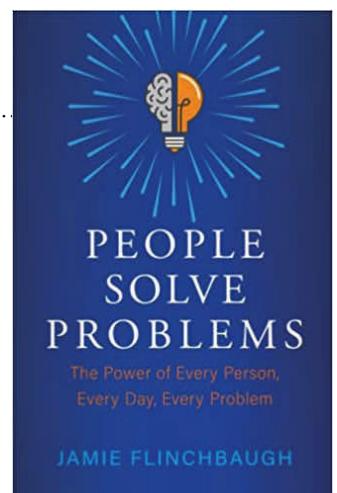


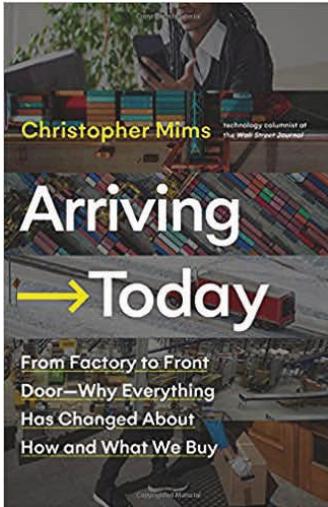
FASHION SUPPLY CHAIN MANAGEMENT

BY MICHAEL P. LONDRIGAN AND JACQUELINE M. JENKINS

Get a comprehensive understanding of the entire apparel and textile supply chain, spanning raw materials to retailers to end consumers. Featuring industry interviews and case studies, this book reviews how the supply chain relates to

specific roles within a fashion brand, from designer to merchandiser. "Notes from the field" sidebars provide firsthand accounts of challenges and opportunities from the authors' experience in the fashion industry.





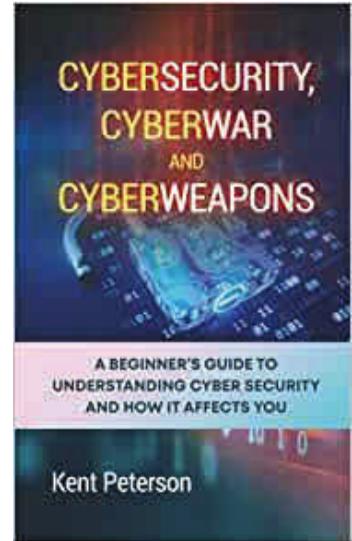
ARRIVING TODAY

From Factory to Front Door—Why Everything Has Changed About How and What We Buy

BY CHRISTOPHER MIMS

As consumer demand grows, new technologies transform the workforce and how goods are transported. Take a look behind the scenes into the world's busiest port, the cabin of an 18-wheeler, and Amazon's automated warehouses to uncover

how the promise of “arriving today” is fulfilled through an intricate dance between humans and machines.



CYBERSECURITY, CYBERWAR AND CYBERWEAPONS

A Beginner's Guide to Understanding Cybersecurity

BY KENT PETERSON

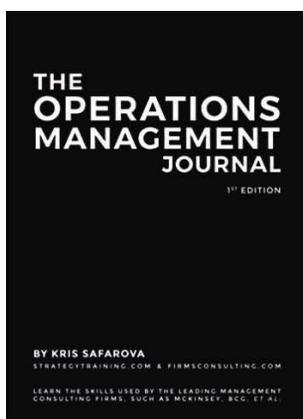
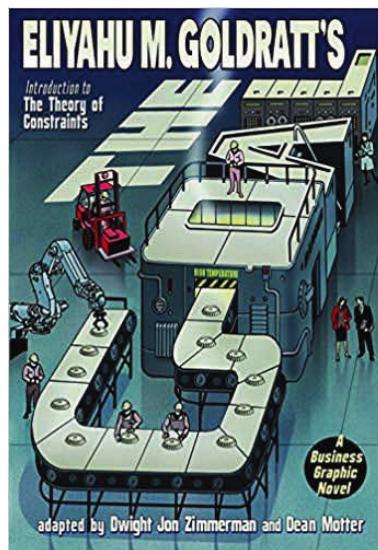
Supply chain operations, national security, and our daily lives depend on a resilient internet, but cyberspace and its underlying infrastructure are exposed to various cyber threats and hazards. Supply chain leaders can use this book to learn the basics of cybersecurity and how to recover from a breach.

THE GOAL

A Business Graphic Novel

ADAPTED BY DWIGHT JON ZIMMERMAN AND DEAN MOTTER

A plant manager is given 90 days to save his failing factory, and if he doesn't improve his supply chain's performance, corporate headquarters will close down the plant. Based on Eliyahu M. Goldratt's *The Theory of Constraints*, this graphic novel illustrates how the manager breaks out of conventional thinking and works with his team to find solutions.



THE OPERATIONS MANAGEMENT JOURNAL

FIRST EDITION

BY KRIS SAFAROVA

A step-by-step visual example of an operations management plan, this guide helps supply chain leaders in any organization understand how to start and execute a plan via to-do lists, self-assessments, and strategy calendars. Learn the habits of the highest-performing operations strategy thinkers and how to be a balanced, successful professional with a strong ethical compass.

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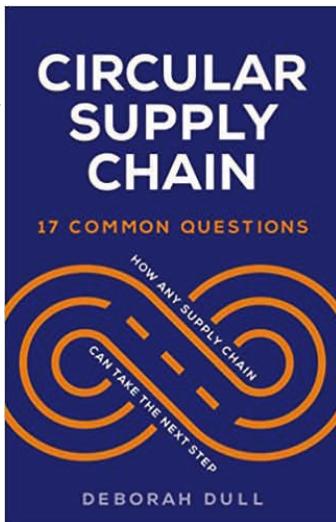
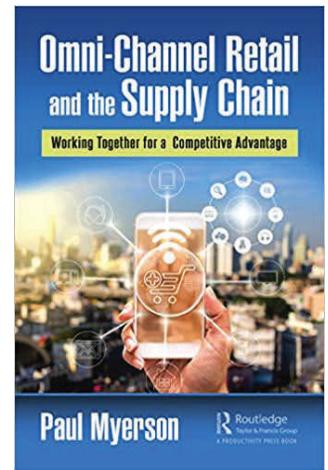
OMNI-CHANNEL RETAIL AND THE SUPPLY CHAIN

Working Together for a Competitive Advantage

BY PAUL MYERSON

Emerging platforms and technologies offer a world of new ways for consumers to buy online and choose from various delivery options. This book describes the impact of omnichannel marketing on the supply chain and logistics functions. It is intended to help management meet the needs of today's ever-

changing landscape, and to anticipate what may be required in the future to achieve superior customer service, profitability, and a competitive advantage.



CIRCULAR SUPPLY CHAIN: 17 COMMON QUESTIONS

How Any Supply Chain Can Take the Next Step

BY DEBORAH DULL

Every material in today's economy is there because supply chain professionals planned, made, and moved it to where it is now. The circular economy can add even more value to those materials. The book's common questions and their answers home in on what circularity means for the profession, and spark necessary conversations to keep supply chains across industries and around the world running.

WINNING IN THE DIGITAL AGE

Building Blocks of a Successful Transformation Journey

BY NITIN SETH

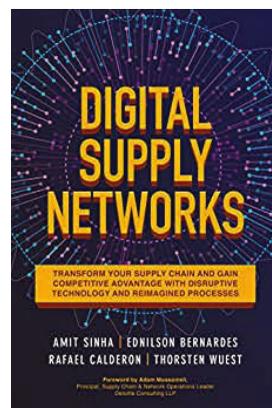
What does it take for supply chain leaders to win in the digital age? Just a complete overhaul of their business model and organizational design. Such a large and complex change is not easy to manage. This book answers key questions on how to best leverage artificial intelligence and the cloud, how company cultures need to change, the new skills leaders and young professionals need to build, and more.



DIGITAL SUPPLY NETWORKS

Transform Your Supply Chain and Gain Competitive Advantage with Disruptive Technology and Reimagined Processes

BY AMIT SINHA, EDNILSON BERNARDES, RAFAEL CALDERON, AND THORSTEN WUEST



Drawing from real-world experience and academic research, the authors provide an in-depth account of the limitations of traditional supply chains and the underlying potential of digitally enabled supply flows. This guide leads supply chain professionals through the process of building supply networks, increasing revenue, reimagining business models, and providing added value to customers, stakeholders, and society.

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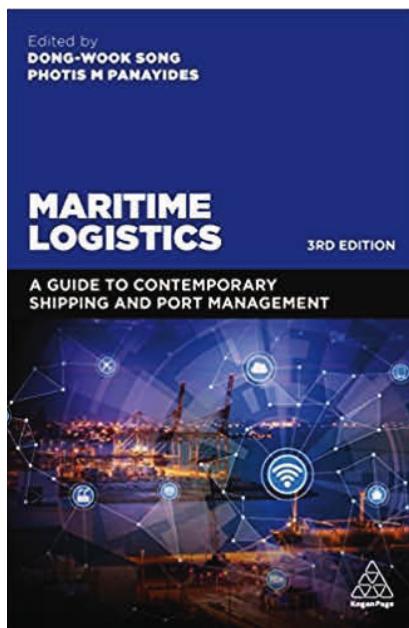
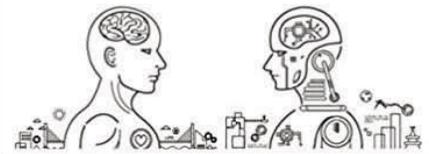
PREDICTIVE ANALYTICS FOR BUSINESS FORECASTING & PLANNING

BY J. ERIC WILSON, CPF

Businesses produce data in ever-increasing volumes, making predictive analytics a competitive advantage. Offering an overview of the latest demand planning, business forecasting, and predictive analytics applications, this book serves as a guide for supply chain professionals who want to improve their skills and learn how their teams can leverage data to drive business value.

PREDICTIVE ANALYTICS FOR BUSINESS FORECASTING & PLANNING

BY J. ERIC WILSON, CPF



MARITIME LOGISTICS: A GUIDE TO CONTEMPORARY SHIPPING AND PORT MANAGEMENT

Third Edition

BY DONG-WOOK SONG AND PHOTIS M. PANAYIDES

Ocean freight remains the most common form of transportation for goods globally. Learn the core theories and latest research in maritime logistics, as well as how the field operates and contributes to global supply chains. The third edition offers new content on maintenance optimization, supply chain integration, and port performance.

FOOD SUPPLY CHAIN MANAGEMENT: BUILDING A SUSTAINABLE FUTURE

Second Edition

BY MADELEINE PULLMAN AND ZHAOHUI WU

This updated edition provides a comprehensive approach to food supply chain management, plus a global perspective and new topics for academic and non-academic readers, such as cold chain, last-mile logistics, traceability in the food supply chain, and the implications of global trade and climate change. Case studies, quick facts, and mini-cases examine the farm-to-table movement, sustainable co-ops, and more.



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TAKING STOCK OF INVENTORY MANAGEMENT

Empty store shelves during the pandemic drove many companies to new forecasting tools, added 3PL services, and increased collaboration to inform inventory management.

By Debra Phillips

One of the most visible impacts of the pandemic on the supply chain was inventory management. Empty store shelves, essential item shortages, and limits on the number of certain products a customer could buy at some retail stores impacted individuals on a personal level. And supply chain managers struggled to fulfill customer demand that was very different from its forecast inventory planning.

“No longer can companies rely primarily on historical data and formulas to accurately forecast inventory,” says Steve Banker, vice president of supply chain management, ARC Advisory Group. The silver lining, however, is the adoption of demand sensing practices to inform inventory forecasting.

“Companies that made use of planning systems combined with demand sensing—the use of multiple, real-time signals, like sales in a particular store or shipments from a retailer’s warehouses to their stores and machine learning—had significantly fewer errors in forecasting during the early days of COVID,” Banker explains.

Two years later, demand sensing is part of many inventory management systems. Another best practice that remains today is evaluating stock levels across an entire network, rather than site to site.

It has become important to evaluate suppliers and customers individually. “Companies are often willing to pay more for transportation to meet the needs of retailers that demand 100% compliance on-time and in-full deliveries,” Banker says. “Failure to do so can result in hefty fines for the supplier. Other, less critical shipments can be handled in more economical ways.”

Having the systems and data to make these informed decisions is critical.

COST-EFFECTIVE TRANSPORTATION OPTIONS

Beyond the planning stages of inventory management, companies also face challenges on the execution side due to volatility in the transportation market, virtually across all modes.

“Inventory management is very different today than two years ago,” says Michael Lin, director of supply chain, Musco Family Olive Company. “Companies are increasing their comfort stock to offset the uncertainty of a pandemic.”

AFS, a third-party logistics (3PL) provider, can attest to this trend across many of its shipper customers. “Pre-COVID, the strong trend was toward just-in-time and lean inventory levels to reduce obsolescence and free up working

capital,” says Andy Dyer, president of transportation management for AFS. “These strategies are highly dependent upon reliable transportation networks.

“Recent transportation network disruption has prompted companies to think much more strongly about assurance of supply while being mindful of carrying costs,” he adds.

“One of the primary issues is port capacity,” notes Lin. “Delays at West Coast ports are resulting in companies looking at other ways to get imported inventory into the United States. This includes using alternative ports, like Jacksonville, Florida, or other ports on the East Coast, resulting in more intermodal shipments.”

It may appear to be counterintuitive, but in today’s environment, “It can be more cost-effective to receive goods at an East Coast port and deliver it over-the-road in California when you factor in lost sales due to stockouts,” Lin says.

For some companies, such as Musco, the solution to addressing a volatile transportation environment is to partner with a 3PL provider with scale and expertise in transportation.

“In order to manage inventory, you



To manage inventory forecasting and demand, many companies turn to technology. SnapFulfill, for example, offers a warehouse management solution to companies in a range of industries.



Strategically located in central California, Musco Family Olive Company, a leading olive processing plant and ripe-olive packer, partners with a 3PL to handle product transportation.

must have the capacity to transport it and have visibility,” says Lin. “In this environment, it is important to leverage every piece of information available.

“There are many systems that support historical ERP planning, production, and forecasting,” he adds. “The challenge is having visibility once a product is on an ocean carrier or multi-modal train.

“While trucking companies offer some degree of visibility regarding where a truck is and the estimated time of delivery, they still do not make it easy to determine if your shipment is the first for delivery or the last, based on how the trailer is loaded,” Lin notes. “The situation is even more challenging with ocean carriers.

“We count on AFS to handle our transportation,” he says. “While we manage inventory levels based on factors such as increased demand for certain products, AFS provides expertise to determine the most efficient and cost-effective ways for us to move products. They evaluate modes and model the best way for us to serve our customers.”

3PLs DEVISE NEW SOLUTIONS

Transportation management is only one example of how 3PLs help companies adapt to a supply chain that is still highly disrupted. “3PLs enable

inventory efficiencies through visibility, reliability, and sense-and-respond technologies,” Dyer says. “Knowing what you have, where, with confidence that it can move where you need it, reduces the need for high inventory stock levels.”

Additionally, 3PLs like AFS have developed supply chain assurance programs that allow customers to have access to nearby inventory without the high working capital requirements. As companies look at sourcing products from different locations, often a necessity due to transportation challenges, a change of this magnitude

can take time to effect and realize a return on investment (ROI) easily or without a price tag.

The AFS service offers financing and places inventory near customers’ points of consumption or distribution. The 3PL purchases the inventory from the supplier, thereby accelerating the supplier’s cash position and, according to Dyer, “providing mutual value to them.”

The customer (buyer) pulls the inventory through AFS as needed, “and the customer enjoys assurance of supply without deploying increased levels of working capital,” he says.

FINDING THE SILVER LINING

If supply chain managers are looking for the silver lining after more than two years of operating during a pandemic, there are several—from new forecasting tools and practices to additional 3PL service options to greater supply chain resiliency and enhanced collaboration.

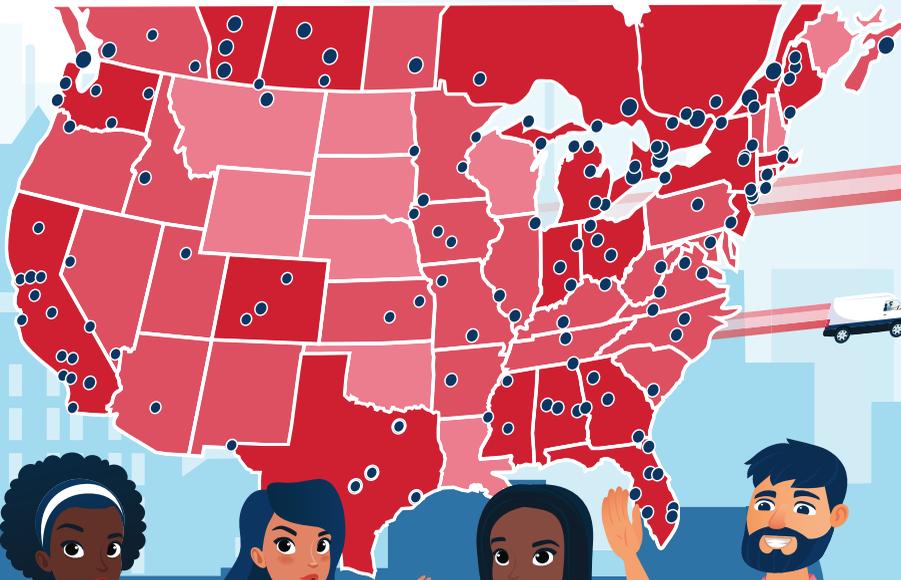
“During these uncertain times, we have become much more collaborative with our providers and customers,” says Lin. “We all want our products to reach the end user in the most efficient and cost-effective way, without disappointing our customers or losing sales.

“While some of these changes have been the result of necessity,” he says, “greater collaboration throughout the supply chain is a positive move for all parties.” ■



Third-party logistics provider AFS develops supply chain assurance programs for customers such as Musco Family Olive Company. The programs provide access to nearby inventory without high working capital requirements.

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DCSOLUTIONS

I, Robotics

THE CUSTOMER

As an independent automotive tool and equipment specialist, Integrated Supply Network (ISN) serves wholesalers and distributors throughout North America and Europe. Headquartered in Lakeland, Florida, it operates 13 strategically located distribution centers—nine in the United States, three in Canada, and one in the UK—and has grown to include approximately 655 employees since being established in 1985.

THE PROVIDERS

Global technology group Körber provides a broad range of supply chain solutions, including robotics. Körber frequently collaborates with Locus Robotics, a robotic process automation company, and in doing so gives its WMS customers an opportunity to enhance their operations.

by June Allan Corrigan

Productivity and employee job satisfaction are on the rise at Integrated Supply Network (ISN), an independent automotive tool and equipment specialist serving wholesalers and distributors throughout North America and Europe. Autonomous mobile robots (AMRs) have rapidly become useful additions at the ISN distribution centers where they've been deployed.

The size of a warehouse and its throughput can overwhelm and physically tax the average worker on any given day. That was certainly the case at ISN in late 2019 and early 2020.

“We faced challenges at our largest facility in the Atlanta area,” says Theron Neese, chief supply chain officer at ISN. “We had congestion in the aisles, especially late in the day.”

The 240,000-square-foot Buford, Georgia, facility has a 3:30 p.m. cut-off time with a need to get product out the door by 6 p.m. “It became a real crunch time,” Neese says. “About all we could get through one of our hub facilities in a shift was 7,000 lines without taking drastic measures. So, we started to look around for some options.”

In a fortuitous turn of events, Neese came across Locus Robotics, which happened to already have a good working relationship with Körber, ISN's warehouse management system (WMS) provider.

“Körber's partnership with Locus facilitated and expedited the process,”

Neese says. “Otherwise, we would have had to do all the WMS IT development in-house. Körber was able to help us because they'd already done a lot of that coding for other companies.”

UP AND RUNNING

It took only 90 days to implement the solution at ISN's Atlanta location. Once autonomous mobile robots were deployed, picking quality, accuracy, and speed significantly improved—from 30 to 110 picks per hour, equating to a 266% productivity increase.

The AMRs have proven to be a game-changer for warehouse employees as well. “When we deploy Locus, we help companies untether the worker from the work itself,” says John Santagate, vice president, robotics, for Körber Supply Chain Software. Pickers who once had to do a serpentine pick through a vast warehouse pushing an increasingly heavy cart can now pick to any robot they encounter.

Everything an employee needs

information-wise is on a screen embedded in the robot. Once they fulfill one robot's order and place the pick in its tote, pickers can move on to another robot. Short walks between robots, cart free, reduce physical stress.

"Robots constantly move through the warehouse, going to wherever the merchandise is that needs to be picked," explains Karen Leavitt, chief marketing officer at Locus Robotics. By working collaboratively with humans, AMRs dramatically lower a company's cost per pick.

"Creating an environment that reduces worker fatigue also increases worker retention because employees are much happier," Leavitt adds.

INCREASING THROUGHPUT

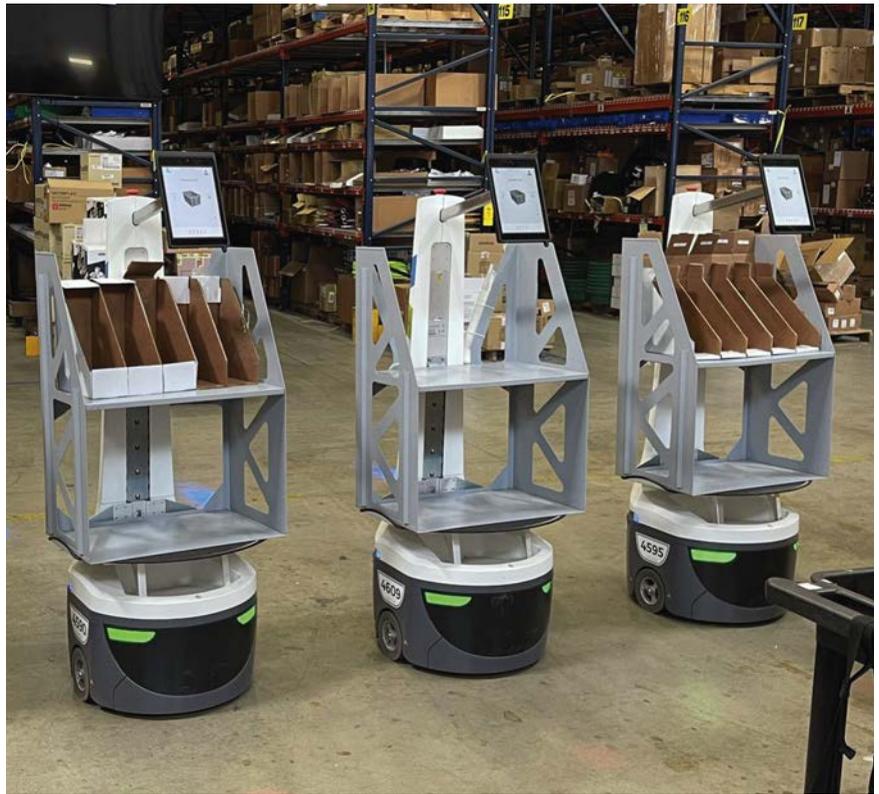
A six-year-old company, Locus Robotics contracts with about 200 fulfillment warehouse sites that run the gamut of retailers handling direct to consumer, store replenishment, or omnichannel fulfillment. Locus works with healthcare manufacturers fulfilling medical devices or pharmaceuticals, automotive part suppliers such as ISN, and others.

"The goal is to increase throughput in environments that have traditionally relied on human labor as their primary raw material," says Leavitt.

In addition to streamlining operations, ISN views AMRs as a way to address labor challenges. "We're experiencing high turnover just like everyone else in the industry right now," says Neese. "However, this approach does not replace anyone's job. It's just supplementing, which allows us to continue operations long term with fewer humans since it's currently very difficult to hire people."

Attrition rate aside, employees who continue to work at ISN have earned higher wages in the wake of AMR integration. "ISN gained labor-related savings because they didn't need as many people to fulfill the same amount of work," says Santagate. "However, they didn't let anybody go. They just moved people to other workflows.

"And to help improve employee retention, ISN took some of the savings they realized and increased warehouse worker wages," he adds.



LocusBots minimize unproductive worker walking time and eliminate carrying or pushing carts by autonomously traveling to worker and pick locations.

CASEBOOK STUDY

Ifs, Ands, and Bots

THE CHALLENGE

Integrated Supply Network (ISN), an independent automotive tool and equipment specialist serving wholesalers and distributors throughout North America and Europe, was looking for a way to be more effective in their warehouse picking. They were experiencing both labor and peak hour challenges.

THE SOLUTION

By deploying autonomous mobile robots (AMRs) across their Atlanta area warehouse location, ISN was able to increase productivity 266% and boost employee satisfaction considerably as well. The bots came courtesy of a 10-year-plus association with global technology giant Körber, their WMS provider who, in turn, frequently partners with Locus Robotics, a robotic process automation company.

THE RESULTS

AMRs have enabled ISN to keep pace with the 15 to 20% annual growth the company has been experiencing over the past few years. Two of ISN's nine U.S. warehouse locations now use robots, with a third on the cusp and at least two others in line to join.

NEXT STEPS

ISN is working to develop the coding for putaway so they can derive the benefit of bots when they're not being utilized during peak throughput hours.



Automotive tool and equipment company ISN significantly improved picking quality, accuracy, and speed from 30 to 110 picks per hour—a productivity increase of 266%—by implementing AMR solution from Körber and Locus Robotics.

It didn't take long for any of the parties involved—Körber, Locus, or ISN—to assess the positive impact robots would have on the automotive tool and equipment specialist and its distribution centers. "Doing the analytics, it was easy to determine AMRs would be a great fit," says Santagate. "Return on investment occurred within months."

UNDENIABLE SCALABILITY

Locus Robotics is a subscription-based business; customers pay a subscription fee for each robot. "As needs change, we can adapt quickly and add or subtract robots to handle their requirements," says Leavitt. Scalability is undeniable.

Robots are responsible for verifying the correct item has been picked, making sure everything is cross checked and gets to the right dispatch or packing station.

"We also constantly optimize the fulfillment routes," adds Leavitt. "When we team up with a company like Körber, which makes the WMS software, it's an active partnership on both sides."

Robot software (robots are approximately 80% software) is always interacting with WMS software. The great

handoffs constantly occurring between AMRs and Körber software maximize warehouse throughput, according to Leavitt.

It has been determined that robots suit five of ISN's nine U.S.-based distribution centers. "Square footage and volume determine where robots are best deployed," says Neese. Successful integration at the company's Atlanta area facility has been quickly followed by deployment at their Fresno warehouse.

At press time, ISN's Indianapolis warehouse was slated to be equipped by the end of 2021 or in early 2022 with New Jersey and Dallas soon to follow. "Our facilities in the UK and in Canada aren't on the list currently, but we do have them in the works," Neese says.

ISN has grown exponentially over the past few years. Small package shipments increased from 50% pre-pandemic to 80%, which explains fulfillment strains. Neese attributes ISN's 15 to 20% annual growth to its move to a two-hub strategy.

"We went to a West and East Coast hub strategy so all of our A, B, and D SKUs are stocked in those two facilities," he says.

Neese credits part of the business

increase at the Atlanta facility to consolidating all slower moving products into those two hubs and not trying to stock everything everywhere.

Neese considers the 266% productivity increase at ISN's Atlanta location to be a good metric of all AMR integration has and can achieve. As pick rates soared, it led to a need for other jobs to be created in the warehouse.

"Improved throughput means we have to do things differently—for instance, there has been a change in how we build boxes and we've laid our manifest area out in a new way," he says. "We've moved people to other tasks. Any time you're able to increase human productivity, it's just fantastic."

ALL CAN BENEFIT

"In today's labor environments, bots are a great solution," Neese says. "They're far easier to get up and running than many other solutions that require a lot of 'moving the furniture.' Bots are a much lighter implementation but provide the same or a similar impact."

"This productivity solution is something other companies need to take into consideration," Neese suggests. ■

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THE PROVIDER:

ShippersEdge, a Burnsville, Minnesota-based provider of multi-carrier shipping software and transportation management systems. The company also offers API and EDI management and custom programming.

by *Karen Kroll*

OVOL USA is one of the world's largest suppliers of paper, pulp, and specialty substrates. Eric Krizay, the company's vice president of corporate logistics, had been searching for a transportation management system (TMS) that would meet the unique needs of all the company's divisions. At the same time, he needed a solution that was straightforward to implement and use.

While many of OVOL USA's divisions are in the paper business, they have "different requirements, different needs, different types of products, and different customers," Krizay says.

The divisions historically operated independently. Each generated its own profit-and-loss statement and handled its own purchasing and transportation, among other functions. This made achieving visibility across the enterprise, as well as economies of scale, more difficult.

To start to remedy this, Krizay and his colleagues developed a central logistics division that was able to leverage OVOL's buying power. The new structure succeeded in both lowering costs and freeing employees to spend more time building their businesses, rather than on administrative tasks.

Finding a single TMS solution that would meet the needs of all divisions still proved challenging, however. In the approximately 10 years Krizay has been with OVOL USA, they've gone through three TMS solutions.

"It has been like Goldilocks and the three bears," he says.

The first solution was too small and handled only domestic shipments. While the second was backed by one of the industry's largest vendors, it was not user friendly. Employees had to navigate multiple clicks to complete many processes. The solution also was costly to operate and update; simply making a new bill of lading could run into thousands of dollars, Krizay says.

Customer service also left much to be desired. Changing the way a function worked "took an act of Congress," Krizay says.

THE SEARCH IS ON

Krizay looked for a solution that would offer visibility within the United States and overseas, and for shipments moving across ocean and air. It also needed to support all OVOL divisions, helping them operate as efficiently as possible.

After issuing a request for proposal, Krizay connected with about 20 companies. An arduous process, he notes, but implementing a TMS requires a substantial outlay of money and time, making thorough due diligence essential.

Many vendors claimed their solutions would handle the functions critical to OVOL's operations. Yet when Krizay probed deeper—say, asking them to demonstrate the steps needed to complete a process—it became clear many couldn't, at least not efficiently.

For instance, Krizay asked about the steps required to change a shipment from one carrier to another. In general, when this occurs, the first carrier needs to be notified not to make a pickup, so OVOL isn't incorrectly charged, and then the shipment needs to be moved to the correct carrier.

"It's a real-world challenge and happens all the time," he says. Yet some systems required an employee to call the original carrier, cancel the shipment, and then rebook it with the second carrier—cutting little time from the existing process.

Continuing his research, Krizay came across ShippersEdge, a Burnsville, Minnesota-based provider of multi-carrier shipping software and transportation management systems. The company met the qualifications outlined within OVOL's RFP, and Krizay added them to the list.

"When I was done with the first phone call, I knew where I wanted to go," he says. Ultimately, OVOL did choose ShippersEdge, and the two companies have been working together for several years.

GETTING AN EDGE

ShippersEdge provides a suite of logistics tools, including a Tier 1 TMS that's the backbone of its offerings, says Joe Taylor, director of engineering with the company. The company generally works with mid-size to large companies across multiple verticals. Over the past few years, it has focused its solutions on providing end-to-end visibility and management of logistics, including inbound freight, ocean freight, last mile, and everything in between.

A main reason OVOL chose ShippersEdge was the system's user-friendliness. For instance, moving a shipment from one carrier to another



A TMS that is easy to use and meets the unique needs of all the company's divisions helps OVOL USA, a large supplier of paper, pulp, and specialty substrates, deliver timely, cost-efficient supply chain solutions to customers worldwide.

CASEBOOK STUDY

Good on Paper

THE CHALLENGE:

To find a transportation management system (TMS) that would work for OVOL USA's multiple divisions with varying needs, while providing visibility across the entire company. The installation and user interface also needed to be straightforward.

THE SOLUTION:

Partner with ShippersEdge, which provides a Tier 1 TMS, as well as quality customer service.

THE RESULTS:

Management now has visibility across the organization's supply chain, while multiple processes have been automated and streamlined, saving time and money. This includes the payment of carrier bills and the routing of trucks and drivers, while following specific business rules. In addition, the solution was less expensive than what OVOL had used previously.

NEXT STEPS:

OVOL USA plans to implement ShippersEdge's dock scheduler in several locations in Texas. With this and the addition of large screens within the warehouses, employees will see the timing of inbound and outbound deliveries and can have the right products and documents ready as they're needed.

was as simple as clicking a button that says “remove carrier.” That action notifies the carrier’s application programming interface (API) of the cancellation, and the API sends a return message saying that the carrier received the cancellation notice. Then, an employee enters the new carrier, and the system handles and sends the paperwork. “It takes literally two minutes,” Krizay says.

Krizay also confirmed the system could manage, among other functions, international tracking and foreign currencies. He reviewed the reports the system could provide and checked whether OVOL could create its own reports. For instance, a multi-divisional report that shows orders and revenue by the day, week, and month, as well as month-over-month and year-over-year, has proved valuable.

Implementation of ShippersEdge occurred virtually and was the easiest of all three systems, Krizay says. Just several weeks passed from the time the two companies signed the contract until they’d completed some necessary system-building and integration.

One of ShippersEdge’s core values is building software that’s intuitive, Taylor says. To that end, it brings in fifth graders—usually employees’ children—to experiment with its solutions when designing or modifying the user interface.

He and his colleagues observe the kids as they operate the software to determine if almost everyone can figure out how to, for instance, move a shipment. If it’s clear they can’t, the company adjusts the solution. This process has helped everyone learn how to make software that’s accessible and intuitive.

One example: when designing the initial software, it became clear the kids were struggling to figure out how to return to the start button after they’d created a shipment. That prompted developers to focus not just on the workflow, but on guiding the user back to the home page.

To make all processes more intuitive, the designers included large tabs at the top of the interface for tasks like



A TMS from ShippersEdge provides OVOL’s management with visibility across the supply chain, while automating and streamlining multiple processes, saving time and money.

obtaining a rate quote and creating shipments. “This came from the discussions we had and watching the fifth graders utilize the software,” Taylor says.

When ShippersEdge began working with OVOL USA, it adapted some of its software to provide visibility for logistics across all the company’s business units. The system now can separate shipments and other data by business unit or division, while providing the parent organization with visibility to all units—a change that benefits every client.

EASY TO DO BUSINESS WITH

The ShippersEdge software is easy enough to use that new employees, assisted by online tutorials, can learn it within a few hours, Krizay says. OVOL also has been able to add functions and “not break the bank,” Krizay says.

For example, at first, the feed between OVOL and ShippersEdge was one-way: customer service employees would enter an order and send it to ShippersEdge to be routed. To streamline the process even further, OVOL began moving carrier bills through its accounting software. Because they move directly, most match and automatically go to OVOL’s accounting software to be paid, saving time and money.

Some customers of OVOL’s divisions

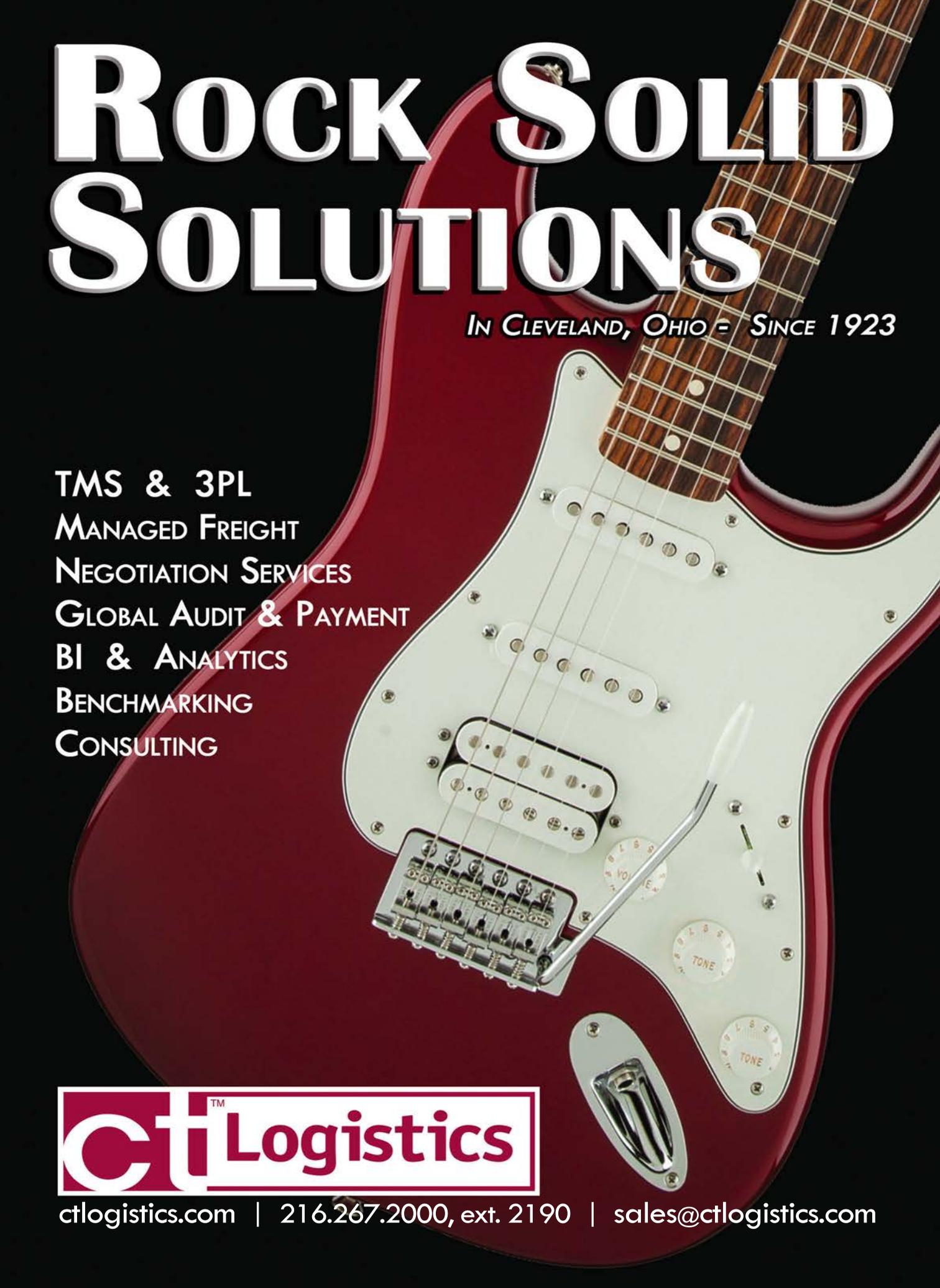
in Texas, which are larger and have their own delivery vehicles, require deliveries be completed by certain times, and some drivers there need to be placed on specific routes. Determining the routing used to consume hours each day. That has been cut to a few minutes, due to the algorithm ShippersEdge built that determines the route for each truck and driver, while working within the business rules.

Moving forward, OVOL plans to implement ShippersEdge’s dock scheduler in several locations in Texas. As part of this, Krizay’s team will place large screens in the warehouses, so employees can see what deliveries are coming in and going out, and at what time. Then they can have the right products and documents ready as soon as a truck arrives.

As important as its technology, ShippersEdge was “a refreshing company to deal with,” Krizay says. Every Tuesday, Krizay, Taylor, and Tom Taylor, ShippersEdge’s president, connect to talk over how things are going and any changes underway.

When Krizay suggests a change to the solution, Tom Taylor has an amazing ability to build on the idea and make it even more effective, he says. That kind of back-and-forth and customer service is “worth its weight in gold,” he adds. ■

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CASEBOOK

3PL Partnership Turns Up the Heat

THE CUSTOMER:

Launched in 2019, BBQGrills.com is a family-owned, operated, and “argued-over” online retailer of gas grills, outdoor kitchen equipment, and other outdoor patio-related items in California.

THE PROVIDER:

Coyote Logistics, a global third-party logistics provider, manages full truckload, LTL, intermodal, air and ocean, and cross-border freight for a variety of industries including automotive, CPG, food and beverage, healthcare, manufacturing and retail.

by *Karen Kroll*

BBQGrills.com, which offers premium grilling and outdoor kitchen products, launched in 2019 and quickly found a ready market. While its growth was largely a benefit, it also meant the company soon needed additional support in various functions, including transportation.

Ryan Maltbie, founder of the Brentwood, California-based company, turned to Coyote Logistics. A global third-party logistics provider, Coyote Logistics took on responsibility for handling BBQGrills.com’s less-than-truckload (LTL) shipments. This enabled Maltbie and his team to focus on continuing to grow the business.

Few business experts would recommend launching a company just a few months prior to a pandemic. And while many businesses have struggled over the past two years, BBQGrills.com flourished.

COVID lockdowns and concerns about safety prompted millions to stay home, and the market of people interested in adding to or upgrading their outdoor kitchens and grills proved resilient. Sales of the company’s grills, smokers, pizza ovens, fire pits, and other items for outdoor living took off, topping \$1 million the first year, Maltbie says.

Discovering an enthusiastic market for a company’s products is a coveted accomplishment, yet it brings its own challenges. The company must effectively manage rapidly growing operations, while

maintaining customer satisfaction and continuing to nurture future growth.

As BBQGrills.com moved into 2021, Maltbie decided to step back from handling some daily operations so he could focus on maintaining business growth. One area that needed to change so the company could continue to enjoy increasing demand for its products was shipping and transportation. BBQGrills.com needed a provider of LTL shipping services that covered the United States, offered quality customer service, reasonable pricing, and in-depth transportation expertise.

IT'S NOT ALWAYS ABOUT PRICE

As with most business relationships, price was a critical consideration. Yet when working with many LTL providers, Maltbie notes he often encountered an overwhelming focus on cost, and less attention to the ways in which a solution could boost efficiency and save time. These attributes are often just as critical for many businesses, and especially those experiencing rapid growth.

Moreover, even as some providers emphasized price, they sometimes

obscured the true, comprehensive cost of their solutions. For instance, some glossed over additional fees that would come into play, such as appointment and lift gate fees, Maltbie says. Some didn't understand the class and weight of the products BBQGrills.com offers—grills can span more than seven feet, and some products weigh several hundred pounds.

"Everybody looks at saving money, but that's not the focal point," Maltbie says. While few successful business owners would decline the opportunity to save \$10 or \$20 on a shipment, spending inordinate amounts of time on administrative functions can negate any financial savings.

"Spending time over money is not beneficial," he says.

Maltbie has focused on using both time and money efficiently. Coyote Logistics has also taken this approach to heart, and helped BBQGrills.com on multiple fronts.

Coyote Logistics serves a network of more than 15,000 shippers and 70,000 carriers, says David Graziano, business development representative with the company, whose U.S. headquarters is in Chicago. Coyote works with customers of all sizes, with smaller businesses being a key customer segment. Its clients span multiple industries, including retail, automotive, and healthcare.

LINKED ON LINKEDIN

Graziano initially reached out to Maltbie through mutual LinkedIn connections, figuring "BBQGrills.com's growing business would be a great fit for the Coyote network," he says.

Once the opportunity arose to move some freight for BBQGrills.com, the Coyote team "showed Maltbie that we could offer superior service and technology at a comparable—if not better—cost" than it had previously been paying, Graziano says.

By turning to Coyote to handle LTL shipments, Maltbie was able to cut the time he and his team spent on shipping activities and direct their efforts to higher-priority actions. At the same time, shipping costs dropped.

Coyote's capabilities and understanding of BBQGrill.com's transportation needs impressed Maltbie enough that he decided to shift the company's LTL shipping

CASEBOOK STUDY

The Grill of it All

THE CHALLENGE:

BBQGrills.com, a rapidly growing company, needed to find a logistics provider that offered less-than-truckload (LTL) shipping services across the United States. The provider also had to offer quality customer service, and in-depth transportation expertise, and be able to handle time-consuming logistics tasks, such as completing bills of lading.

THE SOLUTION:

Partner with Coyote Logistics, a global third-party logistics provider.

THE RESULTS:

Damaged freight claims dropped by more than three-quarters, and shipping costs dropped by more than one-third.

NEXT STEPS:

Continue to work with Coyote Logistics as sales growth at BBQGrills.com continues.



BBQGrills.com is a small, rapidly growing business specializing in premium BBQ grills and outdoor kitchen equipment. They ship from their network of five U.S. warehouses, as well as direct from manufacturers. Most freight is e-commerce, shipped direct-to-consumer via LTL.

business to them. Since then, Coyote has been "critical to effectively fulfill our growing number of customer orders," Maltbie says.

Once the two companies decided to work together, Coyote was up and running within a couple of days. Within the first few weeks, Coyote onboarded the operations team to help support increasing sales volume. "It was very much a collaborative effort," Maltbie says.

Coyote used the onboarding process to learn as much as it could about the

business of BBQGrills.com so it "could be consultative about carrier selection, loading, scheduling and pricing, among other factors," Maltbie adds.

One feature Maltbie says he most appreciates is Coyote's backend portal communication, which shows daily shipments and orders filled, among other information.

In addition, Coyote began handling bills of lading for BBQGrills.com. The company had been doing them in-house—"an incredibly tedious and time-consuming



As the pandemic drove more people to turn their backyards into staycations, BBQGrills.com took off, netting more than \$1 million in sales during its first year. But rapid growth meant more shipments, and the business quickly outgrew its shipping operations.

process,” that could consume several hours every day, Maltbie says. Having Coyote handling these “was definitely positive,” he adds.

SOUND FREIGHT MANAGEMENT

Consolidating freight under one logistics provider gives smaller businesses access to pricing and LTL rates more favorable than many can access on their own, Graziano says.

In addition, by working with strategic carriers and monitoring each shipment from freight classing through delivery, and providing shipping insights, Coyote can reduce claims and operate more efficiently.

“There are no smoke and mirrors, just sound freight management with an eye toward a longer-term strategy instead of chasing rates load-by-load,” Graziano says.

In working with BBQGrills.com, “my biggest focus was giving time back to Maltbie so he could focus on other growth areas of his business, like sales, marketing, and strategizing,” Graziano says.

To provide additional help, Coyote put together a support team that could help BBQGrills.com with quoting, building shipments, generating bills of lading, supporting freight claims, and other functions. The goal? “Making freight something Maltbie just needs to check in on occasionally, knowing it’s in good hands and, therefore, reducing his day-to-day time spent on managing logistics,” Graziano says.

Freeing up time has helped Maltbie focus on revenue, which doubled in 2021, he says. At the same time, shipping costs have dropped by 35%, while the order fulfillment process is more streamlined. Once someone places an order, BBQGrills.com determines from which of 15 warehouses to ship it. Then it informs Coyote of the order, and Coyote takes it from there.

Another benefit has been the drop in damaged freight claims, which declined by about three-quarters. In the 18 months the two companies have been working together, only a handful of shipments have suffered damage, and all of these were quickly resolved, Maltbie says. When BBQGrills.com had been with a previous logistics company, it could take close to one year to resolve a claim, he adds.

Coyote “has been a great company to work with,” Maltbie says. Even as the number of shipments jumped by about two-thirds between 2020 and 2021, Coyote was able to keep up.

“BBQGrills.com is a growing company with great people behind the brand,” Graziano says. He adds that Coyote is “thrilled to play a small part supporting their journey.”

Leadership at Coyote prides itself on being fast, efficient, and service-centric, and prioritizing communication with its clients, Graziano says. This helps foster an atmosphere of trust on both sides. “We can rely on their business; they can rely on us to

help keep their customers happy and get the experience they’ve come to expect,” he says.

When a company’s management team finds a freight provider they can trust—one that understands how important the growth of their business is—that relationship can pay dividends over the longer term, Graziano says.

READY FOR MORE GROWTH

The growth and change at BBQGrills.com appear likely to continue. Maltbie’s team is looking into expanding its supplier base and adding new brands to its distribution network. It’s also building relationships with architects and manufacturers to create custom designs. The continued growth will mean even larger orders and higher volume.

As the owner of the company, Maltbie strives to remember why he started it in the first place: to source excellent products, provide outstanding customer service and offer reliable shipping. Yet growth can make it more difficult for the founder to directly administer every operation. Dependable service providers allow him to focus on quality customer service and continued growth.

“From the five-plus freight brokers I’ve gone through in the past nearly three years, the reason we settled on Coyote was because they’re the most efficient and the most reliable,” Maltbie says. “They were, in the long run, also the most cost effective. It’s a benefit on all fronts.” ■

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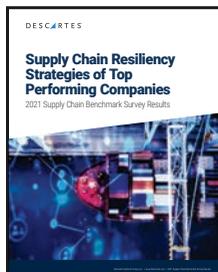
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WHITEPAPERS



SUPPLY CHAIN RESILIENCY STRATEGIES OF TOP PERFORMING COMPANIES

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With the supply chain crunch likely continuing into 2022, the situation for many organizations could go from bad to worse unless they have solid strategies. This benchmark analysis uncovers the supply chain resiliency strategies of top-performing companies as well as the critical steps you can take to reduce risk.

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2022 MANUFACTURING INDUSTRY OUTLOOK

Offered by Deloitte

It is unusual to see positive economic indicators amid unprecedented labor and supply chain challenges, but this is the trajectory for U.S. manufacturing in 2022. However, optimism around revenue growth is held in check by caution from ongoing risks. Read this free whitepaper to uncover the five important trends to consider for manufacturing playbooks in the year ahead.

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FLOYD GAINS VISIBILITY, AUTOMATION, AND A VOICE IN SHAPING TRANSFIX TMS

Offered by Transfix

Floyd Furniture struggled to manage shipments with its full-truckload and less-than-truckload carriers due to manual processes, costing them time, money, and confidence. Learn how the retailer lowered the cost for shipments quarter over quarter, decreased the time to schedule and tender loads, and reduced the time to collect emissions data from several days to 15 minutes.

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WHITEPAPERS

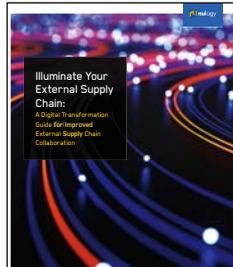


ROBOTIC LIFT TRUCKS CAN CUT OPERATING EXPENSES UP TO 70%

Offered by Yale

The productivity increases associated with robotic lift trucks don't have to come at a steep price. Robotic lift trucks can help warehouses reduce operating expenses by up to 70% and achieve meaningful savings over time. Find out how robotic lift trucks can offer a scalable solution and a quick return on investment.

bit.ly/YaleNov21SCI

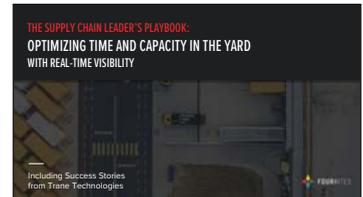


ILLUMINATE YOUR EXTERNAL SUPPLY CHAIN: A DIGITAL TRANSFORMATION GUIDE FOR IMPROVED EXTERNAL COLLABORATION

Offered by Nulogy

Consumer packaged goods companies face mounting pressures, such as retailer demands, supply shortages, and consumer preference shifts. It's no small feat to juggle that while managing an external network of manufacturers and packagers. This guide outlines the benefits of a successful digital transformation strategy and the obstacles encountered along the way.

bit.ly/NulogyNov21SCI



OPTIMIZING TIME AND CAPACITY IN THE YARD WITH REAL-TIME VISIBILITY

Offered by FourKites

Are you looking to unlock value across your operations, reduce wait times, and improve customer deliveries? With a yard management system, organizations can reduce detention costs, optimize employee productivity, and implement process improvements and automation. Read this free report to learn how to achieve a full return on investment while alleviating four major challenges in the yard.

bit.ly/FourKitesNov21Eb

PODCAST



Simeon Atkins



Kate Wells

HOW MEANINGFUL DATA-DRIVEN INSIGHTS TURN CUSTOMERS INTO LOYAL PARTNERS

Offered by Similarweb

The e-commerce landscape is filled with not only opportunity, but also intense competition. With so many service options, how can businesses show customers they're tapped into their needs? Simeon Atkins and Kate Wells of Similarweb shed some light on how shippers can use the right data to retool their approach and make that vital customer connection.

bit.ly/SimilarSept21Pod

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[IN FOCUS]

INBRIEF

New Services and Solutions

> SERVICES

> **RK Logistics Group**, a provider of warehousing, e-commerce fulfillment, and supply chain management services, opened a new facility in Hayward, California. The facility provides warehousing, product staging, and distribution services for Silicon Valley manufacturers, suppliers, and retail e-commerce shippers.

> **BioCare**, a therapeutics distributor, launched LogiCare3PL, a third-party logistics (3PL) offering that provides specialty pharmaceutical manufacturers order-to-cash, inventory management, packaging, and shipping services.

> **DSV** introduced Green Logistics—a set of green offerings—with the aim of reducing emissions for customers. The Green Logistics solutions, including CO2 reporting, green supply chain design and optimization, sustainable fuel offerings, and carbon offsetting, are available for companies of all sizes globally and across transportation modes.

> **DHL** opened a new facility in Miami Gardens to bolster its capacity in South Florida. The new facility addresses increasing B2C and B2B e-commerce shipment



> **Stena Line** is launching a route between Stockholm Norvik Port (*pictured*) and Hanko in Finland. In February 2022, the vessel *Urd* will come into service on the new route, while a second vessel, *Stena Gothica*, will be added to the route in May, providing daily departures from both ports. Both vessels offer cargo and passenger capacity.

volume by splitting it with the company's facility in Doral (near Miami), speeding delivery and boosting service for customers in both Miami-Dade and Broward counties.

> **Flexport**, a global logistics platform, launched the Flexport Certified Partner Network, a vetted ecosystem of logistics service providers. Certified Partners are held to data, security, and compliance standards and equipped with the Flexport Platform to ensure end-to-end milestone visibility and performance monitoring.

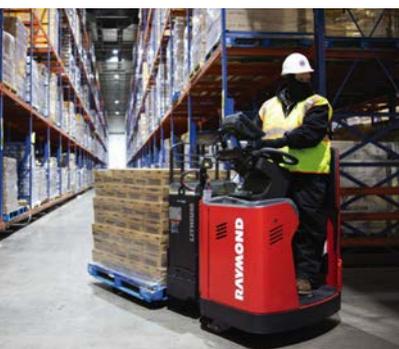


> **Gebrüder Weiss** now offers a zero-emissions service to its customers in North America. Companies have the opportunity to fully compensate for the CO2 emissions generated during the transport of their cargo. Through its zero-emissions service, the provider can compute and document the CO2 output for every North American shipment carried worldwide.

> **AIT Worldwide Logistics** opened a new facility in Los Angeles to offer shippers a single point of access for a range of supply chain solutions including special services for food, high-tech, and life sciences shipping. Offering pharmaceutical pre-conditioning capabilities and a cage for high-value freight, the 106,000-square-foot warehouse is located near the 405 and 110 freeways for access to the ports of Los Angeles and Long Beach.

> **Lineage Logistics** is breaking ground on a \$62-million facility near the Port of Savannah to handle fresh produce and perishable imports. Operating as a cross-dock, the facility will also provide fumigation, packaging, and other value-added services for customers to move fresh product to markets across the Southeast. Construction is expected to be complete by the end of 2022.

> **PRODUCTS**



> The new **Raymond 8910** enclosed end rider pallet truck with the iWAREHOUSE telematics system is suited for heavy-duty and high-throughput applications. The new lithium-ion-ready



> **cargo-partner** expanded its warehousing, last-mile, and value-added solutions to support the foodstuffs and perishables industry throughout Europe. Its iLogistics Center in Prague (*pictured*) is certified for organic products in accordance with the EU Eco-regulation and contains ambient and chilled storage space. The logistics provider also offers fulfillment solutions for piece shipments.

rider pallet truck from the Raymond Corporation features easy-to-use controls and an operator compartment. It also offers ergonomic steering and a deadman pedal that requires less effort to operate.

> **ORBCOMM's** asset management solution tracks and monitors supply chain assets. The device features an embedded global SIM card that allows devices to switch networks between geographies with the certifications and type approvals to meet the needs of international operators.

> **Toyota Material Handling** introduced 22 new electric materials handling solutions, including 12 new reach truck models that offer companies tailored solutions for narrow aisles and different picking and putaway needs.



> The new **Rollo Wireless Printer** and **Rollo Ship Manager** are the latest upgrades to Rollo's inkless shipping label printer and management software for small and mid-sized businesses. Rollo Printer produces shipping labels from 2 to 4.1 inches wide. Rollo Ship Manager connects directly to large carriers such as UPS and USPS for discounts on shipping rates.

IN BRIEF

> TRANSPORTATION

> **OOCL** introduced a trans-Pacific service that links South China with the Port of Long Beach, California. The new Pacific China South Express (PCSX) service in the Trans-Pacific network calls on Shanghai, Fuqing, Xiamen, Yantian, and Long Beach.

> **GEODIS** expanded its direct-to-customer intercontinental delivery service to Canada to support e-commerce shipments. GEODIS MyParcel was first launched in 2020 to offer a small parcel delivery service from the United States to 27 European countries.

> **ATRAN Airlines**, an express carrier within Volga-Dnepr Group, launched a new route connecting Shenzhen, China, with Cologne/Bonn,

Germany. The flight operates weekly aboard a Boeing 737-800BCF.

> **ZIM Integrated Shipping Services** now offers a service connecting the Indian subcontinent and the East Mediterranean. The new service, solely operated by ZIM, calls on Mundra, Nhava Sheva, Colombo, Haifa, Mersin, and Istanbul.

> TECHNOLOGY

> **Vizen Analytics** released an enhanced version of its Empowered-AI demand forecasting platform. The latest version includes the ability to create accurate prediction models to increase visibility through the supply chain. It is offered in a custom SaaS program and can be implemented in fewer than 90 days.



> **DHL Supply Chain** customers now have access to a larger network of spot freight carriers to meet capacity needs through the provider's partnership with **Emerge**, which offers a freight procurement platform. DHL Supply Chain is integrating Emerge's Spot Marketplace platform capabilities into its LLP Control Tower and transportation management system (TMS) ecosystem.



> The new RoboShuttle from **Geek+** allows businesses to make full use of vertical warehouse space and store, retrieve, and organize boxes carrying small to mid-sized items. RoboShuttle can identify and place boxes of popular SKUs on the lowest shelf to speed up the picking process, handling up to 500 boxes/hour/station.

> **Ascent** unveiled its new digital platform and product suite, PEAK 2.0, which gives shippers control over how they view their supply chain data. Among the new tools are customizable dashboards and data visualizations, shipment bookmarking, live tracking, integrated communication tools, document management, spending tracking, and ERP integration.

> **Castellan Solutions**, a provider of resilience management solutions, introduced a crisis management module that lets organizations act and respond in the critical moments following the onset of a business disruption. Its SaaS platform helps users analyze and prioritize risk, develop actionable response and recovery plans, stress-test plans via plausible scenarios, and mobilize response teams.

> **Fast Radius**, a cloud manufacturing and digital supply chain company, now offers manufacturers a custom microfactory solution. The offering allows companies to partner with Fast Radius to design and stand up advanced microfactories. Each factory is designed to meet a customer's specific component manufacturing and technology needs, along with giving them access to proprietary software tools that provide visibility into supply chain operations.

> **Shippabo**, a cloud-based supply chain management platform, expanded its network of service providers to offer more transloading services to companies with inland movement. The expanded service aims to give importers ocean transportation lead time and inventory availability.

> To digitize air cargo processes, airfreight agent network ECS Group's **Cargo Digital Factory** and logistics software provider **Wiremind Cargo** joined forces and launched CargoTech. CargoTech's product portfolio includes existing Cargo Digital Factory products such as its track-and-trace solution and Wiremind Cargo's shipment volume evaluation and flight planning system SKYPALLET.

> **CN** and **Google Cloud** started a seven-year strategic partnership to transform CN's supply chain as part of digital scheduled railroading. CN customers can expect new solutions

such as simplified ordering and automated tracking.

> **DDC FPO**, a provider of business process outsourcing (BPO) solutions, launched DDC Sync, an enterprise application consisting of a mobile app and a web portal to streamline freight operations data. The solution provides automated alerts, driver-terminal chat functionality, and real-time reporting.

> **TruckerCloud**, a real-time freight visibility software platform, launched Instant Carrier Onboarding. Shippers can now use the platform for the spot market because the new functionality makes onboarding instantaneous.



> **Handheld Group's** newest version of its Nautiz X9 PDA device runs Android 11 and is Android Enterprise Recommended. Designed to handle tough conditions, the Nautiz X9 is built with a magnesium casing. With an upgraded platform, it is designed for mobile computing and data collection in warehouses and other industrial applications.

SEEKING VICE PRESIDENT OF LOGISTICS

Sutton Warehousing, a highly trusted supply chain partner serving manufacturers and wholesalers of consumer products sourced and distributed to markets globally, seeks a Vice President of Logistics based in Sayreville, New Jersey.

The VP of Logistics will both manage day-to-day operations of the logistics organization and develop the vision and roadmap to support the organization's long-term strategy and future growth. The VP will manage internal teams across the company as well as external partners including relationships with ocean and air providers.

Strategic responsibilities include:

- Develop long-range logistics strategies to support growth
- Negotiate ocean contracts and ensure capacity is available to support shipping requirements
- Develop and implement best practices to drive efficiency, reduce cost, and improve service
- Identify, develop, and implement shipping visibility tools
- Help develop, support, and drive the shift of volume to alternative distribution methods

Day to Day responsibilities include:

- Import of approx. 25M+ units, 5k containers annually
- Management of ocean contracts including import logistics
- Create transportation capacity strategies and develop contingency plans
- Ensure best rates for expedited services when required
- Partner with Finance to manage and report on all cost associated with logistics
- Develop and utilize KPIs to help drive execution
- Ensure ongoing carrier and factory compliance with operating standards and service level agreements.
- Standardize logistics processes, ensuring implementation of best practices
- Management of customs compliance program and adherence to all governmental policies

Team management responsibilities include:

- Ensure talent is exceeding expectations and provide development and coaching
- Develop customer service mentality for the team and drive to exceed expectations
- Build relationship and trust with cross-functional partners
- Build team culture of continuous improvement

The Ideal Candidate:

- BA/BS degree in Supply Chain, Logistics, Engineering or equivalent
- 15+ years of experience in managing large logistics organization in a multi-divisional environment
- Apparel wholesale/retail/e-commerce supply chain experience a plus
- Experience working with Amazon, Walmart, Costco, Target, Major department stores
- Proven experience with managing large logistics organizations with similar complexity
- Demonstrated track record of successful project deployments with quantifiable results
- Ability to manage day to day operations, and multiple cross functional projects simultaneously and determine priorities.
- Demonstrated ability to utilize data and metrics to drive decision making and optimization
- Experience with Supply Chain Systems, including but not limited to ERP systems
- Warehouse & Transportation Management Systems, and Supply Chain visibility tools

Is this the job for you?

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12 *Inbound Logistics* Podcast Episodes for Illuminating Logistics Conversations



Get insightful takes from logistics leaders in these must-listen discussions, packed with practical tips and observations.

EPISODE #110:
**HOW THE OPEN VISIBILITY NETWORK
ENHANCES DATA COLLABORATION**

Guests: *Krenar Komoni, CEO & Founder, Tive,
and Mathew Elenjickal, CEO & Founder, FourKites*

Visibility is critical to any business—but what if there was an easy way to collect data from multiple platforms and share it with all stakeholders involved? That optimized collaboration is the goal of the Open Visibility Network. Krenar Komoni of Tive and Mathew Elenjickal of FourKites explain the benefits of shared data.

EPISODE #111:
**THE STATE OF
MODERN SUPPLY
CHAIN EDUCATION**

Guests: *Professors Haitao Li,
Scott Grawe, and Joel Sutherland*

Global disruption highlighted the importance of a reliable supply chain and the urgent need to advance supply chain college and university programs. Professor Haitao Li of the University of Missouri-St. Louis, Professor Scott Grawe of Iowa State, and Professor Joel Sutherland of the University of San Diego take you to school on reshaping supply chain education.

EPISODE #117:
**SHIPPERS MUST INNOVATE TO KEEP
THEIR SUPPLY CHAINS AGILE**

Guests: *Senthil Murugaiyan, VP of Global Services, ITOrizon,
and Steffanie Ness, VP of Sales, UCBOs*

The pandemic brought sweeping changes that continue to accelerate, forcing supply chains to be more agile than ever. Shippers must focus on visibility, orchestration, and execution to respond quickly and accurately. Senthil Murugaiyan of ITOrizon and Steffanie Ness of UCBOs discuss how to innovate in this new normal.

EPISODE #112:
**TECHNOLOGY
CONTINUES TO
RESHAPE THE
SUPPLY CHAIN**

Guest: *Darrell Ortiz, Founder &
CEO, CDM Software Solutions*

Behind all the cargo and containers are mountains of data that must be collected, processed, and shared across an ever-increasing network of logistics partners. Ensuring proper compliance while providing visibility are just some of the complex demands. Darrell Ortiz of CDM Software Solutions discusses how technology continues to impact operations.

EPISODE #114:
**ADDRESSING
CAPACITY
CONCERNS AND
FINDING FUTURE
SUCCESS**

Guest: *Rick Thomas, SVP
of Business Development,
GEODIS*

With the capacity crunch and accelerating e-commerce demands, shippers have had to become more agile and adaptable to keep up with the rapid changes. Rick Thomas of GEODIS shares his observations on the existing challenges and new strategies that will help shippers succeed into the future.

EPISODE #118:
**REFRIGERATED
LOGISTICS:
SUSTAINABILITY
AND PROFITABILITY
THROUGH
INNOVATION**

Guest: *James Bell, President
& CEO, Viking Cold Solutions*

Cold chain takes center stage as the demand for reliable refrigerated solutions continues to soar during the pandemic. At the same time, navigating climate change, energy demands, and infrastructure requires exceptional innovation. James Bell of Viking Cold Solutions shares a few hot takes on the state of cold chain.

EPISODE #120: TRANSPARENCY CAN ENHANCE AND STRENGTHEN YOUR PARTNERSHIPS

Guests: *Marty Wadle, Chief Commercial Officer, and Paul Jensen, Senior Vice President of Supply Chain Solutions, Ruan*

Everything from distribution to data crunching requires dedicated attention that can be overwhelming—unless you have the right tools or the right partners to back you up. Marty Wadle and Paul Jensen from Ruan discuss the importance of transparency and trust in the industry.

EPISODE #124: MEANINGFUL, DATA-DRIVEN INSIGHTS TURN CUSTOMERS INTO LOYAL PARTNERS

Guests: *Simeon Atkins, Industry Consultant, and Kate Wells, Senior Industry Manager, Similarweb*

The e-commerce landscape is filled with opportunity and also intense competition. With so many service options, how can businesses tap into their clients' needs? Simeon Atkins and Kate Wells of Similarweb shed light on how to use the right data to make that vital customer connection.

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EPISODE #121: EASING SUPPLY CHAIN STRESS FOR PEAK SEASON

Guests: *James Armstrong, Vice President of International Solutions, and Chris Hoffmeister, Executive Vice President of Account Management, Hub Group*

Unprecedented consumer demand shows no signs of slowing. Combine that with inventory shortages, a capacity crunch, and bottlenecks at the ports, and businesses face an unusually tough peak season. James Armstrong and Chris Hoffmeister of Hub Group discuss trends as well as solutions for peaking at the right time.

EPISODE #122: HOW A PROPERLY EXECUTED TMS AFFECTS SUPPLY CHAIN SPEND

Guest: *Frank Dreischarf, Vice President of Supply Chain Solutions, R2 Logistics*

A “good TMS” could mean something different for every company. For some it means ease of use or comprehensive data, and for others it means effective training and support. Frank Dreischarf of R2 Logistics explains how ineffective TMS execution might be negatively impacting your supply chain spend and how to mitigate it.

EPISODE #123: THE RESOURCES SHIPPERS AND CUSTOMERS NEED TO NAVIGATE A VOLATILE MARKET

Guests: *Stewart Dunsmore, President & CEO, and Dave Maddox, SVP Global Sales Supply Chain & Marketing, nVision Global*

From dealing with the capacity crunch to managing rate volatility, businesses must have the right tools in place to keep operations flowing and costs down. Dave Maddox and Stewart Dunsmore of nVision Global discuss how companies can maintain solid supply chain efficiency.

EPISODE #126: COMMUNICATION IS KEY TO COPING WITH CAPACITY CONCERNS

Guest: *Paul Nelson, General Manager, Trinity Logistics*

The lingering capacity crunch continues to affect supply chains worldwide. Companies withstanding the disruption have done so with the help of logistics partners who maintain open lines of communication and find innovative solutions. Paul Nelson of Trinity Logistics shares some insight from the field.

MOST READ Articles OF 2021

From keeping your cargo cool to amping up innovation in the age of acceleration, take a look back on the *Inbound Logistics* content that resonated with readers in 2021.

TRAIN OR TRUCK? OCEAN OR AIR? CHOOSING THE RIGHT MODE

OCTOBER 2021

A survey of the factors that influence mode selection, both in ordinary times and in the hyper-challenging COVID era.

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GOLD CHAIN INNOVATIONS: KEEP YOUR COOL

DECEMBER 2021

Items that need to stay cool range from large containerloads of fish to vaccines, and each requires special techniques. Here's how shippers stay chill.

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TRUCKING STRATEGIES TO KEEP YOUR FREIGHT MOVING

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With capacity tight and trucker employment stretched thin, carriers can be selective about who they work with. Here's how you can stay in the driver's seat.

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AIR CARGO TODAY: BUCKLE UP!

NOVEMBER 2021

Despite tight capacity and rising rates, air cargo has become an even more critical part of the supply chain. Experts offer tips for riding out the turbulence.

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RETAIL GETS BACK TO WORK

SEPTEMBER 2021

Workplace re-openings bring a host of new challenges to e-commerce retailers, including shifting from home to office delivery and dealing with warehouse issues.

bit.ly/RetailBackToWork



SUPPLY CHAIN TECHNOLOGY: THE AGE OF ACCELERATION

APRIL 2021

Technology innovations help supply chain professionals access the qualities that can help them compete in a changed world: safety, visibility, flexibility, efficiency, and sustainability.

bit.ly/AgeOfAcceleration



137 TIPS FOR A FULLY CHARGED SUPPLY CHAIN

JANUARY 2021

The ultimate list of tips for charging up your supply chain to full power in 2021 and beyond, covering everything from cold chain to e-commerce and automation.

bit.ly/SupplyChainRecharge

3PLs HAVE YOUR BACK

JULY 2021

Shippers trust their 3PLs will be there for them through any business conditions. These partnerships stuck it out through trying times with smart work, innovation, and commitment.

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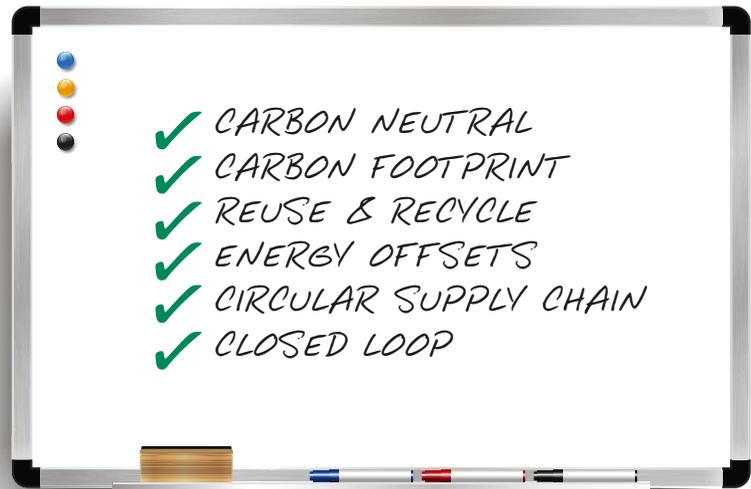


YOU BET, WE STILL CARE ABOUT SUSTAINABILITY

JUNE 2021

Despite the distractions posed by the pandemic, many companies continue to improve sustainability in their supply chains. Take a look at some of those initiatives.

bit.ly/SustainSupplyChain



HANDLE WITH WHITE GLOVES

AUGUST 2021

As consumers buy more over-sized goods online, manufacturers and retailers serve up white-glove, last-mile delivery services to make in-home assembly a first-class experience.

bit.ly/OversizeGoods

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Connect with industry peers, join thought-provoking discussions, and discover the future of supply chain.

FEB 20-23, 2022
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LINK Retail Supply Chain Conference

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Industry leaders come together to confront today's challenges, explore new solutions, and shape the industry's future. Top executives in the retail supply chain network and learn from each other through case studies, best practices, and expert thought leadership, providing new perspectives, ideas, and solutions to innovate your retail supply chain.

MAR 1, 2022
LONDON, ENGLAND

eWorld Procurement & Supply

eworld-procurement.com

This event provides unique insight into the latest innovations and technologies for senior procurement, supply chain, and finance executives. Attend seminars on the latest industry issues, learn how to harness new technologies, and absorb first-hand case studies from senior practitioners.

MAR 21-23, 2022
ORLANDO, FL

TLC Conference

tlcouncil.org

Attend educational sessions with experts and experienced

practitioners offering practical information and advice for your daily logistics practices. Three full-day seminars cover contracting for transportation services, freight claims in plain English, and transportation and logistics law.

MAR 23, 2022
NEW YORK, NY

Optimal 2022

bidops.com/optimal

Curious about how artificial intelligence (AI) is revolutionizing procurement? Optimal is an AI conference for procurement and supply chain teams who want to explore where procurement meets AI to drive innovation and digital transformation. Engage with thought leaders, discuss industry topics, network with peers, and attend professional development workshops.

MAR 28-31, 2022
ATLANTA, GA

Modex

modexshow.com

As the speed of manufacturing, supply chain, and transportation operations accelerates, the future depends on forward-thinking solutions. From illuminating education to next-generation technology and equipment in action, this event will empower your supply chain with more possibilities.

MAR 29-31, 2022
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THE NETHERLANDS**

LogiChem

bit.ly/LogiChemEU

Network and collaborate with Europe's leading heads of supply chain, logistics, planning, and customer service as they share practical insight for rolling out a successful sustainability strategy. Learn how to create a digital network that enables end-to-end visibility and build a successful risk mitigation strategy to address capacity constraints and delays.

APR 19-20, 2022
NEW YORK, NY

Responsible Business USA

bit.ly/RespUSA

Join senior-level executives from businesses and the government

to network, collaborate, and learn how to guarantee a low-carbon future. Find out how to create a blueprint for a commercially successful transition that ensures your supply chain, and entire business, put promises into action while remaining competitive.

APR 26-28, 2022
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International Partnering Forum

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With three active projects, two nacelle manufacturing facilities, and a wind superport, New Jersey is a focal point for the offshore wind supply chain. This event connects global leaders and businesses in the supply chain, offers unparalleled networking, and delivers breaking updates on the industry, from technology to policy.



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New technologies and process advancements have magnified the impact of procurement and sourcing leaders. Explore topics such as how to be an influential leader, spend management, managing remote teams, corporate responsibility, building a more diverse supplier base, implementing new technologies, and more.

MAY 3-4, 2022
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American Supply Chain Summit

supplychainus.com

This platform fosters collaboration on the impact of market dynamics and new technologies for current and future supply chain leaders. Examine case studies on how to navigate disruptions as well as how top facilities roll out workforce management, advanced analytics, process improvement, and automation.

MAY 16-18, 2022
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World Ports Conference

worldportsconference.com

This virtual and in-person hybrid event assesses the indispensable role that ports play in global maritime trade and brings together key industry stakeholders for learning, information sharing, networking, and collaboration. Explore timely topics such as climate and energy, data collaboration, risk management, and resilience.

MAY 22-25, 2022
VIRTUAL OR ORLANDO, FL

ISM World

bit.ly/ISM22

ISM World brings together thought leaders, supply chain and procurement professionals, and the suppliers that support them, focusing on the key topics that impact supply management professionals today and the trends coming in the future. ISM World offers a smaller and more in-depth, networking rich in-person experience with an opportunity to also get breakout sessions on-demand.



JUN 7-9, 2022
SAN DIEGO, CA

GS1 Connect

gs1connect.gs1us.org

Recharge your "adaptability batteries" with your network to share stories of trials and triumph. Learn how your peers have adapted to overcome challenges in order to thrive in uncertain times—with GS1 Standards at the heart of their strategy. This two-day conference highlights user stories and leadership insights for supply chain optimization. Share and learn with live sessions, networking opportunities, trading partner roundtables, and more.

JUL 15-16, 2022
FORT WAYNE, IN

Expedite Expo

expediteexpo.com

People from all over North America learn about the newest expedite trucking industry news, equipment, career opportunities, and products geared toward expedite owner-operators and drivers. Dedicated workshops of interest to every type of attendee, whether fleet owner, owner operator, looking to get into the industry, CEO, or truck driver.

AUG 31-SEPT 1, 2022
PHILADELPHIA, PA

Home Delivery World

bit.ly/HomeDelivery22

This conference and exhibition for global last-mile logistics is dedicated to uncovering innovative solutions for retailers, grocers, CPGs, and 3PLs facing challenges across the supply chain from warehousing to fulfillment. From route optimization and reverse logistics to grocery delivery, parcel spend, and white glove, this is the premier event for e-commerce retail supply chain.

OCT 10-12, 2022
CHICAGO, IL

Parcel Forum

parcelforum.com

Join parcel shipping and distribution supply chain professionals to learn how to better streamline your warehousing operations and delivery models to remain competitive in an evolving landscape. Learn how to ship more packages more cost effectively, as the industry undergoes tremendous change, largely driven by e-commerce and growing customer demand.



These events were scheduled to proceed as of press time.

Are You Ready for Today's New World?

Thanks to the explosion in e-commerce and the COVID-19 pandemic, a manufacturer, distributor, or retailer of consumer products can no longer just “fill the pipeline” and wait for orders to come in. Now, they must anticipate various purchases and delivery items, while at the same time minimizing costs.

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There was no existing “playbook” for organizations to navigate their way through this new world – **until now.**

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Working Together for a Competitive Advantage



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This book describes the impact of omni-channel marketing on the supply chain and logistics functions. It will help management meet the needs of not only today's ever-changing world but to anticipate what may be required in the future to achieve superior customer service, profitability, and a competitive advantage.

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HOW IS DIGITALIZATION AFFECTING LOGISTICS AND SUPPLY CHAINS?



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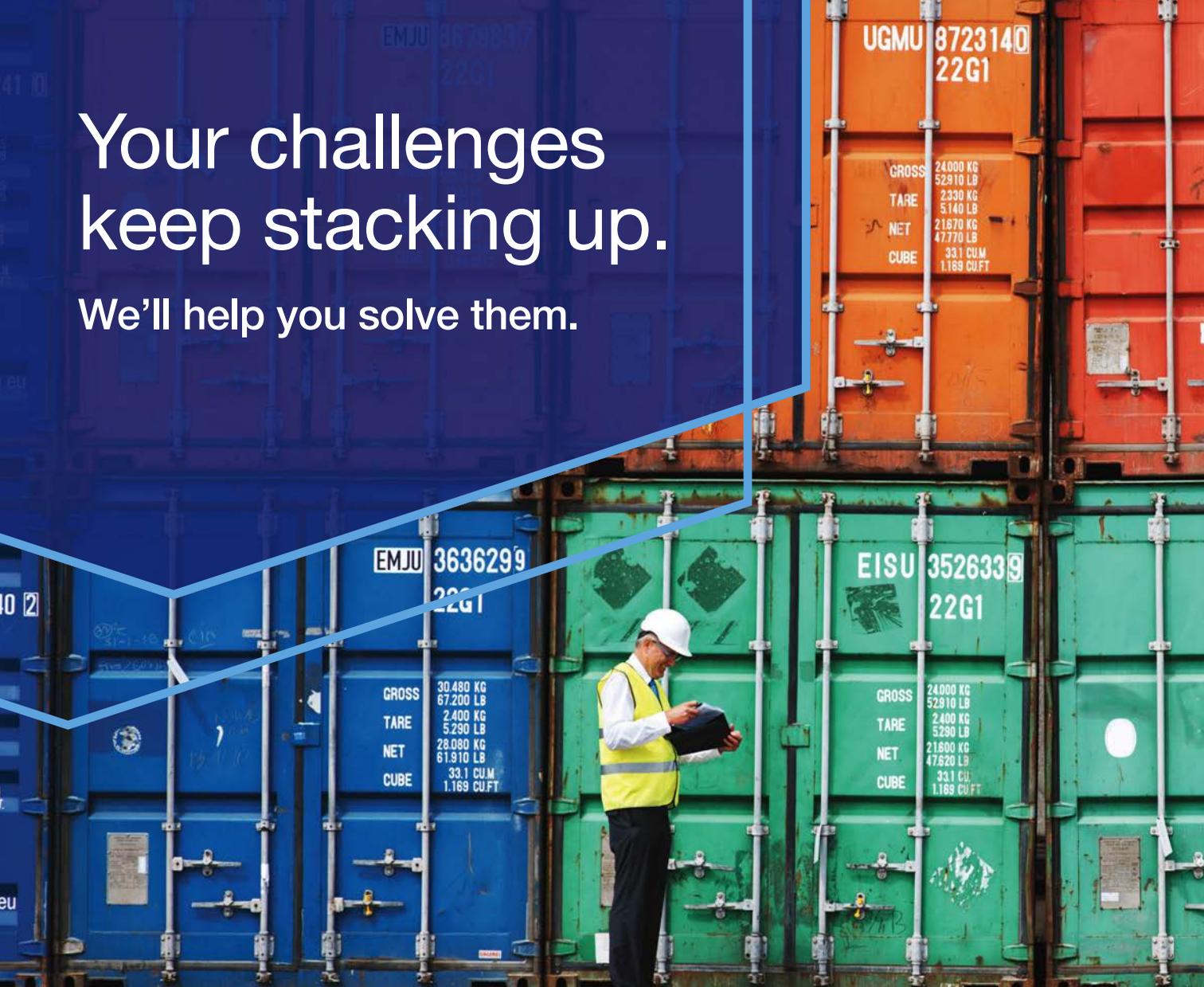
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2022 LOGISTICS PLANNER

LEADERS IN LOGISTICS

SHOCKPROOF YOUR OPERATIONS WITH THE LOGISTICS PLANNER

We've learned our lesson, and we won't be fooled again. Enterprises have moved past the slow evolution of operations to investing right now. What new surprises lurk around the bend? It does not matter. Lessons learned, you are preparing now.

This year's Logistics Planner is here to help. Just as you are fast-tracking operational improvements, the companies profiled in the following section have been out in front developing the solutions and services you need to succeed and excel in today's global economy.

Use this resource. It is completely updated and expanded. These profiles of the best-in-class providers are available anywhere, any time and any way you need them—in magazine editions both print and digital book format, on the web for all of 2022, and in highly ranked Apple and Android apps. We also feed these profiles to our 400,000 social media connections, including more than 355,000 LinkedIn correspondents.

This year's Logistics Planner features an exclusive group of companies across all areas of transportation and logistics. These leaders have the requisite tools and expertise to align your demand signals to your supply lines, enabling you to provide your customers the best service possible. Use them. They are the leaders that can help you shockproof your operations in 2022.



The *Inbound Logistics* mission is twofold: provide the information and insight to help you better match demand to supply, and to deliver decision support to shine the light on leading companies, their solutions, and their expertise to help you put your plans into action. The profiles will help you identify and select the best carriers, most effective technology, leading ports and sites, and finest logistics providers whose solutions best dovetail with your needs now, and in the future.



Please mention you saw their Profile in Inbound Logistics.

GETTING THE MOST OUT OF YOUR LOGISTICS PLANNER

Use the Planner Profiles to shockproof and energize your enterprise to become more responsive, scalable, survivable, and most of all, competitive.

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A digital and mobile version of the Logistics Planner—optimized for your desktop or mobile device. Download the entire January edition featuring all the great content, as well as the Planner section to access and use all the information on the profiled companies.

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App editions of the Logistics Planner are available by searching for "Logistics Planner" in the iTunes and Google markets.

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3PL Central

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888-375-2368 • info@3plcentral.com • 3plcentral.com

3PL Central is the leader in cloud-based warehouse management system (WMS) solutions built to meet the unique needs of the 3PL warehousing community. Serving as the backbone of our customer's operations, our platform quickly transforms paper-based, error-prone businesses into service leaders who can focus on customer satisfaction, operate more efficiently, and grow faster.

Offering a comprehensive warehouse management platform, we make it easy for 3PLs to manage inventory, automate routine tasks, and deliver complete visibility to their customers. As the proven industry leader for well over a decade, 3PL Central accurately manages billions of dollars in inventory and processes more than one million orders a week from any of our customers and their customers' systems.



3PL Central is one of the most experienced and connected organizations in the 3PL and warehousing industry. Our platform, 3PL Warehouse Manager, is positioned at the center of a powerful ecosystem of customers, partners, and developers with the goal of enabling intelligent distribution and driving growth. Our platform is used daily by over 10,000 logistics professionals.

Whether you're a 3PL owner looking to grow your business, or an operations manager looking to improve day-to-day workflows with best practices, our platform will help you:

- Increase warehouse efficiency via task automation, pre-wired integrations, and cloud-based inventory management.
- Embed billing processes into your operations by customer, ensuring you are fully paid for all the work you perform.
- Transform into a paperless warehouse by eliminating manual input and streamlining workflows and operational processes.
- Provide complete visibility to your teams and customers with accurate, real-time information 24/7.
- Better serve warehouse customers so you can become a 3PL they will love.

Contact us today for a demo and learn how you can partner with 3PL Central.
Visit: info.3plcentral.com/my-demo



A.N. Deringer, Inc.

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Jake Holzscheiter
President and CEO

Services:

- Customs Brokerage
- Freight Forwarding & Logistics Solutions
- Customs & Trade Consulting
- Warehousing & Distribution
- USDA Meat Inspection

Over 30 offices located from Maine to Blaine, WA, and key air and vessel ports throughout the US.



Deringer provides Customs brokerage, freight forwarding, Customs and trade consulting, warehousing and distribution, and meat inspection services. Maintaining local representation at major ports, strategically located along the northern border and at major air and vessel ports nationwide, customers are provided with a single point of contact. A flat organizational structure allows easy access to our President and leadership team. Moreover, Deringer's culture includes a strong commitment to the ongoing success of our business partners. Welcome to the Deringer Difference.

Deringer's Customs Brokerage Services

We have over 100 years of experience, and our longevity in the industry means customers benefit from the expertise, service, and innovation that comprise the Deringer brand. When choosing a Customs broker, consider that we are renowned as a forerunner of many new and developing trade programs. Members of Deringer's leadership serve on various US Customs & Border Protection and trade association boards and committees. Customers benefit directly from these partnerships as they are kept current on the most pressing trade regulations. Additionally, we custom fit our solutions to each unique client. That's why Deringer has a 99% retention rate among our Top 500 customers, with less than 1% leaving due to customer service-related issues.

Deringer's Freight Forwarding Services

Facilitating the movement of goods throughout the world since 1919, Deringer is an IATA-licensed cargo agent, an FMC-licensed ocean transportation intermediary, and an NVOCC. Deringer arranges and manages freight forwarding, consolidation, deconsolidation, and distribution of freight throughout its journey. Offering LCL and FCL transportation, we scale services to fit clients' needs. Partnering with Deringer for Customs brokerage and freight forwarding means a seamless delivery and reduced risk of demurrage, detention, and document transfer fees.

Deringer's Consulting Group

Deringer Trade Advisory Group (TAG) supports clients by providing a full complement of import and trade consulting services. We partner with our clients to develop effective and sustainable import compliance programs. These programs reduce the risk of regulatory penalties and seizures, optimize the management of duties and fees, and improve process efficiencies and predictability. We assist clients with CTPAT certification, provide customized training and guidance on classification, valuation, and country of origin determination, as well as prepare binding rulings and prior disclosures on their behalf. Additionally, our group supports customers in finding cost savings by identifying special trade program eligibility and managing duty refund programs.

A3 Freight Payment

3150 Lenox Park Blvd., Suite 400 • Memphis, TN 38115

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A3 Freight Payment provides customized transportation spend management solutions. Our solutions help companies normalize and aggregate data, automate transportation audit and payables, identify transportation spend reduction opportunities, manage shipment execution, file claims, and enhance supply chain reporting and analysis.

Headquartered in Memphis, A3 Freight Payment is led by an experienced group of industry veterans who have designed, implemented, and overseen transportation spend management solutions for some of the largest shippers in the world.

Our solutions incorporate the best practices gathered from industry experts who have worked with multiple providers and hundreds of Fortune 1000 customers. We are experts at transportation spend management...it is our sole focus and core competency.



A3 Freight Payment works with each client to build a unique solution tailored to meet your specific transportation spend management needs including:

- Data Aggregation & Normalization
- Global Freight Audit & Payment
- Transportation Spend Management
- Claims Management
- Business Intelligence Tools
- TMS Functionality
- Systems Integration

Companies choose A3 Freight Payment because of our:

Business Strategy – One of a select few, not one in a million

A3 Freight Payment partners with large volume shippers who seek a high degree of customization, exceptional customer service, reliable processing, and minimum resource involvement in managing their solution. This strategy promotes a flat org structure, controlled growth, equal prioritization of customers, and scalability of operations.

Approach to Processing – A different approach, a better result

The A3 Freight Payment solution incorporates the best practices gathered from industry experts who have worked with multiple providers and hundreds of Fortune 1000 customers. Our unique processing model provides a managed solution that eliminates the pitfalls associated with traditional freight payment solutions and provides 100% transparency to you, to our staff, and to your logistics providers.

Customized Solution – One solution does NOT fit all

Your company has internal systems and processing constraints that are unique to your business. A3 Freight Payment partners with you to understand your unique needs and develop a custom and flexible solution that incorporates best practices while working within your constraints.



Dedicated Resources – A truly managed outsource solution

Each A3 Freight Payment client has a dedicated, experienced team of resources led by an Account Manager who is the single point of contact for you. The account manager and their team are empowered to tap into company resources to meet the needs of the client and are solely accountable for management of all processes. This “team concept” provides you with exceptional customer service and produces a truly managed solution.

Experience – Our knowledge ensures a smooth transition

The A3 Freight Payment team has a track record of designing, implementing, and managing global transportation spend management solutions for some of the largest shippers in the world. This experience is crucial to the successful development and deployment of a solution while ensuring a smooth transition for you.



AFS Logistics

670 Emberwood Dr. • Shreveport, LA 71106
877-242-3383 • moreinfo@afs.net • afs.net



Tom Nightingale
CEO

Mission Statement

Winning in an increasingly competitive, connected marketplace requires an agile and analytics-driven supply chain. AFS offers the technology and uniquely experienced team you need to make it work for your business. We'll show you how to extract immediate savings, drive sustained cost reductions and turn your supply chain into a customer-centric differentiator for your brand.

AFS offerings include Audit, Parcel, LTL and Transportation Management services. Our team is comprised of seasoned professionals who bring best practices developed at the world's largest logistics companies. Now, they apply that proven expertise with the speed, agility and transparency of AFS.



Founded in 1982 on the values of ethics, engagement and excellence, AFS Logistics is one of the most experienced 3PLs in the industry. Our team brings a lifetime of experience that enables success for our clients in increasingly competitive and connected markets. We know agility and analytics-driven decision-making are critical to your business' success and your ability to apply those principles to your logistics operations is foundational. Having the experts of AFS in your corner—enabled by our technology and unique model—gives your business a winning edge.

AFS combines a data-driven approach with time-tested skills to drive measurable savings and optimize essential elements of your logistics network. By quickly identifying improvements aligned to your business goals, you can reduce end-to-end supply chain costs and increase profit margins.

Integrated technology and analytics combined with detailed reporting provide visibility not often found with 3PL providers. This consultative approach allows clients to truly understand and interpret data for forecasting and analyzing what-if scenarios to make better business decisions. We provide long-term value to our clients by continuously monitoring their transportation solutions to reduce risk and avoid disruptions.

With decades of industry experience and thousands of client engagements, our team's unrivaled insight, proven processes and dynamic application of analytics run through our entire portfolio of services. Today, we provide differentiated consulting and logistics services to over 1,700 clients and employ more than 350 teammates across seven locations with one focus—to ensure your company's success.

Winning in a Complex, Connected World

Logistics has become the core business function to determine a company's success. Now, brands with nimble supply chains win new customers and expand their businesses. Supply chain excellence has the boardroom's full attention as companies look for ways to simultaneously conserve capital and elevate service levels to their customers.

To win in today's rapidly evolving market, you need more than data to identify and capture significant savings. You need insight that turns raw data into actionable strategies that reduce costs while improving service. Through visibility, accountability and transparency, AFS is helping our clients win.



Alliance Shippers Inc.

Corporate Office: 516 Sylvan Avenue • Englewood Cliffs, NJ 07632
201-227-0400 • info@alliance.com • alliance.com

Services and Solutions:

- The Perfect Shipment® Program
- Intermodal: USA, Canada and Mexico
- Over-the-Road Transportation
- Critical Capacity Solutions
- International Transportation Service
- Temperature Control
- Warehousing Services
- Dedicated Fleet



Founded in 1977, Alliance Shippers Inc. has grown to become one of the largest privately owned providers of global transportation services. With a range of divisions—from temperature control to intermodal rail services—Alliance Shippers Inc. can tailor effective customer-based transportation solutions with a worldwide reach.

Alliance Shippers Inc. is best known for its absolute dedication to customer service. From the sales level to operations, each customer receives dedicated resources and personnel. At Alliance Shippers Inc., quality assurance specialists and communications experts manage the very latest shipping and tracking technologies to ensure that customers have instantaneous access to the information they need.

All of these factors drive Alliance Shippers Inc.'s goal to provide The Perfect Shipment®. It's Alliance Shipper's company-wide commitment to the following four goals:

- Our Goal is to assist arrangement for on-time pickup of the shipment
- Our Goal is to assist arrangement for delivery of the shipment at the time requested
- Our Goal is to assist for delivery of the shipment without exception
- Our Goal is to provide an accurate freight bill

Alliance Shippers Inc. can track a customer's shipment automatically by a proprietary and state-of-the-art TMS system in its fleet of trailers and containers. Multiple measures and checkpoints from origin to destination—whether on the rails or on the highway—help facilitate the goal of on-time pickup and delivery by the carriers. At Alliance Shippers Inc., the focus is always on the customer.

As an early supporter and currently certified member of the EPA's SmartWay program, Alliance Shippers Inc. is committed to responsible environmental practices, which includes maximizing fuel efficiency. Alliance Shippers Inc. understands that smart business methods are not only good for the environment—but also good for their customers' bottom line.

Alliance Shippers Inc. believes it is one thing to promise high standards. It is something quite different, however, to commit to excellence by monitoring and grading yourself with serious performance metrics. At Alliance Shippers Inc., it's a standard practice. By consistently monitoring, measuring and modifying its services, Alliance Shippers Inc. is committed to constant improvement.



Approved Freight Forwarders

14777 Don Julian Rd. • City of Industry, CA 91746 • 888-679-5099
info@approvedforwarders.com • approvedforwarders.com



Randy Tutor
Vice President /
Director of Sales

At Approved Freight Forwarders, our expert team provides global services while specializing in Hawaii, Alaska, Guam and Puerto Rico. We leverage advanced technology to create custom shipping solutions for our customers and work diligently to ensure that your shipment arrives on time and intact, with constant communication. We are proud to be recognized for the last six years as a Top 100 3PL provider by *Inbound Logistics* magazine.



Entrusted with the world's freight

Approved Freight Forwarders is part The DeWitt Companies, a fourth-generation family-owned business that provides relocation, logistics, and freight/cargo to corporate, households, and military customers all over the world. With owned assets in Alaska, Hawaii, Guam, and the Mainland, our customers trust us for easy, affordable, and safe transportation of their goods.

Since 1991, we have been your key link to the Pacific, providing ocean and air freight, over-the-road transport, warehousing, and consolidation. With more than 300,000 square feet of space, our warehouses can accommodate a diverse set of logistics needs.

We learned long ago that customers are looking for a complete service...and we listened. Over the years, we have added project management, white-glove delivery, assembly and installation, drayage, pickup and delivery, consolidation and deconsolidation, sorting and segregation, inventory management, and most every conceivable freight and logistics service required along the supply chain.

Full circle supply chain management

With direct access to ports in Los Angeles, Guam, Hawaii, Alaska, and across the globe, our professionals know the infrastructure of the industries they serve including ocean routes, air, and the roads our trucks travel. This comes, simply,

from experience. We have been serving the freight forwarding and supply chain management industries' needs for nearly 30 years. Our goal was to create a one-stop shop for businesses of all sizes shipping cargo of any kind to anywhere in the world. Through our hard work, teams, technology, and growing network of partners, we have accomplished that objective.

Our services include:

- Transportation
- Warehousing
- Consolidation
- Sorting & Segregating
- Drayage
- Transloading
- Project Management...and much more.

Our core values

The company is built on a simple set of values. Our goal has always been to build trusting and loyal relationships. Our focus on transparency in our pricing, process, and policies is a cornerstone in helping us remain a world-class company. At Approved, safety is everyone's responsibility. From the loading dock to a customer's front door and everywhere in between—safety is part of who we are. This year, we proudly celebrated seven years without a lost time accident or injury.

Let Approved Freight Forwarders tackle your tough logistics challenges so you can focus on your core business.

ARTC Logistics, Inc.

Formerly AR Traffic Consultants, Inc. • 5 Hanover Square, Suite 202 • New York, NY 10004
212-736-8565 • artc-logistics.com



Arnold Riback
Chief Executive Officer

It is time to rebrand the old into the new to better reflect the array of software and services that ARTC Logistics provides.

Platforms

- IBM AS/400 (iSeries)
- Hosted
- Cloud

Freight Rating

- Small parcel
- LTL
- Truckload

Tracking/Tracing

Routing

- Shipment consolidation
- Pool shipments
- Parcel zone skipping

Documentation

- Domestic
- International

Analytics

- Routing opportunity
- Source origin opportunity
- Rate analysis
- Shipment compliance
- Warehouse relocation

Services

- Freight Audit and Payment
- Rate Negotiation Support
- Freight Benchmarking
- Custom Studies



We have a brand new start to 2022. As a reflection of our rapid progression and technological advances, AR Traffic Consultants is now ARTC Logistics. ARTC Logistics is the same company that you have partnered with for over 58 years. We are still committed to lowering your freight costs and providing the service and data you need to keep your business moving forward.

ARTC Logistics puts a wealth of experience to work for you. We provide our customers with a variety of software and business solutions for most transportation problems. ARTC is large enough to handle multimillion-dollar transportation spends and small enough to offer the individualized, personal service that you require. Tech support is usually one of the programmers who developed that application making quick work of resolving issues. When unique situations arise, we will often add the new component to the system. We pride ourselves on being problem-solvers for your business.

Freight Audit and Payment Services are often considered a commodity to most businesses. However, this type of data shows patterns that identify where transportation dollars are being wasted. ARTC's powerful online freight dashboard

and reporting system tracks every dollar spent and illuminates the path to where expenses are being allocated. ARTC also customizes GL coding and auditing processes according to each client's requirement. We view our customers as partners and ARTC will be there to help identify the right solution that will work best for them.

We support rate negotiation across multiple modes. Without sophisticated software and reams of data, you would never know how good the rates are for your freight. We will work with you to help select carriers and reach out to them and analyze the proposals. ARTC Logistics helps you to develop the most efficient and cost-effective direction that will quickly get your product where it needs to go.

ARTC Logistics keeps you on the right track to find and understand where all your freight dollars are going and to keep them flowing in your direction. For more information, check out our new website at:

artc-logistics.com



artc
LOGISTICS



Ascent

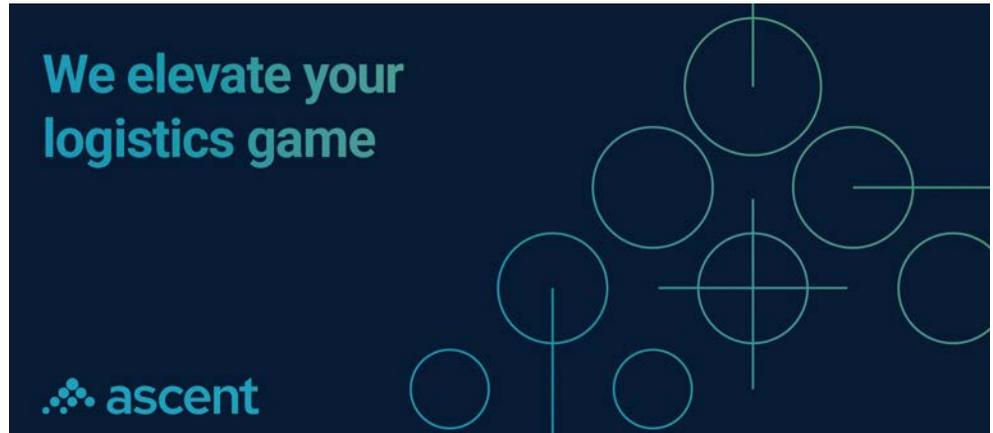
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info@ascentlogistics.com • ascentlogistics.com



Micah Holst
Chief Growth Officer

About Ascent

Ascent solves supply chain challenges for thousands of customers worldwide. With \$1.5 billion in revenue and a dedicated team of 950+ industry experts in 21 locations across North America, Ascent is a recognized supplier of the year for multiple Fortune 500 companies as well as a partner to thousands of small and medium sized businesses. The company's global reach, deep knowledge and innovative technology platform PEAK uniquely position its team to flawlessly execute in delivering goods worldwide via all modes. Ascent's #1 market share in the demanding domestic ground and air expedite market has provided it the foundation to handle even the most complex logistics challenges. Ascent's offerings include truckload, less-than-truckload, global forwarding, air charter and expedite solutions. The company performs over 250,000 trips through its bid board on an annual basis. For more information about the company, please visit Ascent's website: www.ascentlogistics.com.



The world's supply chain is constantly evolving, and shippers are searching for stability in the chaos. As a trusted partner, Ascent goes above and beyond to optimize our customers' performance and accelerate their growth. We do it by moving faster, moving with precision, and moving all over the globe. Whether you are a Fortune 500 company or a small business, our logistics experts simplify your most complicated freight challenges. In addition, we are committed to providing custom programs with highly individualized service to ensure the optimal solution, regardless of the challenge or situation.

Our team of deeply experienced logistics professionals has the knowledge and the dedication that will help our customers navigate these uncertain times. With our transparent approach to service, we keep clients informed and educated while also providing them with tools to better plan and manage their businesses through whatever challenges may arise.

Innovation Through Technology

At Ascent, we believe in combining our people's knowledge with powerful technology to deliver a seamless and intuitive experience. Our transformative digital PEAK™ platform provides customers with a multimodal technology platform that simplifies how customers, carriers and agents interact with us. This robust tool will also help our customers manage activities deeper in their supply chains, offering a live bid board with a customizable dashboard, live tracking, order visibility and advanced

analytics. At Ascent, we realize it is no longer enough to inform customers of a shipment's location or provide historical reporting. The best 3PL partners can give clients insights into their businesses that will assist with a better understanding of what may happen in the future, and that is precisely what we deliver through PEAK™.

Our Biggest Investment—Our People

While technology is critical, our people are Ascent's differentiator. We are the number one North American premium expedite provider with over 950 employees. We invest in and empower our people, which uniquely positions our team to flawlessly advise and execute the delivery of goods worldwide for our customers. Our people are known for their precision, can-do attitude, deep industry knowledge, agility, and the speed with which they communicate. The very culture at Ascent is one of partnership—both internally, with our customers and our network of best-in-class providers. Let us move for you today.



Associated Logistics Group

Corporate HQ: 2440 University Avenue West Suite 224N • Saint Paul, MN 55114
1-877-SHIP ALG • info@associatedlogistics.com • associatedlogistics.com



Committed to serving. Dedicated to shipping.

Our success is a function of our customer's success, therefore we treat our customer's logistic concerns as if they were our own. We are available all the time, we are responsive all the time—we add to our customer's bottom line and we do it on time.

During these unpredictable times, you need a 3PL that values Communication and Service Excellence at Fair Rates above all else. Associated Logistics Group's success has come from the simplistic approach of taking accountability into our own hands and delivering a customer experience far superior from that of the competition.

Our services include the following:

- Truckload
- Partial Truckload
- LTL
- Expedited
- White Glove
- Final Mile
- Heavy Haul
- Intermodal
- Drayage
- Air and Ocean
- Cross Border
- Managed Solutions
- Warehousing
- Government/Military
- API Integration Options
- FREE TMS
- Hazmat
- Ironclad 90Plus



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Atlanta Bonded Warehouse Corporation

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Sales: 678-322-3120 • info@atlantabonded.com • atlantabonded.com

Mission Statement

Our mission is to provide integrated warehousing, transportation, and co-packaging services to the food, pharmaceutical, and related CPG industries. Our goal is total customer satisfaction through continuous innovation in best practices and in technology by focusing on teamwork, integrity, and accountability, all in a safe working environment.



Atlanta Bonded Warehouse Corporation (ABW) has provided public and contract food-grade, dry and temperature-controlled distribution services for over 63 years. In 2021, ABW handled 758 million cases of product through 6.4 million sq. ft. of capacity in 15 food grade warehouse facilities across the Southeast and Southwest. This equates to 9.7 million pallets.

With our in-house carrier, Colonial Cartage Corporation, and our co-packaging expertise, ABW can build integrated solutions for your asset-based logistics needs in the Southeast, Southwest, Midwest, and Great Plains.

Multi-Client / Public and Contract Warehousing

Since its 1948 inception, ABW has offered multi-client/public warehousing services to its customers. Our customers from small to large enjoy the benefits of our superior customer service, strategic locations, and extraordinary attention to detail.

ABW has extensive experience operating contract (dedicated) facilities where either ABW or the customer owns or leases the facility, using either our Tier 1 WMS or the customer's proprietary system to drive any array of services required for the business application. Our operations routinely score best-in-network across multiple Key Performance Metrics and we have received numerous awards for operational excellence.

Transportation Services

For over 60 years, Colonial Cartage Corporation, our in-house, full-service carrier, has provided food-grade, dry and refrigerated TL, LTL, and pool distribution services. Colonial provides regularly scheduled temperature-controlled LTL delivery to all points in the Southeast, Midwest, Southwest, and Great Plains,

as well as truckload and plant support services throughout its service area. As an asset-based provider, Colonial's Services include consolidated order selection (bulk picking) and inbound consolidation to outbound cross-dock.

Co-packaging / Re-packing Services

ABW provides co-packaging and re-packing services to many of our contract and public warehouse customers. We store and manage packaging and supplies for our customers and are able to recover a high percentage of goods damaged in transit or in need of packaging corrections.

With over two decades of secondary packaging experience, and now primary packaging experience, ABW continues to grow and develop its capabilities, co-packaging or building over 8.6 million units or cases in 2021. We have experience operating:

- High-capacity, high-speed baggers and cartoners
- Overwrap, shoe box, and box pack lines
- Flex lines for shelf ready displays as well as quarter, half, and full pallet displays

What does ABW offer that others do not?

- Stability of ownership: same family for over 50 years
- A focus on our core competencies of warehousing, transportation, and co-packaging: not being everything to everybody
- A track record proving we are not interested in second place
- Long-term investments in our facilities, technology, and people
- Quick decisions: change is not patient and you need answers
- Flexibility in pricing and structure: we are interested in a fair deal for a long time



Atlantic Container Line

1-800-ACL-1235 • ACLcargo.com



Andrew J. Abbott
President & CEO

Cargo capacity for ACL's G4 vessels includes:

- 420-ton quarter ramp enables load and discharge of oversized cargo
- 28,900m² for high/heavy roll on/roll off cargo
- 1,300 vehicles
- 3,800 TEU cellular
- Unique container cell guide racking system

ACL Featured Services:

- Weekly Container and RORO Transatlantic Service
- Weekly RORO Service to and from 8 North American and European Ports
- Unique North American ports directly serving Baltimore & Halifax
- 2 UK container port choices: Liverpool and London Gateway

Unique Capabilities:

- Dedicated weekly container & RORO service to Ireland
- Fast connections to Scotland
- Easy access to interior France and Germany
- RORO connection to Helsinki & Petersburg

Follow us on:



ACL is the only Atlantic carrier that can transport both containers and oversized cargo on the same ship.

ACL's Generation 4 fleet, the *Atlantic Star*, *Atlantic Sun*, *Atlantic Sea*, *Atlantic Sail* and *Atlantic Sky* service the transatlantic trade and are the first of their kind vessels and the largest RORO/Containerships ever built. They incorporate an innovative design that increases capacity without significantly changing the dimensions of the vessel.

The G4s are bigger, greener and more efficient than their predecessors. The container capacity is more than doubled at 3,800 TEUs, plus 28,900 square meters of RORO space and a car capacity of 1,300+ vehicles. The RORO ramps are wider and shallower and the RORO decks are higher (up to 7.4 meters) with fewer columns, enabling much easier loading and discharge of oversized cargo. Emissions per TEU are reduced by 65%.

The fleet continues to employ ACL's specially designed container cell-guides on deck. This unique feature allows the Company to extend its enviable 50-plus year record of ACL ships never losing a container over the side. All containers on deck are secured in a cell guide racking system—always secure and locked in place despite the weather on the North Atlantic.

ACL's fleet of five G4 vessels dramatically improves the Company's competitiveness on the North Atlantic. The G4s demonstrate to our customers that our Parent Company, the Grimaldi Group, continues to do things differently than all of its competitors. We employ unique ships, go to unique ports and carry cargo that others cannot carry.

Since 1967, ACL has been a specialized transatlantic carrier of containers, project and oversized cargo, heavy equipment and



vehicles with the world's largest combination G4 RORO/Containerships. The Company's headquarters are in Westfield, New Jersey, with offices throughout Europe and North America. ACL offers three transatlantic sailings each week and is also the North America Agent for Grimaldi for services between North America and West Africa and between North America and the Mediterranean. The Company also offers oversized cargo service between North America to the Middle East, Far East and Oceania.

ACL's one of a kind G4 fleet constantly enhances our cargo-carrying capabilities. Combined with Grimaldi's ever-expanding service network, the G4s enable ACL to provide even more services as a high-quality container and RORO operator for many years to come.



A Grimaldi Group Company

Bender Group

345 Parr Circle • Reno, NV 89512 • 800-621-9402 • 775-788-8800
salesinfo@benderwhs.com • bendergroup.com



Steve Reid
President

Bender Group combines a small business approach with innovative and technology-based logistics solutions to help companies of all sizes improve their supply chain systems, from the manufacturing source through delivery to multiple distribution channels.

We sincerely believe in...

- Keeping our Promises
- It Ought to Be Fun to Go to Work
- Listening
- Actively seeking responsibility
- Communicating in a straight line



Founded in 1945 by Edwin S. Bender in Reno, Nevada, Bender Group has 75 years of experience in Supply Chain expertise. For almost three quarters of a century, Bender Group has provided outstanding logistics services to customers of every size and kind.

Starting with 60,000 square feet of space, Bender Group has continued to expand to over a million square feet with operations in Nevada, Virginia, and California. Bender Group offers a variety of warehouse and distribution services, international customs brokerage and freight forwarding and a complete transportation network including domestic brokerage, less-than-truckload, truckload and small parcel services.

Distribution and Omni-channel Fulfillment

Bender Group's chief focus is providing flexible distribution and fulfillment center solutions along with any related value added activities at a competitive price. We have the physical operations, information systems, customer service and expertise to handle the most complex distribution requirements including omni-channel fulfillment. With bicoastal fulfillment facilities, Bender Group offers delivery service to 99.6% of the US population within 1-3 days delivery.

Transportation

Whether you need national or regional LTL service via our core carriers, airfreight, or small package carriers or are interested in private fleet conversion, Bender Group

can help you organize and streamline your transportation needs to give you the cost-effective, on-time delivery of goods to meet your business needs.

International

Bender Group offers the full complement of services required to manage the global supply chain, including customs brokerage and freight forwarding, import and export services, and value-added expert consultation services. Bender Group knows what is required to navigate the ever-changing world of trade and tariffs, while helping you make the strategic decisions necessary to compete on the world stage.

Information Technology

When CIOs are surveyed on what would improve their development or supply chain process, the overwhelming answer is increased visibility throughout their pipeline. Bender Group provides you with state-of-the-art systems, order processing, and communications systems to help you maintain clear visibility of your inventory and transactions from anywhere.

Why Bender Group?

Our company culture fosters proactivity, accountability, and execution. As a result, our logistics professionals have a deep sense of responsibility and empowerment to meet or exceed our clients' supply chain requirements. Bender Group has the agility to quickly implement intelligent ideas and technology, effectively addressing the ever-changing dynamics of a company's supply chain.



Bettaway Supply Chain Services

110 Sylvania Pl. • South Plainfield, NJ 07080
908-222-2500 • bettaway.com



With over 60 years of industry knowledge, Bettaway leverages its experience, data, and technology to deliver smart, comprehensive supply chain solutions. Founded in 1982 by Betty and Anthony Vaccaro as a beverage distribution company, today Bettaway's broad reach, agility and scalability are unmatched, with cost-effective, reliable pallet supply services, integrated third-party logistics and specialized services including modern food-grade warehousing, pick and pack, and order fulfillment. Bettaway's portfolio incorporates four major categories: Transportation, Pallets, Warehousing, & Data Analytics.



Transportation

As a logistics provider with both asset and non-asset based 3PL solutions, Bettaway delivers flexibility and reliability. Bettaway Beverage Distributors owns and operates a modern trucking fleet, equipped with the latest state-of-the-art safety technologies, primarily serving the mid-Atlantic and Southern California regions. Bettaway Traffic Systems, our national 3PL, has over 35 years of experience, providing customers with broad reach, instant scalability and a complete managed services solution. Focused on CPG brands, principally in the food and beverage sector, we only contract with established carriers to provide reliable capacity, quality service, competitive rates and real-time tracking.

Pallets

Bettaway Pallet Systems, Inc. (BPS) is an effective alternative to traditional pallet management programs delivering innovation and introducing disruptive initiatives. We are an industry leader and pioneer in White-Wood Pallet Supply & Retrieval programs leveraging our nationwide network of 475+ active pallet depots. In 2019, BPS established a strategic partnership with PECO Pallet to expand its offering to rental pallets so customers can enjoy one management partner to oversee and execute dual pallet platforms.

Warehousing

Our modern food-grade facility, Beverage Distribution Services (BevDS), is a highly efficient and accessible food-grade warehouse located in central New Jersey less than 20 miles from the metro NY area. We are experienced facility operators utilizing the latest Warehouse Management System (WMS), security and best practices. Services include e-commerce fulfillment, food-grade storage and variety packing. Our technology-rich solutions offer clients real-time inventory reporting and visibility with an interactive web portal.

Data Analytics

As an established and accomplished supply chain service provider, Bettaway's consultants have a unique advantage through proven operational expertise to provide clients with engineered supply chain solutions focused on strong data analytics to drive optimal cost and consistency. We deliver value by helping companies execute high-performance business strategies, supported by proactive supply chain operations that ultimately deliver cost-savings, process improvement, increased productivity and profitability.



C.L. Services

4245 Intl. Pkwy, Suite 125 • Atlanta, GA 30354
800-533-3922 • 678-686-0933 (Atlanta) • clservicesinc.com

What We Stand For

In 1997, we set out to pave a new name in the transportation game. Our initial goal was to give shippers and carriers a freight brokerage service that uniquely combines the personal attention provided by a smaller brokerage with the technology and capacity of a large-scale freight management company. Today, C.L. Services continues to provide trusted transportation, while developing meaningful relationships with our carriers and customers along the way.



At C.L. Services, our experienced logistics team combines technology with dynamic industry knowledge to execute shipping solutions aimed to exceed your expectations. Our logistics professionals work diligently to ensure that your shipment arrives on time, keeping you updated every step of the way.

EXPERIENCE LOGISTICS AS IT SHOULD BE

C. L. Services opened its doors in 1997 with the goal of providing a world-class logistics service and an unmatched customer service experience, based upon our Proponsive® Approach. Since then, C.L. Services has continuously developed innovative ways to deliver tailored shipping solutions that combine the personal attention of a small 3PL, with the versatility and capacity of a large-scale freight management organization. Today, C.L. Services continues to build on the foundation laid over twenty years ago, offering trusted freight services and innovative solutions, backed by the industry's most dynamic team.

ONE COMPANY TO MEET ALL YOUR NEEDS

Trusted by Fortune 500 companies and small businesses alike, C.L. Services' commitment to 24/7/365 customer service and reliability makes us a top choice in the industry. Our innovative training program keeps our employees updated on the latest technology and market trends, helping our team have knowledgeable and informed conversations to help save you time and

money. Our carrier compliance division continually monitors our carrier network to maintain our industry leading standards, allowing us to leverage our 45,000+ strong carrier network and maintain a 95% on-time standard.

C.L. Services is a full-service, asset-based 3PL, offering truckload, LTL, refrigerated and dry van, intermodal, cross-docking, container services, trailer pull and more specialized freight services. If you have freight to move, we have the equipment to move it on-time and in budget.

STRESS-FREE LOGISTICS

When you work with C.L. Services, you work with the future of logistics. We quickly evaluate and choose from the best rates, the best carriers, the best pick-up and delivery times, all in one place and on-demand. We book your load with the C.L. Services carrier match program. You will feel confident your freight is in reputable hands every time. We monitor your shipments from pick-up to delivery; we know where it is, shipment status, and when it will be there! We believe in transparent, Proponsive® Logistics. Your job gets easier when you turn it over to the pros at C.L. Services.

- Full transparency with track and trace 24/7/365
- A select group of consistent people assigned to your account
- Live after-hours communication
- Freight optimization technology
- Expert consulting services
- Expedited & guaranteed shipments



Cass Information Systems, Inc.

13001 Hollenberg Drive • Bridgeton, MO 63044
314-506-5500 • cassinfo.com

Cass is the leading provider of freight audit, payment and business intelligence services, leveraging over 60 years of experience in providing solutions to major corporations having complex transportation payment and information needs.

By understanding our customers' critical transportation and accounting processes, we provide business intelligence solutions that help create a competitive advantage through reduced costs, increased efficiency, and better decision making capability.

In business since 1906 and processing freight invoices since 1956, Cass continues to offer stability, security, and expertise in the freight payment market.

Cass' goal is to not just duplicate existing systems but to provide enhancements to enterprise processing systems that will help to maximize a customer's supply chain efficiency. Cass' team of industry experts performs an in-depth analysis of your unique needs to provide the best solution and value.

The Value of Your Cass Relationship

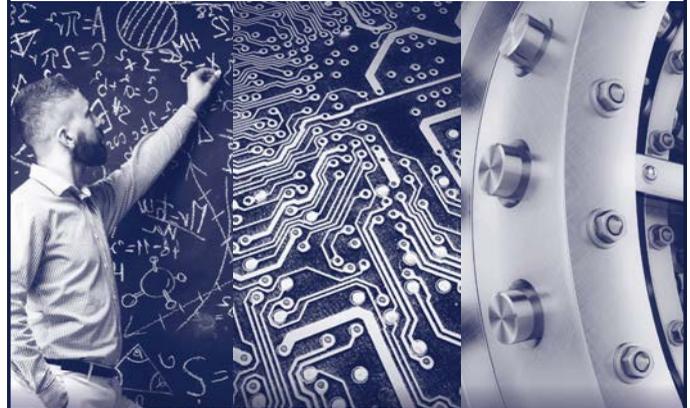
Cass provides a strategic partnership that delivers increasing value over time:

- Savings are achieved through invoice audits, process efficiency, and the use of business intelligence
- Supply chain finance programs improve working capital for shippers and carriers
- Best Practice Processes
 - Automation
 - Shipment rating and matchpay systems
 - Mode-specific auditors
 - Exception management
 - Trend analysis
 - Account/carrier management
 - Secure payments
- Business Intelligence
 - Systems integration
 - Custom business intelligence
 - Benchmarking
 - Accrual and general ledger data
 - Interactive data visualization dashboards
- Carrier services
 - Freight bill inquiry
 - Exception analysis

Efficiency and Visibility

Cass provides you with processing efficiencies that help reduce wasted time and resources. We also provide the latest technology and scalable solutions to grow

The Power to Deliver: **Transportation Spend Solutions**



Solving Complex Needs

Providing Leading Edge Solutions

Ensuring Financial Security and Stability



...the leader in freight bill audit, payment and business intelligence services.

with your needs. Our global business intelligence platform provides extensive visibility to actionable data for transportation spend management. And, we continue to develop new data services for our customers.

Experience and Service

We substantially invest in personnel and the required technology to ensure we provide superior customer support and service in our relationships. Our Customer Service Team includes an assigned Account Manager who manages the customer relationship with representatives from systems, operations and carrier relations. This level of customer support provides the highest echelon of quality services, and the most extensive customer oriented focus in our industry.

Contact Cass today to learn more about the freight audit, payment and business intelligence solutions that you can count on today and into the future.



CenterPoint

Corporate HQ: 1808 Swift Drive • Oak Brook, IL 60523
630-586-8000 • centerpoint.com



Bob Chapman
CEO

We're Built to Solve It

CenterPoint is an industrial real estate company made up of dedicated thinkers, innovators and leaders with the creativity and know-how to tackle the industry's toughest challenges.

And it's those kinds of problems—the delicate, the complex, the seemingly-impossible—that we relish most. Because with an agile team, substantial access to capital and industry-leading expertise, those are exactly the kinds of problems we're built to solve.



We have a track record of closing the most complex industrial real estate deals ever, so you can count on us to deliver forward-thinking solutions for your development, acquisition and management needs.

Leading Expertise

Our wide-ranging expertise enables us to complete complex industrial real estate projects reliably and quickly. Backed by more than three decades of experience, we are an innovator in the investment, development and management of industrial real estate and multimodal transportation infrastructure.

Because we believe that the most efficient approach to shipping and distribution requires thoughtful diversification across multiple modes of transportation, CenterPoint has multifaceted experience in the development and redevelopment of inland and intermodal ports. Combined with our relationships with railways and logistics providers and our expertise in site selection, we're exceptionally equipped to meet the growing demand for transportation and logistics solutions in key markets across the country.

CenterPoint's National Reach

CenterPoint is highly active in the investment, development and management of industrial real estate and multimodal transportation infrastructure in the United States. We have a growing national

platform that targets port and intermodal markets around the country. Whether you are looking to buy, sell, lease or build, our expert team is ready to tackle your supply chain challenges.

Local Market Experts

As a leader in logistics infrastructure and transportation-advantaged properties, CenterPoint has an active presence in strategically located ports and distribution hubs throughout the nation. In each of our markets, we can deliver on your industrial real estate requirements, including traditional build-to-suits, world-class intermodal centers, container storage facilities, state-of-the-art distribution centers, light manufacturing facilities, campus and park development, data centers and more.

We bring localized expertise, broker relationships and community connections to all our key markets. Through our focused industrial real estate activities spanning investment, development and asset management, we help our clients and our partners become more successful—maximizing the strategic value of their real estate assets and providing them with more efficient access and proximity to ports, rail terminals, major interstates and population centers.



CFI

4701 E 32nd St. • Joplin, MO 64804
800-641-4747 • Customer.Assistance@cfidrive.com • cfidrive.com



Greg Orr
President

Mission

We believe people drive possibility. Our vision is to inspire the best and brightest to invent the most creative transportation solutions, drive progressive business strategies, and promote an inclusive and respectful environment that exceeds all expectations.

“We have listened to our customers and reorganized our companies to provide a more complete array of services under a common brand, streamlined lines of communication, and more convenient and responsive customer experience,” said Greg Orr, president of CFI. “With a strong portfolio of asset-backed, non-asset services as well as superior coverage of North America, we believe that CFI today offers an elite transportation and logistics experience providing significant competitive advantage.”

CFI, an operating company of TFI International Inc. (NYSE and TSX: TFII), a North American leader in the transportation and logistics industry, has reorganized and expanded into a portfolio of five well-defined service categories: three asset-based services Truckload, Dedicated, and Temp-Control, as well as two non-asset services Mexico and Logistics.

By the numbers:

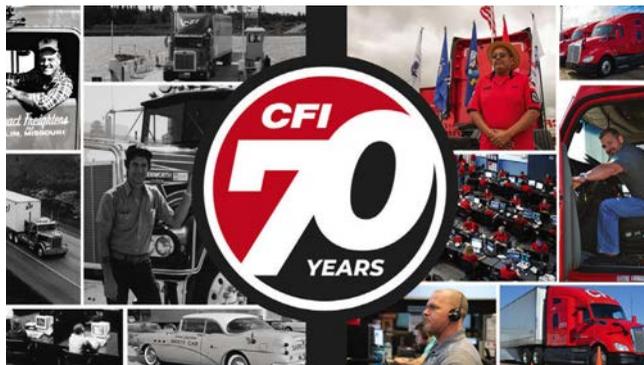
- 3,720 professional drivers
- 3,800 employees
- 11,000 trailers
- 3,000 trucks
- 200 C-TPAT certified Mexico carrier partners

TRUCKLOAD

Driving together since 1951, CFI Truckload built a solid foundation of 70 years, as a progressive and stable partner, providing an industry-leading 97% on-time service to our supply chain partners. This fleet delivers long-haul and regional solutions and is known for on-time, damage-free deliveries. Truckload is driven by a diverse group, proud to include an industry-leading 14 percent military veterans and 14 percent female drivers.

DEDICATED

Our CFI Dedicated service provides high-value dedicated transportation solutions throughout North America. Through integrated partnerships, CFI Dedicated provides a variety of custom transportation services including multi-stop truckload, closed-loop point-to-point direct service for manufacturing plants, warehouses, distribution centers, and store-door delivery. In addition to dry-van truckload, CFI Dedicated provides refrigerated, flatbed, specialized trailers, and lift-gate services to meet specific, purpose-designed customer supply chain needs.



TEMP-CONTROL

Not too hot and not too cold, our Temp-Control service provides consistent, reliable transportation for goods that have sensitive climate control needs. Our network is built to provide a dependable and safe experience for customer freight from pickup to delivery. With a couple recent acquisitions, we are poised for growth.

MEXICO

Established in 1985, CFI Mexico is a reliable logistics and cross-border service built on trusted partnerships with Mexican carriers for over 36 years. Inbound cross-border goods from Mexico are seamlessly managed and expedited for delivery into distribution centers, where they are staged for order fulfillment and final-mile delivery via an owned intra-Mexico LTL network. Additional services include transloading, truckload, intermodal, consolidation, and deconsolidation.

LOGISTICS

CFI Logistics provides a complete menu of supply chain services. These solutions include full-truckload, less-than-truckload, port services, warehousing, expedited, air freight forwarding, Autogistics (specific services for Tier 1 automotive suppliers and manufacturing plants), as well as other trucking services including cross-border Canada to Panama. From specialized and heavy haul, to project and field delivery, our carriers are ready to solve your transportation needs.

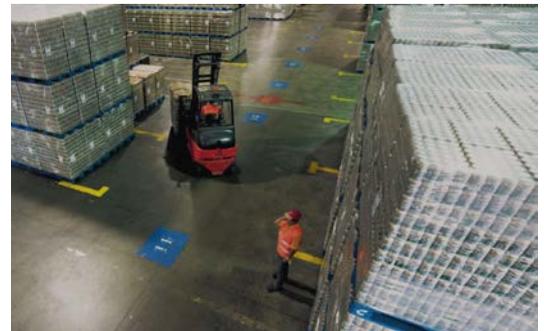


CHEP

Instagram @chep_global • **Twitter** @CHEPna
LinkedIn www.linkedin.com/company/chep/ • 800-243-7872 • chep.com

Why CHEP

- Trusted supply chain partner of the world's most recognizable brands and companies of all sizes, across consumer goods, retail food & beverage, bulk liquid, automotive and other industries
- Unmatched global network of consistent quality pallets and containers that enable suppliers, manufacturers and retailers to reliably move goods from raw material source through point-of-sale
- Recognized globally as a sustainability leader delivering greater efficiency through collaborative share and reuse program
- Over 60 years of supply chain experience, with proven customer success stories and digital order management
- Innovative and safe solutions for your people and your products including collaborative transport solutions leveraging CHEP's digitized solutions



CHEP helps move more goods to more people, in more places than any other organization on earth.

Its pallets, crates and containers form the invisible backbone of the global supply chain and the world's biggest brands trust CHEP to help them transport their goods more efficiently, sustainably and safely.

As pioneers of the sharing economy, CHEP created one of the world's most sustainable logistics businesses through the share and reuse of its platforms under a model known as 'pooling.'

CHEP primarily serves the fast-moving consumer goods (e.g. dry food, grocery, and health and personal care), fresh produce, beverage, retail and general manufacturing industries.

CHEP employs approximately 11,500 people and it believes in the power of collective intelligence through diversity, inclusion and teamwork.

CHEP owns approximately 345 million pallets, crates and containers through a network of more than 750 service centers, supporting more than 500,000 customer touch-points for global brands such as Procter & Gamble, Sysco, Kellogg's and Nestlé.

CHEP is part of the Brambles Group and operates in approximately 60 countries with its largest operations in North America and Western Europe.

Contact CHEP

For more information, visit the company's website at www.chep.com or follow us on Instagram @chep_global, Twitter @CHEPna and LinkedIn www.linkedin.com/company/chep/.

Please also check out our YouTube channel www.youtube.com/CHEPSupplyChainSolutions.

For information on the Brambles Group, visit www.brambles.com.



A Brambles Company

CJ Logistics America

1750 S Wolf Road • Des Plaines, IL 60018
cjlogisticsamerica.com



Kevin Coleman
Co-CEO



Sung Yup Suh
Co-CEO

CJ Logistics provides integrated supply chain services for customers around the world, maximizing customer value through continuous improvement and innovation.

DELIVERING CUSTOMER VALUE:



Reduce Total System Cost



Improve Service to Customers



Transform Business Processes



Facilitate Growth and Change



1750 S Wolf Road
Des Plaines, IL 60018

cjlogisticsamerica.com



WE DESIGN THE FUTURE

Through advancements in technology, engineering, systems and solutions, we are focused on optimizing the total supply chain, taking performance to new heights and reaching new destinations. The future is complex, diverse and rapidly changing. The opportunities for supply chain leadership are more exciting than ever before.

Integrated Global Solutions

Our continuous improvement methodology is focused on customer value creation. End-to-end visibility across a global network fuels innovation and optimization potential.

TES (Technology, Engineering, Systems & Solutions)

Designed for both today and the supply chain of the future, our solutions feature network simulation, artificial intelligence (AI), automation, big data, internet of things (IoT), advanced material handling equipment, autonomous vehicles, conveyor systems and robotics.

Transportation Solutions

Our expertise and tools help customers explore scenarios, predict events, identify opportunities and optimize networks. Freight forwarding, asset-based and cross border transportation services can be integrated with our managed transportation and warehousing services.

Warehouse Management

Known for our leadership of large-scale warehouse operations, we provide customized solutions with a wide range of size and complexity, and have expertise in highly regulated industries and environments.

E-Commerce & Omnichannel Solutions

We provide flexible fulfillment and distribution solutions that support manufacturers and retailers in delivering goods across a growing number of channels, connecting sales and supply chain strategies and supporting e-Commerce growth.

Supply Chain Consulting

We provide a variety of consulting services with expertise in supply chain analytics, network modeling, engineering, technology and operations. Our experience serving leading global companies across a variety of industries enables the insightful advancement of leading practices.

Corporate Traffic Logistics

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DRY VAN

MANAGED LTL

INTERMODAL

DRAYAGE

SMARTGISTICS™
TECHNOLOGY



Corporate Traffic Logistics began in the imaginations of three brothers who dreamed of achieving success in the same industry as their father, who ran a trucking company. Chris, Chad, and Craig Cline went on to start Corporate Traffic in 1992 with the goal of creating a worldwide logistics company their father would be proud of. Today, the dream is real—we're still family owned and operated, and we deliver the goods, even when others can't.

We have pioneered a dual-service approach allowing our trucks and logistics services to work in tandem. And we deliver your goods on time, intact and on budget.

Known internationally for a comprehensive range of capabilities, Corporate Traffic has built a reputation for offering a higher level of service, owning the entire logistics process from start to finish.

Our accomplished professionals work with cutting-edge technology to make doing business with Corporate Traffic easy, rewarding and remarkably affordable. We work hard to build strong relationships with our clients, and constantly seek better ways to meet their needs and exceed expectations, whether by full truckload, less-than-truckload, intermodal services or dynamic technology.



COSCO SHIPPING Lines (North America) Inc.

100 Lighting Way • Secaucus, NJ 07094
866-830-2550 • elines.coscoshipping.com/usa



COSCO SHIPPING brings the highest quality of ocean cargo transportation services to every corner of the globe, with one of the largest and greenest fleets making frequent and timely calls to the busiest ports worldwide. COSCO SHIPPING delivers your containerized cargo quickly, economically and securely, interfacing with rail, road, barge, air and more, with advanced equipment and technology leading the way to absolute supply chain efficiency. And, there is no other ocean carrier who knows China better.

Your China Partner

With long and detailed experience in moving cargo in and out of the interior of China, COSCO SHIPPING is your guide to selecting the right feeder services, barge, railroad and trucking companies. With local offices and representatives positioned strategically in all of the manufacturing and production cities across China and Asia, COSCO SHIPPING can save you time, money and paperwork in getting your shipments prepared and on to port locations. COSCO SHIPPING truly is your China partner, with accurate and comprehensive advice available to you by phone, fax, web and other sources on a real-time, around-the-clock basis. No matter if you are just beginning to trade with China or are an old China hand, COSCO SHIPPING can add value to your supply chain.

E-Lines is E-Sweet, Includes the Customer Portal

COSCO SHIPPING provides you with the tools to make the shipping process

seamless, easy and efficient. Our E-Lines web service helps you check routes and rates, collect details and documentation, share data, generate bills of lading, track and/or redirect inbound and outbound shipments, and maintain accurate metrics and reporting. Our E-Lines e-suite saves you time, effort and aggravation, and is backed by a global network of ocean cargo specialists ready 24/7 to assist in any part of the process. See it and try it through the COSCO SHIPPING Customer Portal at support.cosco-usa.com

The Ocean Alliance

COSCO SHIPPING is part of the Ocean Alliance, the largest operational agreement ever made between shipping companies. With more than 40 maritime services, we will be sharing our fleet with the largest Asian shipping companies. By offering more ports and more direct calls, as well as better transit times, we will provide our customers with unmatched quality services. This offering is a cornerstone of our strategy as it reinforces our competitiveness and strengthens our position as a key player in the shipping industry.

We Deliver Value

COSCO SHIPPING doesn't just move ocean cargo, we make moving ocean cargo a better part of your bottom line. 50 main-line services, 85 offices in 160 countries serving 1,000 ports around the globe all add up to a world-class ocean carrier with worldwide capabilities.

Contact COSCO SHIPPING today!



CT Logistics

12487 Plaza Drive • Cleveland, OH 44130-1084
216-267-2000 • sales@ctlogistics.com • ctlogistics.com



Allan J. Miner
President

The associates of CT Logistics are committed to providing superior supply chain business services and software solutions.

Our leadership has been earned with over 99 years of client confidence and trust.

ISO 9001:2015
SOC II



CONFIDENCE

CT provides more than 99 years of experience with comprehensive, broad supply chain accounting and business intelligence solutions tailored to meet your company's unique needs. We give you the confidence to trust CT, a premier provider in freight bill audit and payment, along with transportation management services. It is our desire to assist you in managing your transportation spend and data so you can focus on what matters most, which is efficiently and effectively running your supply chain management programs.

TRUST

Small firms to Fortune 100 corporations across the country, and around the globe, have trusted CT to assist them in making solid informed decisions regarding their freight bill audit and payment challenges. Our team of professionals has been instrumental in assisting our clients by utilizing our expertise and technology to maximize their ROI and provide the flexibility they need to compete in an ever-changing, global marketplace.

LEADERSHIP

CT is a leader in the freight bill audit, payment and transportation management services industry. CT's portfolio of software solutions includes: our TMS software, CTLionSM, our customized freight audit & payment system, AuditPaySM; our rating

and routing program, FreitRaterSM, and our exclusive Managed Transportation program, TranSaverSM. We take paths least explored to find solutions that will keep your company abreast of shifting business environments and opportunities to remain ahead of your competition.

CONFIDENCE. TRUST. LEADERSHIP. TRADITIONS SINCE 1923

They've become part of an important 99-year tradition that our clients have come to rely on when partnering with us. But just as important is the future the CT team will help you build. Our services and software are constantly evolving to provide you with the latest leading-edge tools and technology with user-friendly applications that will help manage and reduce logistics costs while adding value and more to your bottom line.

Visit www.ctlogistics.com for more information about our firm. Or call (216) 267-2000 Ext. 2190 to speak with one of CT Logistics' knowledgeable representatives regarding your company's freight transportation, logistics or global supply chain challenges.



Confidence, Trust, Leadership, Traditions since 1923.



CTSI-Global

1 South Prescott • Memphis, TN 38111
888-836-5135 • solutions@ctsi-global.com • ctsi-global.com



J. Kenneth Hazen
CEO

Total Logistics Technology + Intelligence

Founded in 1957, CTSI-Global solves supply chain challenges by transforming logistics data into actionable insights.

Services

- Logistics Management
- Honeybee TMS
- Spend Management
- Strategic Data

Locations

- Memphis
- Atlanta
- Austin
- India
- Ireland
- Singapore

In a world of complex supply chain data, go Global.



Your Global Logistics Ecosystem

CTSI-Global is the **largest private freight audit tech provider in the world**, processing \$15 billion in transactions every year. Versatile logistics management, robust Honeybee TMS, legendary spend management, and analytical Strategic Data create end-to-end supply chain solutions that fit your business. Our tech solutions automate processes, improve performance, and decrease transportation costs for national, regional, and global shippers.

We personalize our logistics ecosystem to the needs of your company and industry. We support clients from all industries, from life sciences to electronics, aerospace to automotive, and retail to 3PL. Our dedicated business analysts provide tactical support and all-inclusive business reviews.

Logistics Management

- Experts optimize your logistics strategy while providing full visibility, navigating the intricacies of your supply chain.

Honeybee TMS

- Comprehensive TMS to plan and execute shipments: Manage orders, optimize loads, select carriers, tender shipments, manifest parcels, track shipments, and manage claims.

Spend Management

- Eliminate payment errors, save time and money, and offload contract management with the most advanced global freight audit and payment.

Strategic Data

- Business intelligence dashboards and benchmarking tools empower you to visualize, synthesize, and analyze trends in your shipping data, centralized.

Your business depends on timely, accurate, and complete visibility to execute shipping and manage transportation spend. Invest in CTSI-Global to reduce your costs and stay competitive in the global marketplace.



DAT

8405 SW Nimbus • Portland, OR 97008
800-551-8847 • dat.com



Claude Pumilia
President & CEO

DAT Freight & Analytics has provided the most accurate insights into truckload markets since 1978. With the deepest and broadest data in the industry and the largest on-demand freight marketplace in North America, DAT is the source for market trends and data insights for shippers, brokers, carriers, media and industry analysts alike.

“At DAT, we exist to remove the uncertainty from freight with cutting-edge technology, data analysis and unrivaled intelligence. We’ve seen unprecedented pressure on the industry and are dedicated to meeting the needs of our customers during this difficult period. We aim to be a partner to the industry, and have our data provide a level of certainty during these otherwise volatile times.”

- Claude Pumilia,
President & CEO



DAT Freight & Analytics removes uncertainty from transportation and logistics. As North America’s largest on-demand freight marketplace, DAT sits at the intersection of commerce and fuels the movement of freight through data and automation.

DAT iQ provides transportation analytics that reduce costs, increase efficiency and profitability, and enable shippers to take charge of their logistics network. DAT iQ’s rate and capacity analytics, performance benchmarks, custom reporting, and APIs are powered by the most comprehensive, accurate data in the industry.

In 2021, DAT databases encompassed \$125B in annual freight spend. Since the platform’s inception, DAT iQ includes over half a trillion in freight spend data.

Rateview provides the going rate on virtually every truckload lane and equipment type in U.S. and Canada by mode (dry van, flatbed, temperature-controlled). 3-day rate averages and 13-month rate histories are available at the 3-digit ZIP level.

Ratecast delivers 7-day and 52-week rate predictions with 95% accuracy across 7 million daily predictions. Market Conditions Index (MCI) provides a weighted truckload capacity index by regional market for the current day and the previous week and month, as well as forecasts for the coming week.

Benchmark Analytics delivers insights on transportation performance throughout a shipper’s entire network. Benchmark Analytics provides North America rate insights aligned with specific freight characteristics (e.g. hazmat, expedited, multi-stop, inbound vs. outbound, etc.), and compares them to market benchmark spot and contract rates for truckload and LTL. Fine-grained segmentation by lane, region, carrier, length of haul, and more allow transportation teams to drill into specific network issues for root cause analysis.

With DAT iQ, transportation and logistics teams can create flexible routing guides, manage costs, develop a robust carrier portfolio, and achieve the operational agility needed to stay ahead of the market and navigate volatility with confidence.



DDC FPO

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info@ddcfpo.com • ddcfpo.com



Jan Trevalyan
CEO

As a strategic partner for the transportation and logistics industries, DDC FPO's mission is to deliver business process solutions that empower clients to focus on core competencies and achieve their goals.



DDC Freight Process Outsourcing, or “DDC FPO,” serves as a strategic business process outsourcing (BPO) partner for today’s leading transportation and logistics providers, including 50% of the top less-than-truckload (LTL) carriers as ranked by revenue.

Recently named as one of the Fastest Growing Companies in America by Inc. Magazine, DDC FPO processes approximately 300,000 shipments per day between 33 countries, and is responsible for one-third of North America’s LTL billing.

DDC FPO’s Solutions Include:

- Freight Billing, including AI-powered DDC Intelligence
- DDC Sync, ft. smart mobile app and web portal
- Multilingual Customs Brokerage Processing
- Customer Care, including Inside Sales
- IT Outsourcing
- Freight Rate Auditing

With DDC’s data-based, goal-driven front and back office solutions, companies can access data hours ahead of their competitors and save 40-60% of operational costs on average. The reliable business continuity, labor elasticity, technology interoperability,

rapid processing speed, record-high accuracy, and long-term cost containment customers experience are all reasons why DDC continues to be the most trusted BPO partner for freight.

As the freight-focused member company of The DDC Group—a worldwide network of BPO companies established in 1989—DDC FPO is able to serve clients in over 30 languages across North America, UK, Europe, and Asia-Pacific.

More About The DDC Group

With over 30 years of proven business process excellence, The DDC Group has guided clients through globalization, market fluctuations and technological determinism.

Our wide array of resources, innovative technologies, proprietary workflows, subject matter expertise, and deep connections with key influencers in strategic regions and sectors allow us to deliver services in a uniquely flexible and reliable framework that maintains both unyielding business continuity and service level agreements despite market volatility.

Across all of our member companies, DDC’s 5,800 industry-trained subject matter experts apply their decades of experience to achieve compelling results for each of our clients worldwide.



Descartes Systems Group

International: 519-746-8110 x 202331 • North America: 800-419-8495 x 202331
info@descartes.com • descartes.com



Edward J. Ryan
Chief Executive Officer

Mission Statement

By combining innovative technology, powerful trade intelligence and the reach of our network, Descartes delivers the industry's most complete offering of cloud-based logistics and supply chain management solutions.

Proven Expertise

With thousands of customers worldwide, Descartes has a proven track record of helping companies drive logistics value by automating processes, enhancing service, improving profitability and ensuring compliance. Descartes' headquarters are in Waterloo, Ontario, Canada and the company has offices and partners around the world.

Transportation Management

- Shipper TMS
- Real-time Visibility
- Capacity Matching
- Retail Distribution
- Parcel Shipping
- Freight Broker TMS
- Dock Scheduling & Yard Management
- Data Analytics for Transportation Management

Routing, Mobile & Telematics

- Route Planning & Optimization
- Dispatching & Tracking
- Mobile Apps
- Telematics & Compliance
- Appointment Scheduling
- Fleet & Driver Performance Management
- Data Analytics for Routing, Mobile & Telematics

B2B Connectivity & Messaging

- Logistics Messaging
 - Air
 - Ocean
 - Road
 - Express and Postal
- Commercial/B2B Messaging
 - B2B
 - Order-to-Cash
 - Procure-to-Pay
 - Supplier Compliance
 - EDI-Managed Services
- Customs Messaging
 - Customs Authority Connectivity
 - Broker Connectivity

Customs & Regulatory Compliance

- Security Filings
 - North America
 - EMEA
 - LatAm
 - APAC
 - ROW
- Customs Declarations
 - Canada
 - United States
 - Europe
- Product Classification & Duty Determination
- Denied Party Screening
- Export Compliance



- Other Government/Industry Programs
 - Partner/Other Government Agencies
 - Industry Program Support (CSA, C-TPAT, EU Green Lanes)
 - Ocean Regulatory Services
- Foreign Trade Zone (FTZ) Management

Broker & Forwarder Enterprise Systems

- Digital Customer Experience
- Shipment Management
- Customs Compliance
- Global Price Management
- Accounting and Billing
- Warehousing and PO Management
- Shipment Portal
- Classification
- Denied Party Screening
- LSP Lead Generation

Global Trade Intelligence

- Product Classification & Duty Determination
- Denied Party Screening
 - Screening and Sanctions Compliance
 - Audit and Resolution
 - Sanctioned Party Content
- Export Compliance
 - Export Classification
 - Controlled Technology
 - Export Automation
- Duty and Tariff Data
- Import/Export Data & Trade Research
- Global Trade & Supply Chain Intelligence

Ecommerce Shipping & Fulfillment

- Ecommerce Connectivity
- Warehouse Management
- Shipping
- Home Delivery

DF Young

1235 Westlakes Drive, Suite 305 • Berwyn, PA 19312
Phone: 610-725-4000 • Fax: 610-725-0570 • dfyoung.com



A. Wesley Wyatt
President and CEO

Mission Statement:

DF Young's mission is to always look at our clients' world through fresh eyes. With a strong commitment to our own staff that inspires creative solutions to international logistics, we set the stage for superior customer service that removes obstacles, builds trust and makes our customers' world more manageable.

DF Young Services

- Air Services
- Ocean Services
- Ground Transportation
- Customs Brokerage
- Security Management
- Documentation
- E-Business

Contact:

Steve Giampapa
Vice President of
Operations
610-725-4000
steve.giampapa@dfyoung.com

DF Young brings over 100 years of experience and creative thinking to integrated logistics services and complete supply chain management. Our specialized business units:

Automotive

For 85 years we've served automotive manufacturers in NA, SA, Europe, Japan and Australia, and work closely with the largest Ro/Ro carriers. Full Electronic Interface capabilities and ISO Registration. Services are geared to:

- Prototype and exhibition vehicle shipments
- Fully and semi-knocked-down shipments
- Built-up vehicle shipments

Commercial Goods

Full front- and back-end services support multi-national manufacturers, international distributors, retailers and wholesalers. Includes Ocean/Air Import and Export and Import Customs Brokerage.

Front-End Services:

- Import/Export flow and distribution
- Quality Assurance program

Back-End Services:

- Vendor direct inventory
- Reverse logistics
- Store setup and fixtures

Supply Chain Services:

- Sole-source provider
- Just-in-time pick/deliver
- Real-time tracking
- Simplified, competitive pricing
- Consultation services
- Full logistics services
- Total Quality Assurance
- Performance metrics/reports

Food/Humanitarian Aid

As one of the world's oldest companies providing this vital global service, we work closely with international relief and U.S. Government agencies. We provide computer recordkeeping, documentation and complete logistics solutions.

Foreign Military Service

As a key logistics and shipping resource for Foreign Military Sales (FMS) since the inception of the U.S. Government Security Assistance Program, we provide full service support to participating foreign countries for all material handling and shipping.

Services include:

- Air and ocean freight shipping and/or charters
- Export licensing, documentation and packing
- Explosives call forward
- HazMat processing
- Inland freight services
- Repair/return processing
- Materials tracking/tracing

Petrochemical

DF Young handles the distribution of oil well supplies and project cargoes that are purchased and shipped to major petrochemical manufacturers worldwide.

Services include:

- Charters
- Contract management
- Purchase order fulfillment
- Documentation
- Online reporting
- General and project cargo
- Hazardous materials
- Air, ocean, land and rail transportation

Pharmaceutical Sample Distribution

DF Young maintains a Dedicated Pharmaceutical Division with highly trained operations and customer service teams specializing in the pharmaceutical industry. They provide a significant cold chain and launch experience.

Services include:

- PDMA compliance
- Pharma-specific packaging, labeling and transportation
- Convenient, time-specific delivery windows
- Field inventory transfers
- Agent service center providing real-time status updates
- Customized reporting for all service and financial requirements
- Cold chain warehousing and storage



Dimerco Express Group

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marketing@dimerco.com • dimerco.com



Jeffrey Shih
Chief Executive
Management (CEM),
Executive Management
Board (EMB)

Global Shipping Through Asia-Pac, and Beyond

The majority of our global shipping projects connect Asia's logistics and manufacturing hubs with each other and with North America and Europe. Dimerco connects Asia with the world like no other global 3PL.



Mobile Intelligence
Logistics Service
Provider

50th
ANNIVERSARY



Dimerco integrates air and ocean freight, trade compliance and contract logistics services to make global supply chains more effective and efficient. Started from a single location in Taiwan in 1971, we now serve customers in 65 countries from 160+ offices, 80+ contract logistics operations (4.2 million sq. ft), and 200+ strategic partner agents. Services are offered throughout China, India, Asia Pacific, North America, and Europe.

What makes us different?

ASIA-PAC Focused

Strong relationships with top Asian air/ocean carriers give you the capacity you need for ongoing & emergency freight. We are a top 20 forwarder by volume with all major Asian airlines and ocean carriers. Armstrong & Associates named Dimerco a Top 10 Asia-Pac 3PL by air freight volume.

Built for SPEED

Dimerco started as an air freight forwarder serving companies with time-critical freight. We welcome complex, time-sensitive global shipping projects. It's our heritage. Dimerco's multi-year average for on-time delivery of time-critical shipments for the electronic industry is 98+%.

Digital DNA

Historically, Dimerco has invested an average of 3.5% of gross profit yearly to digitize and automate global shipping processes. Our portal gives you the 24/7 visibility you need to stay informed, empowered and in control of your supply chain.

Humble Spirit

We work quietly, behind the scenes, to keep your supply chain running smoothly. We don't seek recognition, but appreciate it when it's given. We're humbled by Dimerco's achievements during our first 50 years. Our continued progress allows us to provide associates with professional growth opportunities and to improve lives in the communities where we work.

To start a discussion or to receive a quote, visit Dimerco.com

Distribution Technology

1701 Continental Blvd. • Charlotte, NC 28273 • Phone: 704-587-5587 • Fax: 704-587-5591
rcantelmo@distributiontechnology.com • DistributionTechnology.com



(Left to right): Tom Miralia, President & CEO; Rock Miralia, Principal Founder & Chairman of the Board; Mark Miralia, Vice President



We pride ourselves in offering each customer a unique, unparalleled client experience that sets the industry standard in reliability, accuracy, and dependability. Our goal is to develop robust, long-term relationships with each customer to improve and enhance their business processes—ensuring success and exceeding expectations every single day.

For over 50 years, Distribution Technology has helped businesses distribute their products globally with exceptional care, accuracy, and efficiency.

Today, a team of 250 dedicated staff utilizes modern technology and processes to help customers control distribution costs, increase speed to market, and make multi-channel shopping experiences more convenient and streamlined for the end user.

With capabilities to store and efficiently deliver retail goods, raw materials, food products, e-commerce, and more in our 1.2 million square ft. collection of distribution centers, we excel in exceptional third-party logistics, warehousing, and transportation across a variety of industries, supporting both B2B and B2C operations.

Channels We Serve

- Mass Retail
- Fast Moving Consumer Goods
- Industrial Materials and Products
- General Merchandise
- Building Materials
- Paper Products
- Specialty Chemicals
- Specialty Grocery, Beverage, Confections

End-to-End Solutions

Warehousing. Our facilities are equipped with temperature-controlled, food-grade, secure storage capacity—including additional storage for chemicals and a designated area for hazardous or flammable materials.

Transportation Management. We take the frustration and hassle out of transportation, and by using our expertise in freight consolidation, we leverage multi-client volumes to collectively save money—improving efficiency, reducing transportation expense, and creating value that benefits our entire customer base.

Manufacturing Support. We work with manufacturing clients synchronizing the flow of raw materials and work-in-progress to support just-in-time production, along with managing finished goods storage with flexible warehousing at less overhead and capital expense. This ensures you meet your promises to your customers.

Imports. With decades of experience handling imports and exports of products and raw materials, we have the ability to streamline hundreds of container floor loads weekly, allowing you to optimize your own capacity as needed.

Direct Rail Access. Our facilities are strategically located with rail-served direct access to the Norfolk Southern Railroad, giving you the advantage of seamless transloading through our DC from truck to boxcar, boxcar to truck, or to container.



Distribution
TECHNOLOGY

Echo Global Logistics

600 West Chicago Ave., Suite 725 • Chicago, IL 60654
800-354-7993 • info@echo.com • echo.com



Doug Waggoner
CEO

Transportation Simplified

Services Offered:

- Managed Transportation
- Truckload
- Partial Truckload
- LTL
- Intermodal
- Expedited
- Small Parcel
- International Air & Ocean



Echo Global Logistics is a leading provider of technology-enabled transportation and supply chain management services. Echo began in 2005 with one objective—to simplify transportation management. From coast to coast, dock to dock, and across all major modes, we connect businesses that need to ship their products with carriers who transport goods quickly, securely, and cost-effectively. Echo simplifies the logistics process so our clients can focus on what they do best. Echo's industry leading EchoAccelerator platform powers EchoShip for shippers and EchoDrive for carriers, providing technology at your fingertips and experts by your side.

Relationships

Echo has built solid partnerships with over 50,000 carriers, creating a robust network that matches the needs of our shippers with the needs of our carriers. Our capacity and geographic coverage allow us to move 16,000 shipments every single day for our 35,000 clients.

Technology

The core of Echo's offering is our proprietary technology, which is quickly adaptable, highly scalable, and uniquely easy to use for shippers, carriers, vendors, and partners. Through efficiently integrated portals, we ensure better data collection and transmission, seamless communication, comprehensive reporting, and real-time

visibility. EchoShip is our innovative, self-service web portal that consolidates and simplifies shipping by enabling customers to quote, book, ship, manage invoices, and track shipments in real time. With its simple, user-friendly interface, EchoShip eliminates repetitive workflows and speeds up shipping with an efficient, four-step process, giving clients time back to focus on their business. EchoDrive®, our web portal and mobile app for carriers, gives users real-time access to search, bid, book, manage, track, and get paid on freight hauled for Echo. The platform's load management tool and document upload capabilities streamline operations, keep dispatchers organized, and help drivers get back on the road faster.

Service

Above all, Echo values exceptional service in every client interaction. Our commitment to excellence and innovation, delivered by the industry's most talented transportation professionals, means we recognize that one solution does not fit all. Echo evaluates each client's transportation needs, discovers efficiencies, and delivers simplified transportation management—all with a relentless focus on execution.



ElectriCities of North Carolina, Inc.

1427 Meadow Wood Blvd. • Raleigh, NC 27604 • www.electricities.com



Brenda C. Daniels
*Manager, Economic
Development*

“It’s no coincidence that some of the state’s most dynamic growth has occurred in our public power communities. Advanced manufacturing, food processing, metal-working, plastics—any power-intensive industry is going to find significant advantages here.”



ElectriCities is a not-for-profit government service organization representing more than 70 public power communities throughout N.C., S.C., and Va. These cities, towns, and universities operate their own electric distribution systems, illuminating the homes and workplaces of more than 1.2 million customers.

One of ElectriCities’ roles is to represent member communities to expanding and relocating companies. We maintain comprehensive databases for all public power municipalities in North Carolina. Prospects can order detailed reports on dozens of sites, from mountains to coast. Within 48 hours of a request, ElectriCities will send profiles of locations that precisely match the company’s specifications. “They find all the information they need in one place,” says Brenda Daniels, the organization’s economic development manager.

ElectriCities has further simplified economic development in N.C. by creating the Smart Sites® or S2 program. “Smart Sites is our shovel-ready site qualification program,” Daniels explains. “We go through a very rigorous engineering review on a piece of property before certifying it as a ‘Smart Site.’ Smart Sites are shovel ready for potential new tenants, which saves the company a lot of time and money.”

Thanks to a partnership with the state, an ElectriCities S2 certification rolls into North Carolina’s similar shovel-ready program. Each Smart Site has municipal electric

service, water, and sewer access within 500 feet, and is within five miles of an Interstate or Interstate-quality highway. Faster construction, fewer uncertainties, and less risk for companies and site selectors alike. With 18 certified Smart Sites and more in process, Daniels says the team has high hopes for the program’s future.

In addition, ElectriCities offers a certified industrial park dubbed a “Prime Power Park,” which offers 12 MW of on-site backup power generation. Located in the city of Albemarle, the park has direct rail access from Charlotte/Douglas International Airport, qualifying it as a great rail intermodal site. “If a company has a critical operation that can’t risk a power outage, they have a backup available, without spending money to purchase a generator,” Daniels adds.

The Smart Sites and Prime Power Park, like the rate-lowering services to all ElectriCities’ customers, provide ongoing incentives for companies looking for an ideal logistics location.

ElectriCities remains a partner through the entire site-selection process, helping companies with utility-related issues, arranging site visits, and facilitating contact with local, county, and state officials.

Companies recognize the cost efficiencies and superior customer service public power provides. Municipal utilities don’t have to pay dividends to shareholders, and those savings can be passed on to the utilities’ customers.

Brenda Daniels
**Manager, Economic
Development**
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ELECTRICITIES
of NORTH CAROLINA, INC.
The energy behind public power

ELM Global Logistics

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866-577-0189 • elmlogistics.com



Bill Conboy
Founder & CEO



Our 3PL

The most important characteristic of a 3PL is their dedication to achieving success. For over 40 years ELM Global Logistics emphasizes pride in their work, best-in-class performance and long-term partnership relationships.

We put the **P** in 3PL:

- P**ride
- P**erformance
- P**artnerships

ELM Global Logistics,
our 3PL.



ELM Global Logistics is a full-service, third-party logistics provider that has been tackling unique supply chain challenges for over 40 years. Our personalized approach to all our clients' needs is what sets us apart. We provide innovative logistics solutions while offering cost-effective solutions and speed to market to our customers.

Pride

Founded in 1979 by Bill Conboy, ELM Global Logistics operated with just a handful of employees in about 50,000 square feet of warehouse space in Long Island, New York. Over time, ELM Global Logistics has expanded its operations and now occupies more than 1,000,000 square feet throughout the Northeast region. Today, Bill continues to run the operation along with his wife, children, extended family and many dedicated employees who he feels contribute to the success and growth of this truly family-owned business.

Performance

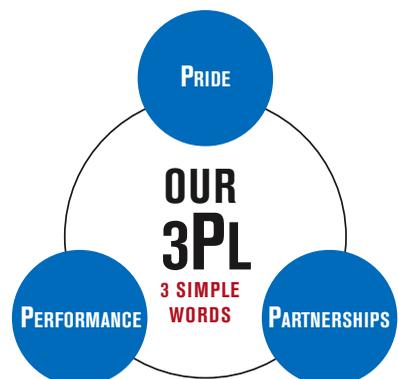
ELM Global Logistics offers highly tailored solutions and technology that provides all customers with accurate, real-time information. We offer a combination of powerful tools that can help manage your information, inventory, space and time. Long or short term, we offer you the flexibility to grow your business and let you focus on your core specialty. We combine methodical analysis of your material flow via intelligent application of systems designed to automate every step of the process.

We offer both shared and dedicated warehousing, e-commerce, packaging and fulfillment services, assembly, consolidation, cross-docking and transportation services. We are the largest in-house, full-service rail siding on Long Island that is connected to the freight lines of all major rail carriers.

Partnerships

We offer creative solutions that always encompass our customers' needs, rather than trying to fit them into a standard solution. Our tightly integrated partnership approach enables successful execution of complex supply chains.

Partnering with a diverse group of clientele, we offer a complete range of services while still offering the flexibility to customize our services to their needs. Offering customers creative solutions, rather than trying to fit them into a basic solution, has always been our strength and belief at ELM Global Logistics.



Engineering Innovation, Inc.

3601 Sagamore Pkwy N., Ste. Eii • Lafayette, IN 47904
800-350-6450 • sales@eii-online.com • eii-online.com



Don Caddy

Chief Operating Officer

Mission Statement

To provide cutting edge solutions that offer maximum savings, excellent service and support, and best of class technology and engineering to our customers.



After 15 years of operation, Engineering Innovation, Inc. (Eii) has continued to be a market leader in **automation solutions for rapid package and mail processing**. As demands increase, accuracy and efficiency become more important than ever before. Eii adapts automation to your processing environment, fitting any size operation. We offer custom processing solutions for postal, distribution, fulfillment, warehousing, and reverse logistics applications.

To truly tackle the logistics market, you need solutions to **improve and automate: barcode scanning, package weighing, sorting, dimensioning, labeling, optical character recognition**, and more. With Eii's solutions, your overall speed and processing costs can greatly improve—all while optimizing staff workflow and decreasing training time.

Combining our process-engineering, data-acquisition, and imaging experience, Eii can provide our customers with custom sorting equipment and implement automation solutions to maximize throughput, efficiency, destination accuracy, and ROI. With Engineering Innovation, you can easily act on scanned information to make precise responses to your customers and the market with built-in business logic compatibility.

As consumers expect faster more affordable shipping, Eii provides solutions that can scale as you do. Our solutions are easily reconfigured once installed. With modular options and custom configurations,

we will help to design and create a solution to match your changing business needs. These solutions include the **Chameleon™ Parcel Processing Solution**—a high-speed parcel processing platform ideal for induction into inbound warehousing and outbound distribution networks. Also included is the versatile **LightSort™ Sorting System**. Our LightSort Technology makes it easy to find the right location on the first try, reducing errors and increasing productivity with pick or sort-to-light technology. Building on our successful LightSort Sort-to-Light, our new Carton Flow Rack features gravity feed rollers to move the container of your choice forward in a First-In First-Out system. Ideal for final mile delivery, couriers, or 3PLs looking to improve delivery and processing times.

Increase your return on investment and keep your processes up and running with Engineering Innovation's parcel solutions. We complement our great products by providing best-in-class service and support after the sale, designed to ensure our customer's success. Meet consumer expectations, create more affordable shipping options, and reduce training time for staff—all while choosing cost-effective automation and sorting technology.

ENGINEERING™
i n n o v a t i o n

Evans Distribution Systems, Inc.

Corporate Headquarters • 18765 Seaway Dr. • Melvindale, MI 48122
1-800-OK-EVANS • sales@evansdist.com • evansdist.com



John A. Evans
President

Mission Statement

To be a strategic supply chain partner admired for our people, passion, and innovation.

Nine Point System

1. Listen
2. Innovate
3. Communicate
4. Assign Responsibility
5. Set Standards
6. Document
7. Implement
8. Monitor
9. Review

Evans Distribution Systems is a full-service third-party logistics company located in Detroit, Mich. We operate six warehouse facilities totaling nearly three million square feet. Our transportation operation includes 100 drivers and 400 trailers. We operate five core business units:

- **Warehousing**—Dedicated, multi-client, U.S. Customs Bonded, Foreign Trade Zone, rail-served, food-grade and liquor licensed.
- **Fulfillment**—B2B or B2C omni-channel e-commerce, integrations, same-day order processing, and custom reporting.
- **Value-Added Services**—Contract packaging, shrink wrap, kitting, and quality inspection.
- **Transportation**—Asset-based and non-asset-based transportation management solutions.
- **Staffing**—Scalable staffing solution that provides qualified and vetted staff to fill labor-intensive positions.

Reputation

Since 1929, we earned a reputation for quality and trust from our customers, partners, and employees. We go above and beyond to support our local community and the health and safety of our employees. Evans has earned Inbound Logistics' Top 100 3PL recognition for 19 consecutive years.

Expertise

For 20 years, Evans has held the ISO 9001:2015 certification. Quality management objectives and goals are established for all levels and processes throughout the organization to meet requirements and to drive performance improvements. In addition, one million square feet is classified as Foreign Trade Zone and U.S. Customs Bonded. We hold a FDA food-grade warehousing registration and SmartWay certifications.

Scalability

Our customers tend to experience exponential growth when working with Evans. Through our six locations, we adapt



to long-term or short-term contracts and shift associates based on customer needs and volume. Our diversified service offerings and staffing solutions give us flexibility to accommodate shifts in your business.

Technology

Technology is the backbone of the supply chain. With an in-house IT department, Evans is committed to providing the latest software, hardware and data-driven solutions to our customers. From machine vision/AI automation systems to warehouse and transportation management software, to RF barcode scanning, EDI/API connectivity, and e-commerce integrations—we use technology and data to optimize performance. Customers have real-time visibility into inventory and shipments from the dashboards within the evans365 data portal.

Diversification

Evans serves diverse industries and business models. Customers range from consumer goods, furniture, automotive, food and beverage, paper, hazmat, raw materials, robotics and more.

Discover Why It's Easier with Evans

We simplify complex supply chains so that you can do what you do best—manage and grow your business. Discover why it's easier with Evans by contacting us at sales@evansdist.com or 1-800-OK-EVANS.



Evergreen Line

One Evertrust Plaza • Jersey City, NJ 07302

201-761-3000 • evergreen-line.com • **LinkedIn:** www.linkedin.com/company/evergreen-america/

FULL STEAM AHEAD Dedicated to Enriching Your Life

For 50 years and beyond, Evergreen Group has relentlessly explored more possibilities, building a comprehensive network at sea, on land and in the air.

Our pursuit of service excellence leads us to navigate our way to every corner of the world, enriching people's lives and creating a better future.



Contact:

Evergreen Shipping Agency
(America) Corp.,
as Agent for
EVERGREEN LINE

One Evertrust Plaza
Jersey City, NJ 07302
201-761-3000
www.evergreen-line.com

Composed of the six shipping companies of the Evergreen Group, Evergreen Line is one of the world's largest container carriers, offering a capacity of approximately 1,480,000 TEU.

'Evergreen Line' refers to Evergreen Marine Corp. (Taiwan) Ltd., Italia Marittima S.p.A., Evergreen Marine (UK) Ltd., Evergreen Marine (Hong Kong) Ltd., Evergreen Marine (Singapore) Pte Ltd. and Evergreen Marine (Asia) Ptd Ltd. Evergreen Line was established and has grown in response to the requests and expectations of global customers.

Evergreen itself services 151 trade lanes weekly, with 206 vessels calling 252 terminals globally. As part of the East/West Trade OCEAN Alliance, Evergreen has the ability to provide cargo space on 359 vessels to 87 ports with 374 port calls per week. The company's global network offers 313 offices and agents located in 113 countries around the world.

The carrier has been certified by the Customs Trade Partnership Against Terrorism (CTPAT) since 2002. Since May 2004, all vessels operated by Evergreen are certified by the International Ship and Port Security Code (ISPS) for compliance. Evergreen's E-Commerce capabilities—considered among the most up-to-date in the industry—have been recognized by numerous groups and have been honored for excellence for four consecutive years by Log-Net, which gathers information from carrier users.

To further enhance service quality and

competitiveness, Evergreen maintains its fleet renewal program as it continues to deploy vessels within the most suitable trades. Under this program, the company has deployed additional new vessels during 2021 and continues to move forward with its announced plans for fleet deployment, increasing capacity from 2020 levels by more than 30% through 2024 to a total of nearly 1,800,000 TEU.

Introducing this additional capacity allows Evergreen to continue the replacement of older tonnage currently in operation, optimizing the efficiency of its operating fleet and enhancing its competitiveness within services. While building and upgrading its fleet, Evergreen Line intends to maintain each of the services it currently operates and will develop within new trades to meet the needs of its worldwide customer base.

Evergreen recognizes its obligation to conduct affairs constructively as a corporate citizen and has established an occupational Safety, Quality and Environmental Protection Management System for its container ships and shore-based personnel.

The company is committed to being a responsible steward of our surroundings and its S-type Green Ships are outfitted with numerous features specifically designed to protect our environmental treasures. Evergreen Marine Corp. previously raised its first Green Bonds initiative with proceeds specifically earmarked for improving energy efficiencies, preventing and controlling pollution and developing strategies for a sustainable environment worldwide.



FLS Transportation

400 Ste-Croix Avenue • Montreal, Quebec • Canada, H4N 3L4
www.flstransport.com



John Leach
Chief Executive Officer

Ever since our humble beginnings in 1987 in Montreal, Canada, our team of logistics experts has been driven by a single shared goal: delivering every load on time, with the least amount of headaches. It's what shippers want. It's what carriers want. And, it's what we deliver.

54,000
Carriers

400,000
Trucks

35
Years in business

17
North American offices



The #1 3PL for cross-border freight

... And the perfect choice for your domestic freight too!

Every load covered. No sweat.

At FLS Transportation Services, we care about your freight. It is this mindset that not only sets us apart but has also earned us a place among the Top 50 Freight Brokerage Firms in North America and the distinction as the #1 3PL for cross-border freight.

In an industry dominated by a lack of differentiation, we strive to be different with our 3-point customer agreement plan:

3X Support:

Of course, you need 24/7/365 service. But, we take it a step further. It's one point of contact supported by 3 teams. We call it 3X Support. Every customer has access to a sales executive for lane quotes, a customer success rep for tracking and tracing, and a dispatch crew for carrier communications. Three times the support for immediate service. You're going to love it.

Proven carrier compliance:

A 0.001% claims rate. The number says it all. Our proven carrier compliance just works. Behind the scenes, we put our carriers through a rigorous approval process and monitor daily performance ratings. This is our commitment to you...

your freight is always moved by carriers that are appropriately insured and bonded, providing you with the safety and reliability you need.

Guaranteed fair prices:

They're not all gravy lanes. We know. We've been doing this for 35 years. That's 3 decades of insights on equipment types, carriers and lane history. This knowledge combined with our network of 54,000 carriers ensures you'll get a fair price on every load. And let's face it, we've done so well because we've got this part right.

Our base of 54,000 carriers and 400,000 trucks ensures that we always meet this promise. 35 years, 380 employees, and 17 offices across North America later, we still take great pride in saying: Every Load Covered. No Sweat.

If you need freight delivered in North America contact us for a quote today!



Fortigo

P.O. Box 28967 • Austin, TX 78755
info@fortigo.com • fortigo.com



**George Kontoravdis,
Ph.D.**
President

Mission

Provide logistics collaboration solutions to help customers streamline their supply chain, reduce operating costs, and improve productivity.

- One-stop Transportation Management System (TMS)
- Freight Audit
- Enhanced Visibility
- Real-Time Dashboards
- Compliance
- Savings Guarantee
- Vendor Portal
- Enterprise Scalability
- Consulting
- Inventory Management
- Asset Tracking
- Cloud-Based Shipping and Delivery

info@fortigo.com
fortigo.com

Fortigo 20 YEARS
COLLABORATIVE LOGISTICS

**ONE TMS. ANY SHIPMENT.
GREAT SAVINGS.**

Fortigo offers one-stop collaborative logistics services to streamline the supply chain. Whether you are sending a letter, box, pallet, or shipping container, Fortigo TMS efficiently manages the ship-to-delivery workflow, reduces operating costs, improves productivity, and enhances collaboration with carriers and vendors, all from a cloud-based system.

For companies seeking to enhance savings, improve customer satisfaction, and increase profitability,

Fortigo automates, optimizes, and audits logistics decisions. Fortigo plugs into established supply-chain applications and provides rapid return on investment by optimizing and deploying closed-loop logistics processes, minimizing ship-to-order times, and streamlining collaboration with logistics providers.

Contact us at info@fortigo.com to set up a demo and learn more.



Forward Air

PO Box 1058 • Greeneville, TN 37744-1058
833-633-1484 • Forwardair.com



Tom Schmitt
CEO

Mission Statement

For customers who need their freight delivered when it really matters, with precision, and with the highest level of care, Think Forward.



Forward Air (FWRD) started as a vision in 1981 to provide a precise, cost-effective, expedited ground transportation alternative to air freight. Now, over 40 years later, Forward has evolved into the preferred supply chain partner for companies across North America.

Headquartered in Greeneville, TN, Forward offers expedited less-than-truckload (LTL), final mile, intermodal drayage, and truckload (TL) services to businesses. Forward trucks are delivering goods to customers and communities across the U.S. and Canada, reaching more than 94% of the combined population. Goods transported range from lifesaving medicines and medical equipment to furniture and accessories for homes and businesses.

Forward's transportation network and commitment to precision execution enable the fastest transit times and maximum handling efficiency, while minimizing freight loss and damage over traditional ground transportation providers. With consistent and reliable transit and on-time, damage-free deliveries, we keep your business moving Forward.

Our Services

- **Expedited Linehaul LTL.** Forward Air supplies expedited ground transportation to and from our terminals that are near major North American airports. This service is provided to domestic and international airlines, freight forwarders and related logistics businesses.
- **Complete Cartage.** This offering extends your reach farther into areas outside of our airport locations by adding pickup/delivery to our linehaul service as a packaged arrangement.
- **Truckload Services.** Forward Air Truckload provides full truckload service for larger point-to-point consignments and dedicated fleet services.
- **Intermodal Services.** Forward Intermodal is a market leader in import delivery and export pickup between ports/rails and customer distribution centers.
- **Valued Services.** We go beyond the basics. Our technology, customer care, customs, and more make the process easier for you.



Freight Management, Inc.

2900 E. La Palma Ave. • Anaheim, CA 92806
714-632-1440 • freightmgmt.com



Robert Walters
President

Mission Statement

We will be the staff our clients require to reach goals and achieve their vision.



Over 50 years ago, Freight Management Inc. (FMI) began a revolution in Freight Cost Management and Freight Audit Services, reducing shipping costs for its customers. We were among the first to provide this service from which we derived our name: Freight Management—to save businesses time and money on their total freight operations.

Today, FMI remains one of the industry's most experienced, knowledgeable and capable providers of logistics management, including freight audit and payment services.

We offer flexible, customized client solutions based on the size, budget and goals of your company. In fact, one of our greatest strengths is applying our knowledge to your particular needs. Our competency and creativity in freight management put us on the leading edge of technology with useful, accessible tools for our clients.

FMI is not carrier-owned. And, because of our long-standing independence,

we're unsurpassed in our ability to develop fresh game plans to adapt rapidly to changes that could impact your business. Being quick on our feet is one of the most potent skills we possess to keep your company ahead of the competition—and, of course, save you money.

Our number one source of business is our outstanding customer satisfaction. With many of our partnerships more than 10 years old, long-term relationships are at the heart of our service philosophy. We service a wide array of well-known clients. And, although we're not limited to working with any particular carriers, we also have longstanding relationships with all well-known carrier companies.

Looking towards the future, a large percentage of FMI's expenditure goes toward the development of new software and tools that enhance our logistics services and maximize freight program effectiveness. With feedback from customers and carriers alike, our

dedicated Information Technology department continuously improves and delivers innovative logistics solutions for you.

FMI plays an integral role in the development of Electronic Data Interchange systems and Automated Shipment Notifications for supply chain optimization. A few examples of the technological edge available to FMI customers include online pre-rating of shipments, up-to-the-minute visibility of product transit and the ability to interface with any shipper's software.

Additionally, our clients receive personalized and confidential website access with a number of online services and benefits, including the ability to rate freight shipments before they leave the dock.



Freightgate

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Martin Hubert
President & CEO

Freightgate Vision:

For over 20 years Freightgate has been a leader in applications for Supply Chain Management. The majority of companies rank IT innovation as the competitive tool in today's information age. Freightgate is known as THE innovator in solutions that streamline the complexities of Global Rate Management, Routing and TMS. Our solutions are delivered over Cloud and Mobile networks. Learn how to reduce legacy IT costs by connecting to the Freightgate Logistics Information Fiber!

Freightgate SCM solutions can be integrated into most Enterprise Resource Planning (ERP) systems providing visibility and collaboration tools to proactively manage rates, routing, status, delivery and capacity to minimize disruptions.

Our generation of SCM solutions overcomes challenges with volatility and complex supply networks. Our solutions let you manage your entire network in real time. Quickly leverage critical information and analytics, to meet increased expectations to enable collaboration across stakeholders.

Logistics Cloud Innovation

Freightgate's Logistics Management (TMS) Platform, known as the Freightgate logisticsCloud, empowers professionals on all levels to collaborate with global vendors and logistics providers seamlessly on a single common transportation sourcing platform for informed decision-making across the entire global supply chain. It encompasses ISO9001:2015-certified end-to-end transportation management processes from procurement, rate management, optimization, execution and visibility, shipment track and trace, carbon-emission modeling, invoice audit & pay with enhanced carrier connectivity, KPIs and lane-based analysis.

Freightgate's latest logistics cloud technology extends transportation management into the new mobile dimension, providing companies with in-depth 360-degree visibility of global supply chain processes and collaboration between manufacturers and their customers, suppliers, carriers and logistics providers.

The Freightgate logisticsCloud is comprised of adaptive easy-to-deploy applications to help companies leapfrog into the 21st century with minimal start-up cost. Easy integration with ERP, CRM, SCM environments and transportation management systems (TMS).

Contract Rate Management & Sales Automation

Managing carrier tariffs, shipping rates, surcharges and discounts can be a tedious labor intensive task. By replacing countless pages of inconsistent and difficult to understand rates with an interactive, searchable internet native solution, you will gain a whole new level of productivity and win more business in the process. Freightgate supports advanced Rate Management Connectivity concepts for CargoSmart, FourSoft, SAP TM in addition to its open standards compliant webservices offerings. Imagine a world where you go from zero to quote in a few seconds.

Visibility & Collaboration

Freightgate ensures transparency and helps synchronize events along the supply chain with extra features to enhance collaboration. Sharpen your competitive edge by providing tracking information and event management along the entire supply chain. I-Trek! Mobile utilizes cloud-based



connectivity to collaborate with customers and trading partners by sharing vital shipping information. I-Trek provides support tools to make real-time informed decisions that can have a major impact on bottom line performance.

Experts in API Orchestration

In a real time world where efficiency is king; instant response is what fuels supply chains of tomorrow. We have seen a substantial increase in inquiries regarding leveraging our rate engine via API access by various sub-systems on the client side. By establishing strategic partnerships with our customers we give them a competitive advantage and an opportunity to access a broader range of resources and expertise. This fosters innovation to help generate new ideas, develop better products, and save costs.

Global Trade Compliance

The Freightgate logisticsCloud provides regulatory compliance solutions for importers, exporters, customs brokers, freight forwarders and ocean carriers with 10+2 security compliance and trade data reporting to the U.S. Customs and Border Protection (CBP). Along with functionality supporting U.S. Foreign Trade Regulations (FTR), Export Administration Regulations (EAR), Office of Foreign Assets Control (OFAC), and Homeland Security Denied Person Screening.

Start Today - Market Leaders rely on Freightgate's logisticsCloud to accelerate their supply chain. Don't wait!



Generix Group North America

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northamerica@generixgroup.com • generixgroup.com



Ludovic Luzza
GM

At Generix Group North America, we have been developing and implementing best-of-breed supply chain execution solutions since 1997—including our highly flexible Solochain WMS. We help our clients keep their customer commitments by supporting them in the digital transformation of their supply chains.

We believe in innovation, knowledge, leadership, and integrity. Our driven and dedicated team of executives, business analysts, software and logistics engineers has a singular mission: provide the best supply chain execution solutions that create real, tangible, and value-enhancing benefits for our customers.



Generix Group North America is a division of the Generix Group SA, a global expert in collaborative supply chains that develops and implements advanced supply chain execution solutions. With implementation sites spanning the globe, and a global team of 600+ experts, they have helped more than 6,000 clients in manufacturing, wholesale, retail, and third-party logistics profitably grow their supply chain operations for more than 20 years.

Supporting Agile Supply Chains

Generix Group North America provides a series of solutions within our Supply Chain Hub to create efficiencies across the entire supply chain. From Warehouse Management Systems (WMS), to Manufacturing Execution Systems (MES), to Transportation Management Systems (TMS) and more, our software platforms can deliver a wide range of benefits that vastly improve your warehouse bottom line.

Our Supply Chain Hub enables companies to execute the physical flow of goods and digitize the flow of information, easily connecting to ERP, WES, and other internal systems. Our clients include many small, medium, and large-scale operations in North America and Europe including Brock Supply, Blue Streak Electronics, Marucci Sports, Danone, Domino's Pizza, and many others.

Solochain WMS, our advanced Warehouse Management System, is a highly flexible and adaptive solution built for

companies that need their supply chains to be nimble, efficient, and scaling, while ensuring execution excellence. Solochain's ease of configuration and customization, including built-in MES functionality, is praised by customers with multi-channel needs. Solochain WMS is listed in Gartner's Magic Quadrant for Warehouse Management Systems and has been performing in more than 500 warehouses across North America.

Does your company need to track and trace inventory, as well as manage your workforce, with real-time visibility, while automating increasing workflow throughput with advanced business rules? Could you benefit from increased picking productivity, exceptional inventory accuracy and visibility, order accuracy, and expedited inbound activities?

Our supply chain solutions help organizations navigate the new paradigms of change in the aftermath of COVID-19, including "Enabling Warehousing Resiliency" as a key strategic initiative for companies wanting to do more than survive—but rather thrive—in today's shifting business landscape.

generix GROUP 
COLLABORATE » ACCELERATE

GEODIS

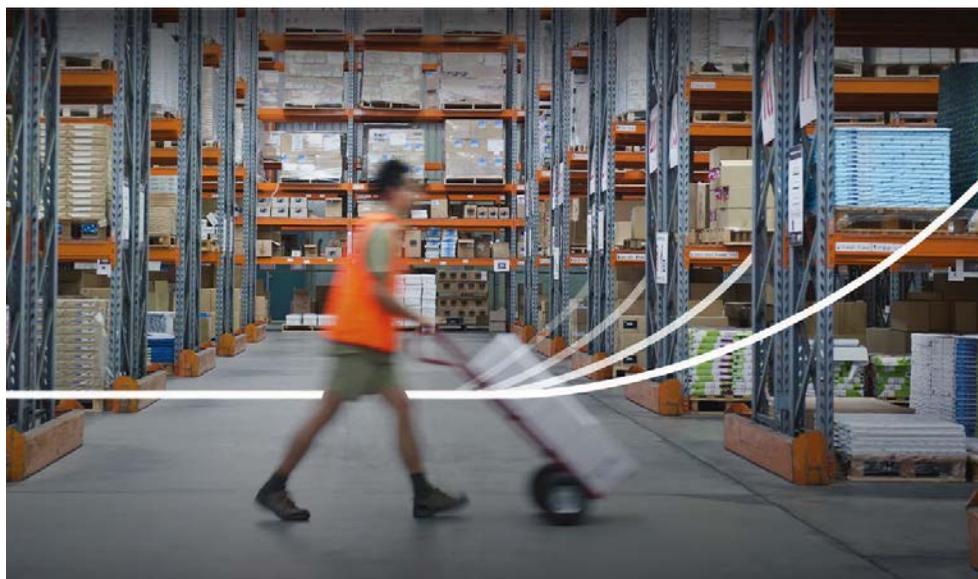
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615-514-0331 • michelle.johnson1@geodis.com • geodis.com/us



Mike Honious
CEO

We help our clients succeed by overcoming logistical constraints.

- 50,302,996 ft² warehousing space
- 229 locations
- 48 Freight Forwarding offices servicing 120+ countries of destination
- 17,700+ employees
- *Inbound Logistics* Top 100 3PL Provider from 1999-2021 and *Logistics Quarterly* Top 40 North American 3PLs



GEODIS combines global reach with local know-how. Put those together, and you have the key to logistics success. Our vast experience and network in the Americas give you everything you need to serve your customers well, partnering in e-commerce logistics, freight forwarding, transportation management, and value-added warehousing.

E-COMMERCE LOGISTICS

GEODIS offers a dedicated e-commerce logistics team and a workflow engine with time-and-budget modeling operating at a 98% success rate for brands ready to expand exponentially. Our solutions easily connect with yours, giving a real-time, global view for control and visibility.

VALUE-ADDED WAREHOUSING

GEODIS offers a premium network of multi-tenant warehouse operations. Our network can reach 99.5% of the U.S. population in two days or less. Additionally, GEODIS offers value-added services to simplify supply chains and give clients a competitive advantage, from packaging customization to customer experience services.

FREIGHT FORWARDING

GEODIS offers Air & Ocean Freight solutions for all types of national and

international freight shipments. No matter your need, we'll listen to your requirements, and find the Air & Ocean shipment configuration for you. Additionally, we provide value-added services to ensure the right solution timing, level of complexity, and cost.

TRANSPORTATION MANAGEMENT

GEODIS' Transportation Management Solutions optimize the movement of products throughout your supply chain. Our team uses their expertise, industry partnerships, and trusted tools and tier-one technologies to deliver the most reliable, low-cost solution for your transportation strategy. From inbound through to the final mile, our experts will provide you with the capability, flexibility, and scalability needed to build a growth-enabled supply chain.

CAPACITY SOLUTIONS

GEODIS Capacity Solutions provides freight brokerage and transportation solutions to meet your needs, whether it is a dry van, refrigerated trailer, flatbed, or other specialized equipment.



Georgia Ports Authority

PO Box 2406 • Savannah, GA 31402 • 912-963-6995 • gaports.com
Chris Logan • Sr. Director, Trade Development, BCO Sales



Griff Lynch
Executive Director

OUR MISSION

The Georgia Ports Authority's mission is to empower entrepreneurs, strengthen industries, sustain communities and fortify families by relentlessly striving to accelerate global commerce.



GPA Expanding Container Capacity

The Georgia Ports Authority is making a series of infrastructure improvements to expand capacity and speed the flow of cargo.

Key to that plan is expanding its Mason Mega Rail Terminal. GPA has now commissioned the second set of nine new working tracks for a total of 18 at Mason Mega Rail. The 85-acre rail yard is the largest of its kind for a port terminal in North America.

The expansion increases intermodal capacity to and from the Port of Savannah by more than 30%, increasing maximum terminal rail lifts to 2 million twenty-foot equivalent container units per year. GPA can now build and receive six 10,000-foot trains simultaneously.

Port of Savannah customers moving containers by rail enjoy superior speed and reliability, with most cargo moving from vessel to rail within 24 hours.

Additionally, Savannah offers the fastest westward rail transit in the South Atlantic region. Class I railroads Norfolk Southern and CSX provide doublestack container trains along the entire route between Savannah and the Midwest.

On the container yard, GPA's Peak Capacity project began coming online Dec. 1, 2021, delivering 820,000 TEUs

of additional annual capacity at full completion in March 2022. Another 18 acres currently under development will add 400,000 TEUs of annual capacity by July 2022.

GPA is also building a new berth for big ships. The project, slated to come online in 2023, will allow Savannah to simultaneously serve four 16,000-TEU vessels, and three additional ships.

The Port of Savannah is also building a new transloading facility on a 90-acre parcel just upriver from Garden City Terminal. A cross-docking warehouse will be completed by the spring of 2023, served by a yard with nine rubber-tired gantry cranes and an annual capacity of 400,000 TEUs.

In 2023 and 2024, the Garden City Terminal West project will add a total of 1 million TEUs of annual capacity.

Private industry is also responding to the need for off-terminal infrastructure expansion. At the close of 2021, 20 million square feet of industrial space were under construction near the Port of Savannah—a 25% increase over an inventory of 80 million square feet.

Find more information at gaports.com



Holman Logistics

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Brien Downie
President

Our Core Purpose

Established in 1864, Holman exists to envision and bring into reality new concepts and ideas that help businesses operate more efficiently and cost-effectively in order to improve the lives of people everywhere.

We strive every day to live by our Core Values:

- Safety Focus
- Be Better
- Show Respect
- Serve Others
- Extraordinary Service



With headquarters in the Pacific Northwest and operations across the U.S., we provide public and contract warehousing, manufacturing logistics, plant support, transportation, shuttle, collaborative logistics, and omnichannel fulfillment services.

We Are Experts in Partnering with Manufacturing Operations

We perform manufacturing logistics for both consumer packaged goods and durable goods clients, managing raw material inventories, material usage planning and delivery, quality control, lot control, and facilities maintenance.

We Provide a Broad Array of Ground Transportation Services

Our transportation services vary from truckload and LTL deliveries to spotting and shuttle services. Holman regularly pools LTL deliveries across customers to realize transportation savings.

We Have Experience in Your Industry

We serve a wide variety of industries including CPG, paper products, foods and beverages, food packaging, pet foods, electronics, home appliances, heavy equipment, and raw materials.

We Create Lasting Relationships with Our Customers

As a privately-held company, we are not subject to shareholder requirements and quarter-by-quarter market results. This flexibility allows us to both believe in and create lifetime relationships. We choose to invest in our people, in our processes, and in our clients.

Your Search for the Perfect Partner Is Over

The average length of our strategic customer relationships is over 36 years! We keep that business by providing *Extraordinary Service*. We know that your supply chain must add value to your product and to your customer's experience. Holman expertise helps ensure that your customers build lifetime relationships with your business as well.



**Extraordinary Service for
Over a Century**

Follow us on:

Hoosier Energy

2501 South Cooperative Way • Bloomington, IN 47403
Direct: 812-876-0294 • Hoosiersites.com



Harold Gutzwiller
*Manager,
Economic Development
Department*

Mission Statement

To provide member distribution systems with assured, reliable and competitively priced energy and services in a safe and environmentally acceptable manner.



Hoosier Energy is a non-profit generation and transmission cooperative (G&T) that provides wholesale power and services to 18-member distribution cooperatives.

Collectively, Hoosier Energy's member cooperative network operates and maintains more than 36,000 miles of distribution lines and provides electric service to nearly 300,000 consumers or about 650,000 people in 59 counties in southcentral and southern Indiana and southeastern Illinois.

Hoosier Energy's interconnected transmission network includes nearly 1,700 miles of high-voltage power lines, 25 transmission stations and about 300 delivery points.

Commitment to a Sustainable Future

In January 2020, Hoosier Energy announced Board approval of a new long-range resource plan. While preparing for that announcement and the year-long planning process that led up to it, Hoosier Energy collectively prioritized what matters most to its commercial and residential consumers about the resources that provide their electricity. As such, the new plan meets those priorities. It's designed to provide reliable, affordable and sustainable energy while saving members an estimated \$700 million over the next two decades.

As part of the plan, Hoosier Energy expects to retire its remaining coal-fired generating station—which represents one half of its total energy supply—in 2023 and transition to a more diverse generation mix that includes a combination of wind, solar, natural gas and storage. This diversity provides a foundation for supply cost stability and predictability while reducing its carbon footprint by nearly **80 percent**.

Commitment to Economic Development

Hoosier Energy is also committed to improving the communities its member cooperatives serve throughout southcentral and southern Indiana and southeastern Illinois. Hoosier Energy has a dedicated Economic Development Team that focuses on attracting commercial and industrial growth, resulting in increased capital investment and job opportunities throughout its member service territory.

The Indiana and Illinois economic development program at Hoosier Energy provides comprehensive economic development services throughout our service territory. Some of these services include:

- Shovel-ready site listings
- Electric usage cost estimates
- Searchable business maps
- Searchable sites and buildings maps
- Personalized assistance

Today, you don't need to choose from among reliability, affordability or sustainability; the member cooperatives of Hoosier Energy deliver all three. Contact the Hoosier Energy Economic Team to learn more about how they can assist you with your site location and expansion needs.



Hub Group

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David P. Yeager
Chairman & CEO



Phillip Yeager
President & COO



Hub Group is a leading supply chain solutions provider. We transform your business goals into achievable strategy with end-to-end transportation and logistics management solutions. We bring a team of the industry's top experts to each opportunity, crafting scalable solutions that drive long-term value. Backed by our own assets, we offer the industry's most flexible multimodal solutions, each customized to match your unique needs. With a single point of contact, a robust lineup of tech-enabled assets, and strong third-party relationships, you'll access the right support and the right solutions at the right time. Through our industry-leading technology and sustainability initiatives, we are poised to help you conquer supply chain challenges of today while enabling the solutions that move your business forward.

Transportation Solutions

Our scalable, asset-backed services power the supply chains of customers from nearly every industry across North America. Whether you take advantage of our 45,000 Hub Group-owned containers for a reliable intermodal solution, harness our extensive network of nearly 4,000 drivers, or benefit from our sizable carrier network, a team of experts work on your behalf to drive performance across your supply chain. We take capacity assurance a step further, providing an award-winning Dedicated solution, customized for your unique supply chain needs and commodity type.

Logistics Management Solutions

Hub Group's Logistics Management solutions view capacity as just part of the equation, deploying advanced optimization techniques, a leading TMS, and a robust service lineup to deliver guaranteed savings and service throughout your end-to-end supply chain. Our network engineers use award-winning processes to analyze your multimodal network, crafting continuous improvement initiatives that deliver immediate value while aligning your business for long-term success.

For retail-bound shippers, our Consolidation Services ensure better performance, on-shelf availability, and compliance for crucial customer relationships. With Hub Group's Final Mile services, our network of more than 200 terminals, covering 42,000+ ZIP codes, provides flexible, tailor-made final mile solutions. Hub Group's global capabilities allow for a single service provider and point of contact that extends from your overseas plant to your customers' door with precision, leveraging trusted carrier and warehouse facility relationships.

Enhanced Cold Chain Solutions

Hub Group is committed to serving our customers' cold chain needs. The addition of Choptank Transport, a leader in temperature-controlled OTR shipping, to the Hub Group family, bolsters our presence in the refrigerated transportation space and adds a complementary offering to serve our customers' multimodal needs. In addition, we have more than doubled the size of our refrigerated intermodal fleet, allowing for a truly robust asset and non-asset based cold-chain solution that delivers your freight on time and on temp.



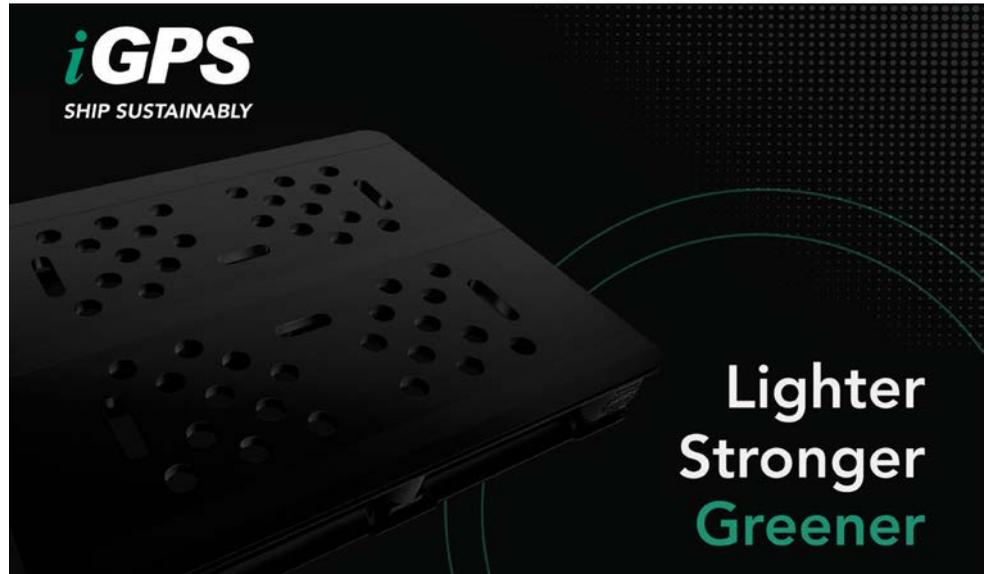
iGPS Logistics LLC

225 E. Robinson St., Suite 520 • Orlando, FL 32801
866-806-2672 • info@igps.net • igps.net • linkedin.com/company/igps



Jeff Pepperworth
President & CEO

iGPS provides innovative, world-class supply chain solutions that promote environmental sustainability, improve automation, and create unmatched value for our customers, employees, partners, and investors.



Moving the Market Forward Through Sustainable Supply Chain Solutions

At iGPS, sustainability is central to our mission and core values. We are continuing to lead a paradigm shift in the pallet pooling business to our all-plastic, recyclable pallets with embedded radio frequency identification (RFID) tags.

Our pallets are lighter, stronger, safer, and greener—better for your products, and better for our planet. It's no wonder that iGPS continues to bring home industry accolades that include repeat honors from *Inbound Logistics* (G75 Green Supply Chain Partner), *Food Logistics* (Top Green Provider), and *Supply & Demand Chain Executive* (Green Supply Chain Award).

Here are just some of the ways in which iGPS promotes sustainability for the supply chain:

- **STRONG & DURABLE.** iGPS pallets are built with High Density Poly Ethylene (HDPE), ensuring a long life. They are also edge-rackable, boasting a 2,800-lb. evenly distributed load capacity.
- **SAVES FUEL.** Up to 35% lighter than multi-use wood pallets, our all-plastic pallets require less fuel and cost to transport.
- **REDUCES POLLUTION.** By requiring less fuel for transport, our pallets reduce pollution and greenhouse gas emissions.

- **SAVES PRECIOUS RESOURCES.** 100% recyclable. If a pallet is damaged it is molded into a new one, making its useful life indefinite.
- **REDUCES PRODUCT DAMAGE.** Our pallets' near full-top deck coverage provides superior strength that reduces product damage and returned loads, adding efficiency to the supply chain.
- **IMPROVES WORKER & CONSUMER SAFETY.** No nails or splinters that endanger workers and equipment—not to mention consumers in the retail setting. Plus our pooled pallets' lighter weight (50 lbs.) meets CBA and NIOSH standards, reducing the risk of workplace injuries.
- **ENHANCES HYGIENE.** Unlike wood pallets, our pallets do not absorb liquids that lead to contamination, are impervious to insects, and require no toxic fumigation or other treatments.
- **ENABLES PRODUCT TRACKING.** Embedded RFID tags on all four sides provide supply chain transparency.
- **SIMPLER ADMINISTRATION.** Our pallet tracking system eliminates cumbersome paperwork and needless labor costs.

Maximize the sustainability of your supply chain while reducing your total cost of business. Call 866-806-2672 today to get started!



Intelar LLC Light by Motion

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Victor Verbovsky
CEO

[linkedin.com/in/victor-verbovsky-intelar](https://www.linkedin.com/in/victor-verbovsky-intelar)

Intelar LLC develops and produces motion/occupancy sensors for lighting control and automation in warehouses. Our team has expertise in microwave radar motion detection technology (presence, movement, direction of movement, speed of movement).

Our mission is to make your building, street, city and country as energy efficient as possible.



The Challenge: Inefficient use of lighting for industrial facilities, primarily warehouses

In 90% of cases, lighting operates at full capacity without taking into account the need for it. Such warehouses consume 3 times more energy than warehouses with automation.

Before our sensor appeared on the market, the lighting system could not be automated in some types of warehouses. These were warehouses with a height of more than 12 meters, freezing warehouses and high-humidity warehouses. We have solved all these problems and successfully compete with other manufacturers in all types of warehouses now.

What?

K2150 long-range motion sensor is unique in many technical parameters. In warehouse lighting systems, each sensor controls an inter-rack aisle up to 85 m long (detection of humans) and up to 115 m long (detection of vehicles) without dead zones.

Each sensor replaces 3-5 high-bay motion sensors made by the world's best manufacturers, saves up to 10,000 kWh electric power and decreases CO2 emissions by 4 tons per year.

The K2150 sensor is the only sensor that can operate:

- in warehouses where the ceiling height exceeds 12 m (from 3 m to 30 m and above)
- in freezing and high-humidity warehouses.

Why?

- You can reduce electricity consumption in warehouses by 3-4 times
- Even if you have energy-efficient LED-light sources installed, we can reduce your energy costs several times more.
- The sensor will extend the service life of LED lights by 2-3 times due to reduction of the LED's degradation.
- Our sensors can not only turn on and off the lighting, but also smoothly adjust its power within 2-100%.



How?

We use the more advanced microwave-radar technology instead of passive infrared systems.

A special mathematical signal processing mechanism inside the sensor's microprocessor increases operation range from 25 m up to 85 m and even more.

You only need to install one sensor in the center of each inter-rack aisle up to 85 m long and connect it to the existing lighting system.

Result

- In three years, our customers have saved 20.1 million kWh of electricity and reduced CO2 emissions by 8,040 tons.
- The payback period is approximately 1 year. Best result: 6.5 months
- Our sensors can reliably operate in warehouses located in regions with a warm and hot climate. In these areas the infrared motion sensors of competitors do not work three summer months a year.
- Sensors can be used in popular VNA warehouses with a height of 22 m.
- The sensors are very reliable. Not a single return for repairing in 3 years of selling.



ITOrizon Inc.

1675 Terrell Mill Road • Suite 300, Marietta, GA 30067
1-770-971-8411 • engage@itorizon.com • www.itorizon.com



Shan Muthuvelu
President & CEO

“In today’s highly accelerated business environment, all you need is an integrated supply chain system. We at ITOrizon, help companies ensure their supply chain resiliency and to facilitate seamless information flow with real-time visibility.”

ITOrizon is a Global Services Company that offers domain expertise, industry best practices, and technical astute to attain excellence in Supply Chain Processes, Operational Innovation, and Digitalization programs.

Headquartered in Atlanta (USA), with teams in New Jersey and Seattle along with offshore offices in India, ITOrizon guides clients through the complex world of bi-modal Supply Chain, IT and Digital Business with speed, agility, and confidence.

ITOrizon’s Center of Excellence is deliberately formulated to deliver impeccable business value by guiding customers on Business Expertise, Application Intricacies & Technology Competence all under one wing.

ITOrizon—Center of Excellence (CoEs)

SCM Transformation Consulting

- Recommend sensible supply chain systems and processes that support customer business and work within the financial boundaries.
- Formulate a scalable Digital SCM roadmap that honors the industry practices and excel in technology repertoire.

SCM Solution Implementation

- Design and implement Supply Chain Modules of Oracle, Manhattan, Hardis Group, HighJump, and Infor involving Supply Chain Planning, Manufacturing, Procurement, Warehouse Management, Transportation, Distributed Order Management, Labor Management, Internet of Things, and Business Analytics to enable “procure to pay,” “schedule to fulfill,” “order to cash,” and “forecast to plan” capabilities.
- Design and develop integration solutions for connecting Supply Chain Execution systems with Warehouse Control Systems, ERPs, MDMs, and homegrown systems to deliver integrated SCM ecosystems.
- Enhance business capabilities to gain ultra-visibility, customer experience, and market insights.

KEY ACHIEVEMENTS

- 10B+** Dollar global retail, manufacturing, distribution and consulting firms have selected ITOrizon as a preferred IT / SCM consulting partner
- 10+** Top Leading SCM Firm with Global Presence who can design Gartner Magic Quadrant Vendors
- 3 Times** Listed in Gartner Warehousing and Fulfillment Vendor Guide
- 5 Continents** Where we have active customers
- 4 Months** Shortest WMS implementation in the cloud for a 1M+ Sq. Ft. warehouse

PRODUCT EXCELLENCE

- ORACLE
- MANHATTAN ASSOCIATES
- REFLEX
- HIGHJUMP
- RAMCO
- GREYORANGE
- WANTI
- VOXWARE
- COMPASS
- KNAPP

INDUSTRY EXPERIENCE

- FMCG
- Manufacturing, Retail & Distribution
- Transportation and Logistics
- Process and Discrete Industries

INDUSTRY RECOGNITIONS

- SSI SCHAFER
- GEEK+
- VOCOLLECT
- BEUMERGROUP
- DEMATIC
- PYRAMID
- MATTHEWS SOLUTIONS
- EUROSORT
- INTELLICRATED
- LIGHTNING PICK

Partnerships: Gartner, Inc 500, Forbes, ARC Advisory Group, Logistics Risk Outlook

Technology Services

- Design the cloud transformation roadmaps and lead the infrastructure moves that seamlessly deliver secure, scalable, and interoperable ecosystems.
- Design and develop niche solutions that overcome silos and performance hurdles in legacy and SaaS platforms.
- Build a bespoke solution in customer chosen technologies to outpace the competition and exceed customer experience.

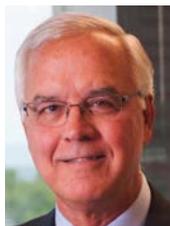
Application Management Services Partnerships

Outsource application maintenance, operational processes, and infrastructure upgrades to stay up to date in technology, DevOps Support, Performance Testing & Benchmarking, Peak Season Audit, Automated & Manual Testing provide high-end support to fast-track business growth.

ITOrizon applies industry applications, technologies, and processes experience in every engagement, irrespective of the project size or customer portfolio. ITOrizon’s leadership team firmly believes that human experience precedes all. All training programs ingrain that ideology in the mindset of every associate.

Kenco

2001 Riverside Drive • Chattanooga, TN 37406
800-758-3289 • kencogroup.com



Denis Reilly
President & CEO

“What I like about Kenco is that you are big enough to handle our business and everything we throw at you, but you are small enough that we are important to you.”

- Customer Testimonial

Kenco is the largest woman-owned third-party logistics (3PL) company in the United States. We provide integrated logistics solutions that include distribution and eCommerce fulfillment, comprehensive transportation management services, material handling equipment solutions, engineering and innovative consulting, and information technology—all engineered for operational excellence.

For over 70 years, we’ve built customer relationships that span decades. Privately held and financially strong, we take our corporate responsibility seriously by engaging in ethical, honest, and sustainable business practices. Our agility, dedication to customers, and data-driven approach ensure we provide our customers with real solutions and real results.

Expertise in Core Vertical Markets

Kenco serves customers across a wide range of sizes, types, and channels, from industrial and durable and fast moving consumer goods to health and personal care. With decades of experience serving these markets, Kenco has a clear understanding of the “pain points” and unique operational requirements of each sector, empowering our customers to excel in their respective industry segments.

Leading with Innovation

Since we signed our first public warehousing contract in 1950, Kenco has been a pioneer in researching, developing, and deploying technologies that drive results. As the creator of the Kenco Innovation Labs, an industry leading program to test new technologies, the company continues to help customers choose not just the latest offerings but the best technologies for their specific supply chain needs.



In 2019, we expanded the Kenco Innovation Labs to include a research facility in 10,000 square feet of space in a working warehouse. Within the first year, our team of specialists identified \$5 million in savings for customers through a wide variety of solutions. This ability to evaluate products in the environments in which they will be used continues to empower us to better meet the needs of our customers.

Our Associates Are Our Foundation

At Kenco, our greatest and most valued asset is our associates. Their commitment and dedication have earned positive reviews from customers, especially during challenging times. We’ll only continue to maintain these strict standards within our operations to protect the wellbeing of our team members while ensuring business continuity for our customers.

Building On Successes

Kenco recently launched FleetCloud, a proprietary material handling equipment telematics solution, expanded our brokerage services division with a new office in Denver, Colorado, and supported the green operations of a sustainable foods customer with a warehouse build that utilizes Kenco’s full portfolio of offerings including storage services and material handling equipment. We are looking forward to more innovation and collaboration in the upcoming year.



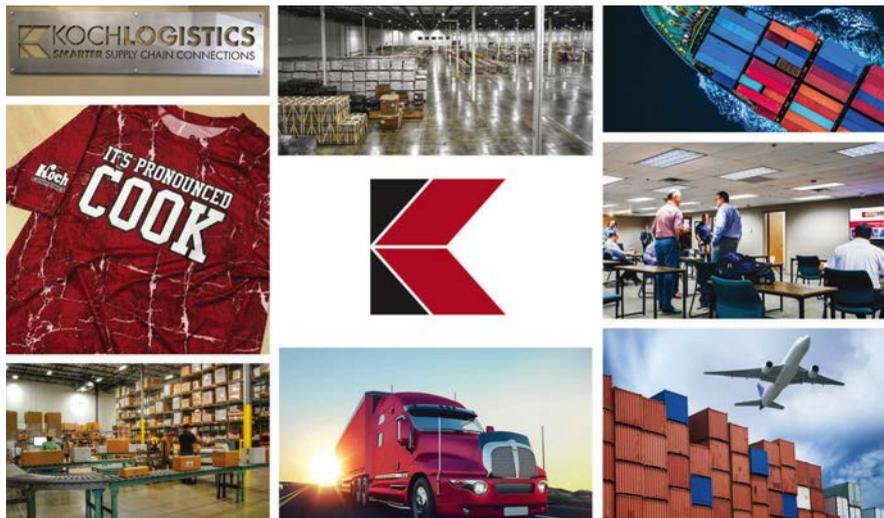
Koch Logistics

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Darren Nelson
Vice President &
General Manager

Respect for drivers and the trucking industry is at our core, making us a “3PL of Choice” with the top carriers and equipment providers nationwide. Our mission is to provide our clients with the highest quality customer service and transportation solutions while providing transparency and visibility to their supply chains. We feature fully integrated Trucking, Maritime, and Warehousing capabilities allowing us to seamlessly handle any project large or small from end to end.



A Foundation of Service

Koch Logistics has built its reputation on a foundation of quality and customer service while growing into one of the Midwest’s largest privately held logistics firms and was recently recognized as one of Minnesota’s Top Places to Work. We continue to put an increased focus on technology and customer friendly automation without losing our principles of proactive communication and personal service. We blend that technology with our capable and knowledgeable staff to seamlessly facilitate communications between vendors, carriers and other third parties. We pride ourselves on having a highly experienced operational staff so our clients can trust that their needs are being managed by people they can count on.

Warehousing Expansion

In 2021 our warehousing division, JBS Logistics, acquired a facility in Los Angeles and expanded its existing footprint in Chicago by 50%. When combined with other existing facilities in Minneapolis and Nashville, JBS is managing just over 2M square feet of space. Capabilities within these facilities include full-service distribution, consolidation, and fulfillment along with state-of-the-art climate-controlled food grade space in certain locations. Our newest building in California significantly boosts our capabilities on the West Coast and will provide growth opportunities to our complementary transportation related solutions in that market.

Project Expertise

In addition to standard shipping and warehousing services; we have an established expertise in managing the complex pickup and delivery needs related to site openings, fixture resets and rollouts, facility remodels and other complex projects. Clients both large and small have trusted Koch Retail Services to handle the complexities and tight deadlines associated with these projects. Our experts understand the coordination and communication required to successfully complete your projects on-time and on-budget.

Maritime Growth

While not easy this past year, Koch Maritime has been very successful satisfying our client’s needs throughout 2021 even during these times of unprecedented supply chain disruptions and ocean shipping delays. Our creative and nimble team has been able to secure bookings using our established network of international carriers and agents as well as keep clients informed and up to date as to shipment status and delivery windows. Our Maritime group continues to see significant growth and works in tandem with our domestic shipping teams giving us the ability to provide comprehensive logistics and global supply chain management.



Legacy Supply Chain

2001 Commerce Pkwy • Franklin, IN 46131
800.361.5028 ext. 6 • legacyscs.com



Mike Glodziak
President & CEO

Commitment to Our Customers:

In a more connected world, our customers are more responsive to the growing demands of delivering great experiences. We aim to build stronger, efficient, and sustainable supply chains that are as good for businesses and the environment. We embrace our role as a connected partner in our customers' businesses—in ways that smaller 3PLs cannot, and larger 3PLs *will not*.

Commitment to Our People:

Our purpose is to create a legacy of servant leaders who help people, commerce, and communities work better together.

For nearly 40 years, some of North America's leading retailers, manufacturers, and online businesses have selected Legacy to build scalable supply chain solutions that enable better connections with customers across all sales channels. Our methods allow our customers to maintain more control.



Solving Today's Logistics Challenges...

Businesses selling through multiple distribution channels face new demands to deliver faster & more cost-effectively, while also creating better customer experiences. Some of the top challenges facing businesses with omni-channel supply chains include: warehouse and transportation capacity & cost pressures, labor challenges, lack of omni-channel supply chain operational expertise, and lacking visibility across the supply chain to name a few.

...with Omni-Channel Know-How

Supply chain has become a primary enabler of profitable, sustainable business growth—directly responsible for boosting sales, enhancing customer satisfaction, and strengthening brand loyalty. Today's consumer-driven supply chain requires sound strategy & ability to execute across all sales channels.

We've invested heavily in our omni-channel capability to create integrated supply chain capacity for our customers.

- **Investment in People:** Our growth is driven by continued investment in talent across operations, technology, engineering, solutions, and corporate support functions—enabling us to create innovative new solutions for our customers.
- **Investment in Infrastructure:** Creating deeper connection between our customers and their consumers is mission critical. Our distribution, fulfillment, and transportation networks have a supply chain capacity spanning the U.S. and Canada.
- **Investment in Tech:** By investing in Tier 1 WMS, OMS, TMS, and Enterprise platforms we are able to drive new levels of visibility, efficiency, connectivity, and value.

Solutions for Dynamic Supply Chains

Legacy's know-how in dynamic supply chain environments increases speed to market, reduces costs, and increases service levels for our clients:

- **Value-Added Warehousing & Distribution:** Operational and human capital experts in dedicated contract distribution environments
- **eCommerce Fulfillment:** Direct-to-consumer expertise with scalable multi-client infrastructure
- **International Transportation & Customs:** Global buying power to compete on price, and we win on service with responsive, high-touch support that you won't find with larger global forwarders
- **North American Transportation Brokerage:** Solving capacity challenges for shippers of all sizes, with a level of high-touch service you won't get from the giant brokers out there
- **Dedicated Fleet Solutions:** Driver recruiting & retention, safety & compliance, technology implementation, and fleet operational execution to remove variability from your transportation network
- **And Everything to Add Value in Between:** Our consultative approach to creating deeper business partnerships seeks to add more value through continuous improvement, supply chain design & engineering, transportation analysis & planning, and customized supply chain technology solution development

Learn how Legacy can add value in your dynamic supply chain—visit Legacyscs.com or call 800.361.5028 ext. 6.



Locus Robotics

301 Ballardvale Street • Wilmington, MA 01877
info@locusrobotics.com • locusrobotics.com



Rick Faulk
CEO

“Locus is the proven leader in the development of highly productive and innovative AMR technology that efficiently solves our customers’ needs for total warehouse optimization.”

—Rick Faulk, CEO,
Locus Robotics

Facts about Locus:

- Deployed in 100+ sites around the world
- Award-winning automation solution
- Proven to increase productivity 2X-3X
- Deployed in as little as 4 weeks
- ROI within 6-8 months



Leading Digital Warehouse Transformation

Locus Robotics’ revolutionary, total warehouse automation solution incorporates powerful and intelligent autonomous mobile robots that operate collaboratively with human workers to dramatically increase productivity 2-3X, with less labor compared to traditional piece-handling systems. Locus helps retailers, 3PLs and specialty warehouses efficiently meet and exceed the increasingly complex and demanding requirements of today’s dynamic warehouses, factories, and manufacturing facilities, easily integrating into greenfield designs and existing warehouse infrastructures without disrupting workflows.

Intelligent Warehouse Execution

Locus intelligently coordinates human labor and autonomous mobile robots to optimize productivity and warehouse throughput quickly, cost effectively, and scalably.

Locus’ purpose-built algorithms optimize tasks from any WMS as well as the bots’ paths throughout the warehouse, minimizing travel time and cycle-times. Locus orchestrates true task interleaving among a variety of use cases including each and batch order picking, case picking, putaway, replenishment, packing and sorting, pallet transport, and multi-level transport.

Real-Time Insights

Locus dashboards provide up-to-the-minute intelligence on how your warehouse operation is performing with historical comparisons and executive summaries—across multiple sites.

Mission control dashboards and reporting provide full visibility of operational performance, facilitate forecasting, labor planning, and real-time workflow optimization—anywhere, on any device.

Flexibility, Adaptable, Scalable

Locus lets you quickly and seamlessly add new capacity as your needs grow or when you have seasonal volume spikes. There’s no special configuration, complex coding, or complicated setup required — Simply add more bots.

Locus’ innovative RaaS Program makes adding new bots easy and affordable. Whenever you need to add more capacity or need to meet a seasonal volume spike, just add bots! We ship them to you and you just unbox, power up, and go.

Built by logistics experts for logistics experts, Locus’ proven automation solution is the number one choice for global brands including DHL, GEODIS, CEVA Logistics, Boots, and many more. To learn more watch our customer testimonials or contact us today to get started at www.locusrobotics.com.



Logistical Labs

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info@logisticallabs.com • logisticallabs.com



Jonathan Evans
*Managing Director,
Product and Sales*

Pricing Intelligence at Your Fingertips

Our integrated suite of logistics and transportation software products helps you save time, control costs, strengthen margin, and manage your business more confidently.

Logistical Labs builds technology for collecting, analyzing, and deploying big data in the supply chain. With their suite of analytics products, users can make better informed pricing and quoting decisions through data-driven insights and social collaboration. Open API access allows users to easily integrate products into their existing business applications for improved process efficiency.

Logistical Labs has been named a Top 100 Logistics IT Provider by Inbound Logistics for the past four years. To learn more, visit www.logisticallabs.com.

LoadDex: All Rates, All Modes, One Search

Logistical Labs' pricing platform, LoadDex, drastically simplifies pricing and carrier selection across all modes. With a single search, users can compare thousands of rates from all types of transportation providers at once.

BidDex: Host Bids & Manage Your Carrier Network

Logistical Labs' carrier sourcing platform, BidDex, makes RFP management easy by letting users send and receive bids, analyze pricing data, and manage awards in one place.

The BidDex Bid Tracker allows you to source carriers on a load-by-load basis through your own private network. Simply submit a load and let your carriers send their bids. You can then track sourced carriers as they respond and accept or deny their offers from a single screen.

RailDex: Intermodal Pricing Platform

Shippers and logistics providers want a simple platform for intermodal pricing.



RailDex connects your ramp service with your drayage rates so you can offer a comprehensive door-to-door solution with minimal effort and reach new industry verticals that wouldn't otherwise be accessible.

HeavyCarts: Technology for Shipping Heavy or Large E-Commerce Products

Logistical Labs helps shippers get e-commerce products to their customers by connecting them with all types of carriers—parcel, non-parcel, less-than-truckload, truckload, brokerage, and more—to find the most competitive shipping rate at the point of sale.

API Connectivity

Integrate our products with your existing business systems and logistics tools through SQL, FTP, API, screen scrape, or iFrame products we're already integrating with.



Logistics Plus Inc.

Global HQ: 1406 Peach Street • Erie, PA 16501
1.866.LOG.PLUS • contact@logisticsplus.com • logisticsplus.com



Jim Berlin
Founder & CEO

Our Solutions

- LTL & Truckload Freight Brokerage
- International Air & Ocean Freight Forwarding
- Expedited Freight & Air Cargo Charters
- Warehousing & Fulfillment
- Customs Brokerage
- Importer/Exporter of Record (IOR & EOR)
- Project Cargo & Break Bulk
- Industry-Specific & Vertical Solutions
- Business Intelligence & Global Control Towers
- Dedicated 3½PL & 4PL Solutions



Global. Integrated. Logistics.

Logistics Plus Inc. (LP) is A *21st Century Logistics Company*™ and a leading worldwide provider of transportation, warehousing, fulfillment, global logistics, business intelligence, technology, and supply chain solutions. LP was founded 25 years ago in Erie, PA, by local entrepreneur Jim Berlin. Today LP has annual global sales of over \$350M and more than 1,000 employees in 30 countries worldwide. LP is consistently recognized as one of the fastest-growing privately-owned transportation and logistics companies, a top 3PL, a top freight brokerage and warehousing provider, a leading project cargo manager, and a great place to work. With our trademark *Passion for Excellence*™, our global employees put the 'plus' in **logistics** by doing the big things properly, plus the countless little things that ensure complete customer satisfaction and success.



doing what other logistics companies can't or won't do—and you won't be waiting on us. We operate leanly to be agile and responsive to your needs, yet we are large enough to have a network of solutions that span your entire supply chain.

A Global Network of Resources

The Logistics Plus® network includes offices, warehouses, and agents located in Erie, PA; Aurora, CO; Buffalo, NY; Chicago, IL; Chino, CA; Cincinnati, OH; Cleveland, OH; Dallas, TX; Dayton, NJ; Des Moines, IA; Fort Worth, TX; Haslet TX; Houston, TX; Laredo, TX; Lexington, NC; Los Angeles, CA; Miami, FL; New York, NY; Olean, NY; San Francisco, CA; Australia; Brazil; Belgium; Canada; China; Colombia; Czech Republic; France; Germany; India; Indonesia; Japan; Kazakhstan; Kenya; Libya; Mexico; Netherlands; Poland; Saudi Arabia; Taiwan; Turkey; UAE; Uganda; Ukraine; Vietnam; and the UK; with additional agents around the world.

Find all our people and locations online at logisticsplus.com/directory.

3PL, 3½PL and 4PL Solutions

Logistics Plus offers a breadth of reliable and affordable services. Working as your 3PL, 3½PL, or 4PL partner, we're the company known for saying YES, not NO, to your unique supply chain challenges. We handle projects from start to finish by



The Logistix Company

376 Dry Bridge Road • North Kingstown, RI 02852
401-560-0660 • thelogistixco.com



Joe Hassenfratz
Sales and Marketing
Manager

At The Logistix Company we pride ourselves on providing the highest level of customer service. Through our certified fleet of carriers and utilization of the latest communication technology, we can offer a complete suite of cost-saving freight solutions.



The Logistix Company has decades of experience within the logistics field, enabling us to build a dedicated network of asset partners servicing the transport of freight across the nation and around the globe. Our carriers are insured, experienced, and are held to the highest safety standards. TLC's fleet of carriers enables us to provide our customers with the resources to deliver freight where and when it is needed in a safe, efficient, and cost-effective manner. We make every effort to find our customers the best price possible for every shipment, big or small.

The Logistix Company's staff are experts in the highest industry standards. We have implemented environmentally conscious practices within our company to reduce our global footprint. Our intermodal transportation services can be an effective, sustainable method of shipping freight, and TLC's professionals make the various transitions from road, to rail, and back to road seamless. TLC also invests in the latest technology in order to provide fast, accurate, and cost-effective service.

The Logistix Company offers flexible options for every shipping need, from a single shipment, to your entire supply chain. Our expertise ranges from liquid and dry bulk freight, to LTL logistics, and even to warehouse management. We

provide temperature-controlled shipping options, HAZMAT certified carriers, and consolidation. From documentation to constant communication, our customers quickly learn that the dedicated TLC professionals are available with continual support for all shipments. When we take charge of your shipping needs you can rest easy knowing our focus is on your shipments from pickup to delivery.

OUR SERVICES:

- Truckload Dry Van/Flatbed
- Less than Truckload
- Warehousing and Distribution
- Worldwide Small Packaging
- Liquid and Dry Bulk
- ISO Containers
- Intermodal
- Bulk Liquid and Dry Railcars
- Ocean Freight
- 20'-40' containers
- International Services



The Logistix Company
FAST FREIGHT WITH TLC

Lynden

6520 Kulis Drive • Anchorage, AK 99502
1-888-596-3361 • Fax: 907-245-1744 • information@lynden.com • lynden.com



Jim Jansen
Chairman

At Lynden, our job is to deliver innovative transportation solutions to our customers.

Lynden began with a clear mission: put the customer first, deliver quality, and be the best at what you do. Today, Lynden's service area has grown to include Alaska, Washington, Western Canada, and Hawaii, with additional service extending throughout the United States and internationally, via land, sea and air. Our mission remains the same. Complex transportation problems can be solved in the hands of the right people, with the right tools and the right experience.



Over land, on the water, in the air—or in any combination—Lynden has been helping customers solve transportation problems for over a century. Operating in such challenging areas as Alaska, Western Canada, the South Pacific and Russia, as well as other areas around the globe, Lynden has built a reputation of superior service to diverse industries including oil and gas, mining, construction, retail, seafood and manufacturing.

Lynden is a family of transportation companies with the combined capabilities of truckload and less-than-truckload transportation, scheduled and charter barges, intermodal bulk chemical hauls, scheduled and chartered air freighters, domestic and international forwarding and customs services, sanitary bulk commodities hauling, and multi-modal logistics.

The Lynden family of companies delivers a completely integrated freight

transportation package. Our people have the knowledge to quickly respond and solve your multi-modal transportation problems. From origin to destination, over any terrain, managing freight movement, as well as the flow of information, Lynden provides innovative solutions to meet your unique needs, keeping you in control while providing you with services no other company can match.

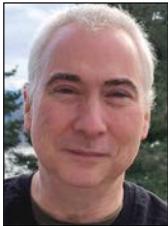
Lynden was founded on principles of integrity and quality. Its environmental commitment is based on a common-sense desire to be efficient and to do things right. Its culture of innovation and efficiency is completely in harmony with its commitment to protect the environment. Lynden's people, equipment, processes and technology are focused on the efficient use of resources and sustainable operations.

Proudly serving Alaska for more than 65 years.



MagicLogic Optimization Inc.

422 Richards Street, Suite 170 • Vancouver, BC • V6B 2Z4 • Canada
Phone: +1206 274 6248 • Fax: +1206 274 6238 • info@magiclogic.com • magiclogic.com



Tim Smith
Owner & CEO

MagicLogic was formed with a vision of supplying the best and most complete logistics solutions for load planning. Our powerful algorithms handle even the most challenging loads, and our R&D team is continuously working on providing even better results and adaptations for our customers.

Each day, many companies worldwide rely on our software to efficiently and safely ship their products and cannot afford downtime. Over the past twenty-five years, we have grown an enviable reputation for providing reliable products and an aftercare service second to none. Our ability to adjust and adapt to our customers' needs sets us apart from our competitors.



Since its inception in 1995, MagicLogic® has become an industry leader in the world of Load Planning software. All software is developed in house and is the result of continuous, intensive research and development. After more than two decades, our software continues to leverage the most versatile and powerful algorithms, providing optimum results while meeting the most complex, stringent business rules and requirements. Any aspect of MagicLogic software is customizable; we have met many of our customers' specific requirements that cannot be accommodated with off-the-shelf products—yet all software is compatible with multiple industry-standard APIs and file types.

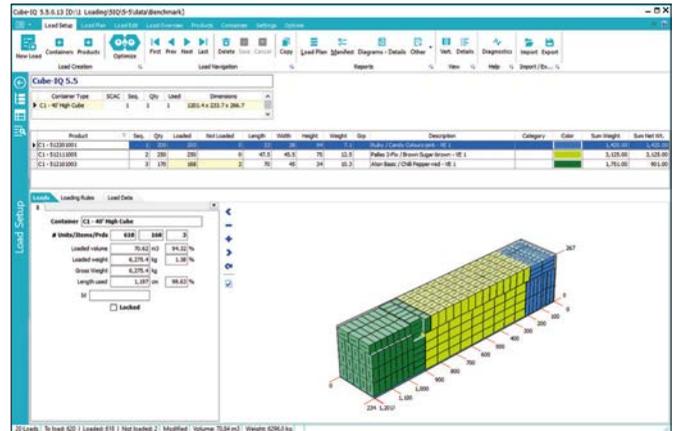
Our products include Cube-IQ® interactive load planning software for web and desktop, and BlackBox® for fully integrated high-speed Cartonization and complex Mixed Case Palletization.

Cube-IQ®

Cube-IQ is our state-of-the-art load optimization software. We load more and cover more operational requirements than any other software. MagicLogic offers versions that are industry-specific, following different implementation scenarios.

The software includes a built-in database engine that is shareable with multiple users and comes with full import-export capabilities, using Excel, CSV, JSON, or XML files. Cube-IQ gives you optimal volume/weight utilization, optimizing loading items into one or more containers. We can select the right sized containers for your load.

Cube-IQ has a graphical user interface with point and click and drag and drop functionality, so you can edit loads in real-time using the fully interactive load editing module. Once optimized, load planners receive clear 3D diagram-based instructions. Because Cube-IQ can cope with complex shapes, we load more items every time.



BlackBox®

Our BlackBox optimizer is a Windows service and is easy-to-integrate. Its key applications are Cartonization, selecting the right box for orders in eFulfillment, order after order, and Mixed Palletization for either Pack Station or Robotics.

BlackBox is load planning distilled to its purest form, ensuring the system is an integrator's dream. MagicLogic's state of the art loading algorithm is condensed into a plug-in module compatible with any WMS/ERP system on the market.

Our proprietary algorithm is central to BlackBox and is the culmination of many years of intensive research and experience in the field of Combinational Optimization. BlackBox is widely acknowledged as the best on the market and is frequently imitated but never bettered. It is built into the software provided by many Tier 1 logistics service providers. By utilizing true 3D placement of every item, our software delivers an optimal solution.



Mallory Alexander International Logistics

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Fax: 901-370-4288 • info@mallygroup.com • www.mallygroup.com



W. Neely Mallory III
President

Mallory Alexander International Logistics is a leading third-party logistics provider. We support manufacturers, retailers and other suppliers in the storage and shipment of their valuable cargo, and we do it with confidence—on time, with care, everywhere. We recognize the invaluable role our customers play in the international economy and in lives around the world.

We navigate the complex logistics landscape and build safeguards into our processes, ensuring accuracy and providing our customers peace of mind. We create reliable yet nimble systems to meet our customers' dynamic needs, at every touch point, every time.

Your biggest challenges are met with creativity and supported by our offices around the world and warehouses at strategic U.S. locations. As a financially secure company, Mallory Alexander has the stability and commitment to develop long-term relationships in global commerce.

Rely on Mallory Alexander for superior supply chain performance around the world.

Experience

Mallory Alexander works to establish partnerships with our customers to develop customized business solutions that fit their particular needs, while ensuring that their corporate goals are met. Combining best in class operating procedures and systems with a comprehensive network of agents and service providers allows customers to maximize the value of their supply chain spend.

At Mallory Alexander, we align our objectives with our customers' objectives. As a solution provider first, we are not bound to a limited group of suppliers or services officers. Offering value added services such as customs brokerage, white glove delivery, fulfillment and repackaging services, along with a select team of dedicated employees, clearly distinguishes us from other third party logistics providers.

Expertise

For more than 97 years, Mallory Alexander has been providing our expertise to a broad



range of diverse logistics problems. We lend our expertise to a wide range of customers in many industries. Mallory Alexander services include:

- Public and Contract Warehousing Facilities
- Freight Forwarding and Brokerage
- International and Domestic Air
- Domestic Transportation
- NVOCC
- Customs Brokerage
- Supply Chain Consulting
- Managed Logistics
- Cargo Security
- IT Solutions

Excellence

Our commitment to your success requires nothing short of excellence. Mallory Alexander is fully licensed, ISO9001:2018 and C-TPAT certified. We participate in government agencies and third party training and seminars to ensure the highest degree of compliance with the US government regulations. We are a winner of the President's E-Award for Exporting Excellence and the President's E Star Award for the promotion of U.S. Exports.

Mallory Alexander offers a proud tradition of innovative logistics solutions, tailored quality services, and leading edge technologies delivered every day by the best professionals in the business. We recognize that people are our greatest asset and our success is based on the integrity of people who have a passion and commitment to serve their customers.

Mallory Alexander is right-sized with the expertise and flexibility that our customers demand. We are proud to call Memphis, TN home for our company headquarters and the foundation for all our global offices.



Mantis

1000 Parkwood Circle, Ste 900 • Atlanta, GA 30339
678-784-4015 • info@mantis.email • mantis.group



**Yiannis
Panagiotopoulos**
CEO

Mission:

To provide customers with the best-in-class “self-serve” and scalable Warehouse Management/Optimization/Automation platform.



Mantis, established in 1996, is a leading international WMS/logistics software and solutions vendor with European origins. With 9 offices and many qualified partners, Mantis is present in 30+ countries in Europe, North America, Middle East and Asia.

Mantis’ flagship Logistics Vision Suite (LVS) is the only highly scalable “self-serve” WMS/logistics platform in the world. Its design represents a great leap in WMS/logistics technology, offering outstanding adaptability and flexibility. It enables Mantis customers with complex warehouse operations to easily configure, deploy and support the WMS by themselves, thus responding fast to their continuously evolving needs while at the same time enjoying an unbeatable low multi-year TCO. It is also the WMS platform of choice for integrators because it allows them to perform fast and smooth implementations and painless ongoing support and thus to drastically increase their overall profitability.

More than 600 customers, many of them leading multinationals, representing all major industries (3PL, Retail, Distribution/ Wholesale & Manufacturing) and selling channels (traditional & multichannel e-commerce) rely on LVS to run and optimize their logistics operations. LVS customers spread across many vertical markets, such as Consumer Products, Food & Beverage, Fashion, Pharmaceuticals & Medical, Cosmetics, Grocery Chains,

Appliances & Electronics, Building Materials, Tobacco, Spare Parts & Accessories, Chemicals, Books & Office Supplies, Furniture, etc.

LVS goes well beyond the management of the warehouse, offering extended capabilities such as value-added services, kitting, light manufacturing, dock & gate management, logistics customer/partner service, parcel management, centralized control of local and remote warehouses, advanced slotting, labor management, inventory optimization, flexible 3PL billing, comprehensive traceability management and powerful warehouse analytics.

Mantis complements LVS with flexible and affordable warehouse automation systems consisting of a smart combination of proven competitively priced technologies (Voice Picking, Pick-to-Light, Put Walls, Smart Pick Carts, Smart Glasses, RFID, etc.) that have been tightly integrated with LVS using advanced proprietary technology that significantly enhances automation’s overall performance, while at the same time minimizes costs due to the elimination of any relevant 3rd party control software.

Finally, in order to strengthen its warehouse optimization offering as well as its presence in North America, Mantis acquired in 2018, Insight GT, Inc., a leading international Slotting and Warehouse Optimization software solutions vendor headquartered in Toronto, Canada.



Matson

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Matt Cox
Chairman and CEO

Mission Statement

To move freight better than anyone.



A leader in Pacific shipping, Matson's ocean transportation service is recognized for its industry leading on-time arrival performance and award-winning customer service. Its diversified fleet features containerships, combination container and roll-on/roll-off vessels and specially designed container barges. Matson's ships and assets are U.S.-built, -owned and -operated, which provides significant advantages in the integrated trade lanes of the company's operations.

Serving Hawaii continuously since 1882, Matson is uniquely experienced in carrying the wide range of commodities needed to support remote economies.

Providing a vital, reliable lifeline to the economies of Hawaii, Alaska, Guam, Micronesia and select South Pacific islands, Matson is a key supply chain partner allowing customers to rely on the company's dependable vessel schedules to continually replenish inventories.

Matson's China-Long Beach Express has a strong reputation in the Trans-Pacific trade for reliable, expedited service from Xiamen, Ningbo and Shanghai to Long Beach, consistently delivering the best transit times and offering next-day cargo availability on the West Coast.

Matson's Pacific services are further enhanced by the transportation and distribution network of the company's subsidiary, Matson Logistics. A leading provider of freight transportation, warehousing, and supply chain services to the North America market, Matson Logistics helps companies source, store, and deliver their products faster, more reliably and cost

efficiently. Its services and technology are customized to drive efficiencies in—and costs out—of supply chain networks for retailers, manufacturers, and distributors.

Matson Logistics' sourcing, transportation, and distribution solutions include:

- Long haul and regional highway FTL and LTL service
- Domestic and international intermodal rail service with all Class I providers
- Specialized hauling, flatbed, and project logistics
- Contract and public warehousing at key East and West Coast ports including transload, cross-dock, and product preparation and handling down to the sub-SKU level
- Freight forwarding in Alaska; cross-border service to Canada and Mexico
- Value-added retail packaging services, light assembly, and product customization
- E-commerce fulfillment and DtC programs
- Asia-origin consolidation, PO management, customs brokerage, and NVOCC services for FCL and LCL shipments
- Online, on-demand portal to book, track, and manage shipments—from source to store

Matson is committed to operational excellence and providing its customers with the highest level of service across all modes of transportation.

Learn more at matson.com.



MD Logistics

1301 Perry Rd • Plainfield, IN 46168 • 317-838-8900 • Reno Office: 12125 Moya Blvd. • Reno, NV 89506
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John Sell
President and CEO

Our Mission:

At MD Logistics, our mission is to support our team of leaders, dedicated to each other and our customers, in order to remain fast and flexible while providing custom supply chain solutions in a high quality environment, on time, every time.

MD Logistics is a third party logistics company specializing in customized supply chain solutions. Our vertical markets include Life Sciences and Pharmaceuticals, Retail and Consumer Goods, as well as Transportation Services. In addition to cold chain and foreign trade zone warehousing, our services range from packaging, fulfillment and distribution to global freight forwarding and freight management.

Located in Plainfield, Indiana, and Reno, Nevada, our combined facilities include state of the art Pharmaceutical and Retail distribution space.

Life Sciences and Pharmaceuticals

MD Logistics designs customized supply-chain solutions for global distribution of trade, sample and clinical specialty products. Our facilities are fully licensed and accredited, maintaining cGMP and VAWD standards, enabling us to provide compliant cold chain storage for finished and WIP products. We deliver these standards through the utilization of Red Prairie WMS and strategically located state of the art facilities. We offer full integration with our customers' ERP software and support electronic data interchange for order management and reporting. Most critical to operational success, our dedicated and experienced pharmaceutical team stands behind our services to ensure the utmost product quality and maximum customer satisfaction.

Retail & Omni-Channel Logistics

MD Logistics client shared facilities manage high-volume, high-value, market-driven, retail-sensitive products for industries

The **GAME CHANGERS**
Expectations have changed, have you?

Omni-Channel Packaging FTZ Life Sciences Transportation



Customized Supply Chain Solutions

that expect maximum performance and flexible infrastructure. We handle B2B and e-commerce distribution, supporting the top 100 retailers in the country. Our tier one WMS fully integrates with our customers' ERP software and supports electronic data interchange for order management and reporting. By combining a wide array of custom solutions, the MDL team manages your supply chain from start to finish.

Transportation Services

Beyond traditional warehousing and distribution services, MD Logistics offers freight management, global freight forwarding and brokerage services. Our Indianapolis and Reno facilities are both located near International airports and within a day's drive of over 80% of the US population. We are strategically positioned to offer customers a range of all-inclusive transportation services and optimize their transportation budgets.



MHI

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John Paxton
CEO

MHI is an international trade association that has represented the material handling, logistics and supply chain industry since 1945. MHI works to deliver the latest knowledge, the strongest connections, powerful industry leadership, and the best market access for manufacturing and supply chain professionals. Our 800+ members and 17 Industry Groups, including WERC, power research and solution sourcing to drive the innovations you can see at our world-class ProMat and MODEX events.



MODEX 2022

As the speed of manufacturing, supply chain and transportation operations continues to accelerate, the future of our industry depends on today's forward-thinking decisions. From illuminating education to next-generation technology and equipment in action, MODEX lets you see what's coming — and take advantage of it to power your supply chain with more possibilities for years to come.

MODEX 2022 will allow you to make new contacts, discover cutting-edge solutions, and learn the latest trends that are sure to give you a leg up on the competition. Here, you'll encounter the best our industry has to offer to find:

- More visibility & accelerating time to market
- More reduction of operating costs & increasing efficiency
- More streamlining & automating your operations
- More connecting with solution providers & key thought leaders
- More discovering the latest technologies & innovations
- More learning the latest trends in over 100 educational sessions

On March 28-31, manufacturing and supply chain professionals will have an unrivaled face-to-face opportunity to network, learn, share, and get a sneak preview of where our industry is headed.

NO RISK, PLENTY OF REWARD

MODEX 2022 offers all of the resources you need to get your management's approval to attend. Visit modexshow.com/approval to find proposal writing tips and budgeting strategies. After all, the connections, education and solution-sourcing at MODEX 2022 could positively impact your business for years to come.

SET YOURSELF UP FOR FUTURE SUCCESS

The future of the manufacturing and supply chain industry starts at MODEX. It's where the brightest minds in the industry gather to network, learn, and share. Get a sneak preview of where the industry is going and find the people, solutions, and resources you need to compete in an increasingly challenging marketplace.

MODEX 2022 gives you a hands-on look at the future of manufacturing, transportation, and supply chain. Now more than ever, you're looking for greater efficiency, reliability, and resiliency for your operations — MODEX is the place to find more of these solutions.

So whatever solutions you need to move your business forward, you'll find them all at MODEX 2022. Register today at modexshow.com and join us at Georgia World Congress Center in Atlanta.



MPO

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Martin Verwijmeren
CEO

As a supply chain software company, MPO's goal is to empower brands and logistics service providers to consistently make perfect orders (on-time and in-full at the lowest possible cost). MPO's flexible, agile, and optimizing cloud platform ensures its customers drive resilience, sustainability, innovation, and high service levels while maximizing revenue and operational excellence.

Platform Capabilities

- Supply Chain Visibility & Digital Control Tower
- Transportation Management
- Omnichannel Order Management & Fulfillment
- Returns & Spare Parts Management

Manage Supply Chain Complexity

MPO's cloud platform for Multi Party Orchestration empowers organizations that manage complex networks of suppliers, plants, warehouses, and carriers across multiple systems, ERPs, WMSs, and sales channels to drive higher efficiency, revenue, service levels, and customer satisfaction.

Continuous Optimization

Through embedded intelligence and machine learning, the MPO platform provides real-time, continuous optimization across inventory, orders, and transportation for all inbound, outbound, and reverse flows.

- **Multi-Level Order Management.** Always choose the most cost-effective sourcing and execution options for every order, no matter the service level requirements.
- **Multi-Tier Inventory Management.** Match supply against multi-channel orders, accurately forecast stock, and optimally allocate inventory to B2B, B2C, and DTC orders.
- **Multi-Service Transport Management.** Plan and execute logistics for single- or multi-leg, multi-mode flows, with real-time status updates and in-app corrections management.

Flexibility, Agility, & Resilience

By connecting disparate systems and creating end-to-end visibility across the supply chain, MPO customers fuel strategic network collaboration and optimize inventory, orders, logistics, and transportation. With intelligent planning and execution, they're able to mitigate risk, control costs, improve performance, and better adapt to uncertainty and disruption.

Planning. Optimize every order with access to the largest carrier network, rate shopping, WMS planning and coordination, and by factoring constraints around delivery, capacity, and transportation. Configure complex omni-channel order flows and returns across all B2B, B2C, and



D2C parties, and easily modify and add new flows to accommodate evolving business needs.

Execution. Streamline and automate with fast processing speeds, timely milestones, alerts, and in-app exceptions management across all order types (purchase, sales, returns etc.). Handle rush orders cost-effectively by deconsolidating special orders into one or many shipments that are re-optimized.

Finance. Gain visibility into cost-to-serve and margins with summary and granular views into all partner costs, beyond transportation, including handling, customs, duties, and warehousing. Robust rate and service agreements provide detailed cost allocation and automated audits ensure accuracy.

Analytics. Drive continuous improvements with real-time dashboards and performance monitoring across order fulfillment performance (OTIF), supplier and partner score cards, inventory performance, transportation KPIs, customer service KPIs, and sustainability metrics, such as carbon emissions.

Quick-Time-to-Value

Bold projects don't have to cost millions or take years to implement. MPO's neutral, cloud-based technology supports real-time integration and can typically begin enacting transformative change within weeks. Most companies can expect to generate value within 2-4 months followed by incremental releases for a full rollout, with breakeven in less than one year.



New York Fulfillment

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Multi-channel Selling Made Easy — And Free!

At New York Fulfillment we know how expensive multichannel selling can be. It seems everyone wants a slice of your hard-earned revenue. Not us.

Let us fulfill your orders and you can sell on as many channels as you like with our multi-channel platform—for free. That means:

- No setup fees
- No subscription costs
- No transaction charges

Order Fulfillment Services for any Budget

- E-commerce Order Fulfillment
- B2B Order Fulfillment
- Kitting & Sorting
- Bagging & Labeling
- Gift & Promotions
- Return Processing
- Inventory Storage



New York Fulfillment makes order fulfillment easy! No complicated systems, no confusing pricing tiers, no nickel and diming for every extra item or service. Ship your inventory to us, and we'll take care of it from there.

Leave the Shipping to Us

We've made it our business to be experts in the art of helping your small business grow. We fulfill for companies that ship more than 100 orders a day, and those that ship less than 10 a month. We'll take care of the shipping side of your business so that you can concentrate on getting new customers and promoting your products.

Consider the Cost Savings

At a minimum, you'll save hundreds of dollars every month by taking advantage of our services. Consider the cost of warehouse space, boxes, tape, packaging materials, and commercial utilities, not to mention employees and the assorted expenses that come with hiring and training them. No one takes the day off, no sick days, no injuries or workman's comp, no paying employees for Facebook or Twitter time. Order fulfillment is an efficient use of your money because you pay for exactly what is done, no more.

NYF will take as much pride in your business as you do. Our double-check pulling system ensures that your orders are filled correctly the first time. Warehouse staff will pull your order and then it will be checked by the warehouse manager on duty before being packed and shipped. If this system fails for any reason, we'll fix it immediately, at our expense.

Fulfillment

We offer a complete e-commerce fulfillment solution, including:

- Pick, pack & dispatch
- Inclusive multi-channel integration
- Returns handling

Warehousing

We offer a range of storage solutions from our current facility in the South West. Leverage our high-volume accounts with these providers to offer your customers competitive rates and an efficient service.

Distribution

Through our distribution partners, we are able to offer a full range of national and international distribution. We can store your products in any combination of bulk, racking and bins for the best compromise between space saving and picking efficiency.

We Also Offer

- Freight Forwarding
- Domestic & International
- Freight & Parcel
- Air & Ocean
- Less Than Truckload
- LTL Visibility Through Technology
- Technology & Truckload Services

Contact New York Fulfillment today to learn how we make order fulfillment easy.



North Carolina State Ports Authority

2202 Burnett Boulevard • P.O. Box 9002 • Wilmington, NC 28402
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Brian E. Clark
Executive Director

Mission Statement

The mission of the North Carolina State Ports Authority is to enhance the economy of the State of North Carolina. The Ports Authority will be managed like a business, focused on the requirements of its customers. North Carolina's Ports are recognized for self-sustaining operations, environmental stewardship, highly efficient workforce, satisfied customers, and modern, well-maintained facilities and equipment.



North Carolina Ports has convenient locations in Wilmington and Morehead City, plus an inland port in Charlotte. Our customer-focused approach offers shippers excellent port communication and customized service.

If you're not yet working with NC Ports, here are our top 10 reasons why you should consider doing so:

1. We're **customer-focused**, with limited red tape that aids our commitment to helping new customers transition.
2. We've got **less congestion** than other East Coast ports. Some may be larger, but they're often MUCH busier.
3. We're equipped to handle **ultra-large container vessels**, thanks to our harbor enhancements and three neo-Panamax container cranes.
4. Our turnaround times are quicker than those of other ports. In fact, we've got the **fastest turn times on the East Coast**.
5. Our carriers do business **all over the world**, calling on ports in Asia, Europe, Africa and Latin America.
6. Our rates are very competitive, usually resulting in **cost savings** for you (and your customers, if that applies).
7. We've got **room for growth** that will be tailored to the specific needs of our customers. If you need an accommodation, there's a good chance we can make it happen.
8. Our strategic plan is business-friendly, with the goal of **providing you with a competitive advantage and more opportunity for profitability**. We want to be your best business decision.
9. Our **infrastructure investment** is designed to meet future industry needs, with some projects already done and more on the way. We've added a **101,000-square-foot, on-terminal cold storage facility** that can accommodate more customers than ever. We're also working to double the annual throughput capacity at the Port of Wilmington to more than one million TEUs and triple on-terminal refrigerated container capacity. Lastly, Sealand – a Maersk company, announced the addition of a weekly Port of Wilmington call to its NAE service, providing North Carolina importers and exporters with a direct service to key Central American and Caribbean ports.
10. **Our location is second to none**, with easy access to interstate highways and major railroads. North Carolina's ports are within 700 miles of 70 percent of the U.S. industrial base.

To learn more about how your business can benefit by working with North Carolina Ports, visit ncports.com.



The Northwest Seaport Alliance

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John Wolfe
Chief Executive Officer

About The Northwest Seaport Alliance

The ports of Seattle and Tacoma (Washington State, USA) unified management of their marine cargo facilities in August 2015.

The alliance is a port development authority governed by the two ports as equal members, with each port acting through its elected commissioners.



The Northwest Seaport Alliance (NWSA) brings together two of the nation's premier harbors to form a single, integrated gateway for marine cargo. Our combined terminal facilities, carriers and ports of call provide unlimited options and flexibility to suit your unique supply chain needs.

We are one of the largest container load centers in North America. Strategically located in the northwest corner of the U.S., we offer shorter transits from Asia, and are the first and last ports of call for many Trans-Pacific liner services. We are also a major gateway to Alaska and Hawaii; more than 80% of trade between Alaska and the lower 48 states moves through our harbors. In addition to containers, we are also a center for bulk, breakbulk and project/heavy-lift cargoes, and automobiles.

Make better connections

Shorter transit times from Asia make The Northwest Seaport Alliance the natural port of choice for time-sensitive container cargo headed to the Midwest, Ohio Valley and the East Coast.

Our on-dock rail, international and domestic rail service options from two Class 1 railroads along with near-terminal transload warehouse facilities offer plenty of options and the flexibility to move cargo how and when you want. Our close proximity to the 2nd largest concentration of warehousing on the U.S. West Coast also makes us an ideal location for warehousing, distribution, and transload operations.

We pride ourselves on being proactive and performance-driven, and put unrelenting focus on delivering operational excellence and best-in-class service for our customers. And our commitment to working hand-in-hand with our supply chain partners to provide cost-effective, innovative shipping solutions is unparalleled. At the end of the day, it's all about helping you, the shipper, get the job done.

Make our competitive advantages yours:

 Big Ship Ready

 Room to Grow

 Hassle-free Connections

 Cargo Handling Experts

 Best-in-class Customer Service



THE NORTHWEST
SEAPORT ALLIANCE

SEATTLE + TACOMA

nVision Global®

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Luther M. Brown
Founder & CEO

nVision Global, a worldwide leader in Supply Chain Services & Technology, provides configurable technology solutions enabling shippers around the world to optimize their transportation management and gain access to critical data. From our roots as a North American freight audit & payment provider, we now offer a full suite of logistics solutions that allows for end-to-end shipment visibility.

nVision Global has been in business for nearly 30 years and we have become the industry experts in Freight Audit and Payment, Data Normalization, Claims Processing, Freight Rate Procurement and Management, Spot Quote/Auction Platform and Best in Class Business Intelligence and Analytics, all of which are located within our IMPACT Transportation Management System.

Customers rely on our modular software solutions to provide the visibility and data that they need to increase efficiencies and reduce overall transportation costs.

While each customer has similar issues, every customer is different! We provide configurable solutions that meet every global customer's needs because our solutions are robust enough to address supply chain constraints, but flexible enough to fit into your environment. Unlike our competitors, we tailor our solution to fit your needs; not the other way around.

nVision Global Highlights include:

- Global Single Source Solution
- Industry Leading Analytical Tools
- Global Multi-Lingual Staff
- Process Invoices From Over 198 Countries
- Experts in Processing all Transport Modes
- Six Sigma Methodology

Core Services include:

Global Freight Audit/Payment

- Single Global Platform
- 120 Standard Data Elements Captured
- Utilize Latest Imaging Technology
- Experts in Complex Account Coding
- On-Demand Closings
- Non-Commingled Payments
- Online Exception Management
- Global Support & Services Teams
- Sarbanes-Oxley Compliant
- Automated Match Pay Processing



Transportation Management System (TMS)

- Global Freight Auto Rate and Auto Tender
- Shipment Tracking & Visibility
- Benchmarking
- Vendor Compliance Reporting
- EDI/API Compatible
- Vendor & PO Integration
- Shipment Creation & Rating
- Shipment Spot Bid & Approval
- Customs Documentation

Business Intelligence/Information Management

- Industry Leading Analytics Dashboard
- Global Mapping, Graphing
- Ad-hoc Reporting
- Least Cost Carrier Applications
- Single Source Data Warehouse
- Key Performance Indicator Development

Freight Rate Procurement

- Online Procurement Software that Manages the Entire Procurement Project
- Transport Providers Submit Bids Online

Contract Management

- Online Management Portal
- Rate Approval & Imaging Process
- Rate Expiration Notifications
- Storage of Expired and Current Rates
- Standardized Pricing Templates Available

Claims Management

- Loss & Damage Claims Processing
- Overcharge Claims Processing
- Service Failure Claims Processing
- nVision Global Managed or Self Service (Offered as a Software—SaaS)
- 87% Collection Rate
- Over 40 Years of Combined Experience

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Keith A. Hancock
CEO

Innovating Logistics, One Route at a Time

There are lots of ways to get from Point A to Point B, but there's only one optimal way. For your business to maximize its profit, you need to avoid weather disruptions, labor shortages, price increases and countless other inefficiencies.

Odyssey Logistics specializes in complex logistics, creating custom-tailored solutions across multiple transportation modes. Door-to-Done® is not just our commitment to ensure the timing, safety and integrity of your shipment from the moment it leaves your facility all the way through to final delivery, it is our assurance that our world-class logistics experts will manage the entire process, from request to receipt.



Odyssey resolves logistics challenges and offers adaptive multimodal logistics on a global scale. By leveraging analytics, carrier relationships, specialized assets, sustainability strategies and deep international expertise, we deliver in the most complex supply chains. Our unique capabilities, technologies and assets ensure that shipments — and businesses — keep moving at full speed, even in the face of persistent market headwinds.

Our clients benefit from expert tailored solutions across multiple transportation modes, backed by the power of our freight network exceeding \$3B globally.

At Odyssey, we have assembled a diverse portfolio of solutions that we make available to our clients in multiple ways, including:

Managed Services: With our experience and vast supplier network, our transportation management services clients know we will strategically manage their logistics operations, from the routine to the most complex and challenging, regardless of cargo size, class or destination.

Intermodal Services: Odyssey is a leader in intermodal metals transportation and is an expert in intermodal ISO tank movement for products that require special handling including chemicals and food grade liquids. We are the largest independent logistics company in ocean container transportation, servicing all the major ports across the country.

Freight Forwarding: Our customers rely on our comprehensive knowledge of import and export processes and regulations that enables us to design custom, cost-effective, end-to-end international transportation solutions for any size load. We're also a leading provider of a wide range of ocean freight consolidating and freight forwarding, trucking, project logistics, and warehousing-distribution services in Hawaii, Alaska, Guam and Puerto Rico.

Transportation & Warehousing Services: With strategically placed state-of-the-art warehousing facilities around the globe providing customizable and flexible logistics solutions, along with our specialized trucking expertise, we find our customers the capacity they need and provide high-quality warehousing, transloading, and delivery services.

Advanced Technology Solutions: Our commitment to delivering seamless customer experiences is made possible by our industry-leading investment in advanced technology platforms. From one touchpoint, users can manage all of their shipping needs—including accessing immediate capacity, choosing carriers, tracking and routing.

Regardless of the method, Odyssey delivers high-quality, integrated or individual services that optimize costs and sustain value, informing and elevating our clients' decision-making and processes outcomes.

Performance Team—A Maersk Company

2240 E. Maple Ave. • El Segundo, CA 90245

866-755-5120 x 6975 • marketing@performanceteam.net • performanceteam.net



Craig Kaplan
CEO

Our focus has always been on building partnerships through leveraging our expertise, human capital, technology, and integrity.



Locations

Los Angeles/Long Beach/
Inland Empire/
Northern California,
New York/New Jersey,
Chesapeake, Chicago,
Dallas-Fort Worth,
Houston, Kansas City,
Louisville, Miami,
Savannah, Seattle,
Shreveport, Vancouver



PERFORMANCE TEAM
A Maersk Company

For over 30 years, Performance Team—A Maersk Company has been a logistics leader in providing retailers, wholesalers, and manufacturers with end-to-end supply chain services. Now in our second year as part of the A.P. Moller-Maersk company, we are part of an ecosystem that enables customers to build a supply chain foundation as well as diversify when they need it most. Whether you need long-term supply chain solutions, speeding up your supply chain or slowing it down to work through volatile disruptions—our network provides you a multitude of options well-suited for your cargo and consumer. Across the US and Canada we have over 16 million sq feet of warehouse space, 500+ trucks that process, distribute and transport goods for North America's top retailers and manufacturers. In partnership with our customers, and others such as MIT, we continue to innovate and work hard to maintain our reputation as a leading e-commerce, distribution, trucking and consolidation company. Here are a few ways we can serve you and your customers:

E-Commerce Fulfillment & Distribution

Whether e-commerce, omnichannel, reverse logistics, pick-and-pack, transload, or carton-in carton-out, we have distribution solutions to meet your most basic or complex needs. PT has the infrastructure, material handling equipment, information technology, and management expertise to handle any task. We are proficient at adding flex space and human resources to adjust to your seasonal demands. Talk to us about how you can eliminate the need for costly real estate investments, construction and equipment, labor management and technology purchases. As your business expands and requires additional space or more sophisticated solutions, Performance Team will rise to the challenge to not only meet but exceed your strategic distribution needs.

Transportation

Our customers compete in fast-paced retail and manufacturing industries, demanding precise, accurate and informed transportation services. Performance Team—A Maersk Company has the skills and technology to support those time-sensitive requirements. No matter how difficult the mission, from drayage, store delivery, local

pick-up, consolidation, and delivery to distribution facilities and stores, PT is ready to step up to the plate and make a difference for your company.

Supply Chain Consulting

For Performance Team—A Maersk Company, logistics means strategy, execution, and integrity. Our extensive experience in supply chain consulting enables us to analyze your business and devise custom, effective, and flexible solutions to optimize the movement, handling, and distribution of your goods. Our logistics expertise can help you craft robust growth-oriented distribution networks, increasing your return on assets while managing overhead, without losing sight of your goal—giving you and your customers the best service available.

Technology

Performance Team—A Maersk Company utilizes best-in-class technology to streamline and improve the movement and visibility of your products. Our WMS and TMS systems are integrated with our customers' ERP systems and provide real-time updates and reporting, 24/7. This is handled through sophisticated enterprise application integration tools, utilizing well-understood EDI and API standards or proprietary interfaces as our customers require. Our API integrations with Shopify, Magento, and other platforms enable seamless e-commerce integration.

Pharr International Bridge

9900 S. Cage Blvd. • Pharr, TX 78577
956-402-4660 • pharrbridge@pharr-tx.gov • pharrbridge.com



Luis A. Bazán
Bridge Director

The Pharr International Bridge allows for safe, orderly and efficient crossings for commercial and non-commercial vehicles. We do this by proactively implementing local, state and federal policies and procedures, coordinating bilateral efforts with government agencies, trade associations and businesses in the U.S. and Mexico. We deliver on our commitment striving for excellence in logistics by offering the safest and most efficient full-service commercial crossing in the South Texas region.

After a year filled with challenges... 10 stats, 10 stories

Everything, it seems, was turned upside down in 2020, in Pharr, in Texas, in the United States, in Mexico and around the world. Despite the challenges posed by the COVID-19 pandemic, trade continued to flow, albeit at a sometimes staccato, sometimes erratic pace. The good news is that after a tough second quarter, things generally began to improve, at least in the world of U.S. export-import trade:

- www.ustradenumbers.com/port/Pharr-International-Bridge-in-Texas/
- bridge.pharr-tx.gov

Here are 10 items for you to take away:

1. Let's start with the big picture. The decline in value of exports and imports crossing the Pharr International Bridge was in line with the U.S. averages.

2. Yes, Pharr exports declined a touch faster than the U.S. average in 2020, but they surpassed \$10 billion for the ninth straight year.

3. Imports fared better, falling less than the U.S. average in 2020. Three perishable categories registered gains while a fourth, a \$1 billion fruit, fell only slightly.

4. Pharr is the second busiest border crossing in its Customs district, which runs from Del Rio to the northwest to Brownsville to the southeast.

5. Looking at Pharr's top 20 exports, its national ranking with 10 improved when compared to other airports, seaports, and border crossings. It was unchanged with six and declined with four.

6. On the import side, it was six that improved, eight stayed the same and six declined.

7. Pharr doubled its market share for exports of electronic ignition equipment over the last five years.

8. You can see a similar story with avocado imports. Pharr's percentage of U.S. imports up, of imports from Mexico up, and Mexico's percentage of total U.S. imports up.



Future view 2023: We're building another bridge! Pharr International Bridge Expansion Project.

9. Pharr leads the nation in berry imports and is on track for another record-breaking year.

10. Pharr exported \$2.48 billion in the natural gas category in 2020.

The Pharr-Reynosa International Bridge serves as one of the most important commercial ports of entry for the U.S.-Mexico border. Pharr ranks 3rd in the nation for trade with Mexico, behind only Laredo and El Paso, and currently ranks as the 7th largest border crossing in the U.S. in terms of value for imports and exports.

Servicing the Automotive, Energy, Technology and Produce Industries, over 120,000 commercial trucks cross north and south through the Pharr Bridge on a monthly basis. These shipments consist of the following goods and commodities:

Top 5 Exports

- No. 1** Natural Gas
- No. 2** Gasoline
- No. 3** Motor Vehicle Parts
- No. 4** Insulated Wire
- No. 5** Computer Chips

Top 5 Imports

- No. 1** TVs, Equipment
- No. 2** Avocados
- No. 3** Berries
- No. 4** Insulated Wire
- No. 5** Electrical Switches



Phoenix Logistics

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info@phoenix3pl.com • phoenix3pl.com



Robert Kriewaldt
Senior Vice President

Mission Statement

Strategic Real Estate.
Applied Technology.
Tailored Service.
Creativity. Flexibility.
These fundamentals reflect everything we do at Phoenix Logistics. We provide specialized support in locating and attaining the correct logistics solutions for every client we serve. Most logistic competitors work to win 3PL contracts, and **then** attempt to secure the real estate to support it. As an affiliate of giant industrial real estate firm Phoenix Investors, we can quickly secure real estate solutions across its portfolio or leverage its market and financial strength to quickly source and acquire real estate to meet our client's need.



Phoenix Logistics entered the third-party logistics space in 2017 as an affiliate of Phoenix Investors, a well-known commercial real estate firm that has been in operation since 1994. Based in Milwaukee, Wisconsin, we provide a broad range of logistics solutions tailored to meet the unique needs of each customer.

We operate on principles of continuous operational improvement and aggressive technology investment, ensuring that we can always provide the most advanced end-to-end supply chain support to our clients, including:

- **Real estate.** Warehousing capacity in the United States is tighter than ever before. Shippers need to pair up with logistics partners who offer creative and effective solutions for reaching key markets. In conjunction with our affiliate Phoenix Investors, we maintain approximately 50 million square feet of industrial, retail, and office space spanning 29 states. We are constantly expanding this footprint by restoring underutilized properties for industrial use.

- **Transportation management.** From freight brokerage to vendor management, we can operate as a lead logistics partner to help you optimize all inbound and outbound shipments at your facility. Our in-house trucking assets and extensive network of carrier partners enable us to offer highly competitive rates on shipments ranging from raw materials to finished goods.

- **Distribution and fulfillment.** Our experienced staff will help you build, operate, and maintain an efficient and cost-effective distribution network powered by advanced warehouse management systems and other supply chain technologies that reduce costs, eliminate operational waste, and optimize labor. Our rapid response team can also respond to emergency situations by finding, staffing, and opening critical space in weeks instead of months.

- **Big data.** Through advanced WMS, EDI, transportation and distribution management solutions, and much more, Phoenix is focused on offering logistics solutions driven by informed decision-making. We will help you analyze your pool of data to identify pain points and risks, then help you create realistic plans to optimize your supply chain.

- **Acquisitions.** Phoenix Logistics and Phoenix Investors have an established history of making fair deals that benefit the seller. If we purchase your real estate assets or your entire logistics business, you can rest assured that we will continue to invest in the acquisition and make a positive impact in the community surrounding it.

Logistical support spans these functions and more, so it's critical to find a 3PL that can identify and implement the best possible solutions for your operation. The team at Phoenix Logistics is ready to help.



PHOENIX
LOGISTICS

PITT OHIO

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Charles L. Hammel III
President/Owner

Customer Driven

We strive to understand the diverse and emerging needs of our customer base. We provide reliable and dependable solutions that exceed our customers' expectations.

People Driven

We know that our most significant resource is our people. The success of our organization can be attributed to our employees' dedication, pride, and outstanding work ethic. The commitment and loyalty of our employees facilitates the success of our organization.

Quality Driven

We recognize that quality is important to our customers. We develop repeatable operations, safety, security, claims prevention and vehicle maintenance processes that minimize variance and improve consistency. We are committed to providing our customers with high-value, cost-efficient solutions. Our commitment to quality is integral to our company.



PITT OHIO has been in the trucking industry for over 40 years as the transportation and logistics provider you can trust; a reliable and dependable freight transportation provider with a flexible approach who can anticipate your needs.

In addition to our legacy LTL freight solutions, PITT OHIO provides supply chain, expedite, freeze protect, warehousing, transloading, international and truckload services. We provide these logistics and transportation solutions to customers throughout the entire Mid-Atlantic, Midwest and New England states as well as across all of North America with our strategic partners.

Through technology, we drive simplicity for supply chains and meet our customers where they are in their digital journey. As leaders in digital technology, our differentiation strategy centers around reliable data, transparency, and actionable insights, so that you can better manage your customers' expectations. Our innovative tracking application, Delivery Track, provides dynamic day of delivery ETAs for LTL shipments.

Our commitment to People, Planet and Purpose encouraged us to rethink what we can do to revolutionize sustainability in business and in the trucking industry. We recognize the nature of our business, but also embrace opportunities for research

and application of renewable energy. Our renewable energy powered microgrid, found at two of our terminals, uses a patented, groundbreaking process that takes wind and solar energy into a battery system and the subsequent distribution of that power to points of use. We received the patent for this process in 2020.

It is our goal to promote the construction and maintenance of buildings that are environmentally responsible, efficient and healthy places to work. By creating healthy, encouraging places to work, we're able to hire and retain the best of the best in the industry. New construction projects are designed to meet certain sustainability standards in water, energy, and material usage efficiency to reach LEED (Leadership in Energy and Environmental Design) Certification levels. To date, PITT OHIO has 5 buildings that have achieved LEED status. Along with these certifications, we're reducing our carbon footprint with top of the line equipment, which also keeps our employees healthy, safe and comfortable.

Guided by visionary leadership and a shared spirit of innovation, PITT OHIO will continue to raise the bar with what differentiates us in the transportation and logistics industry—our service, safety standards, technology and sustainability.



Polaris Transportation Group

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polaristransport.com • customercare@polaristransport.com

Single Source Supply Chain Provider:

- Asset-based, award-winning Canadian LTL carrier
- Delivering to & from all points USA and Canada
- Canada and USA customs bonded carrier
- LTL, TL, & global 3PL
- Warehousing & distribution
- Industry-leading transit times & on-time delivery
- Expedited next day service between USA & Canada
- Online ordering, rating, & real-time tracking
- Cutting-edge technology including AI, robotics, distributed ledger & smart contract process
- Intelligent customs document processing for efficient cross border shipping to Canada & USA
- Technology company providing intelligent automation software.

Brand Promise

To provide industry-best supply chain solutions and customer experiences through innovation and technological development while focusing on our people, customers, and communities.



For over 25 years, Polaris Transportation Group has been an award winning carrier of choice for Fortune 500 companies, 3PLs, global freight forwarders and small to medium size businesses alike. The Polaris Transportation Group is comprised of four operating divisions that are not only leading providers of cross-border LTL but of global logistics, transport, technology and warehousing & distribution. With the recent development of their in-house digital laboratory Polaris is at the cutting edge of technological innovation in the supply chain sector. A snapshot of their individual service strengths as follows:

Polaris Transportation is the largest independently Canadian owned, cross border LTL carrier. They specialize in the shipment of dry goods, priced by the hundredweight or by the skid and deliver industry leading transit times between Canada and the USA. Polaris Priority Plus service offers guaranteed overnight service between Toronto and Boston, NYC, Chicago, Cleveland, Cincinnati & Columbus. Customer service is a top priority at Polaris, you can rest assured your shipments will be delivered according to their stringent quality process.

Polaris Global Logistics (PGL) investigates larger opportunities within their customers' supply chain. These solutions include global requirements where PGL acts as the critical link for the North American transportation and distribution segment. Within North America, they provide all modes of transport, warehousing, distribution and supply chain management services. They can effectively deliver to every zip and postal code within Canada and the USA on a daily basis.

Polaris Commercial Warehousing facility in Toronto, ON, can effectively distribute anywhere in Canada and the USA. From inbound shipment requirements, to picking and distribution of orders by courier, LTL or truckload carriers. With over 300,000 sq.



ft. of warehousing capacity, Polaris offers sorting, display assembly, co-packing for e-commerce, fulfillment and distribution. Commodities handled include CPG, bulk, medical devices, paper, apparel, industrial and commercial products. If you need a presence in Canada, Polaris's Toronto facilities serve as the ideal distribution hub.

NorthStar Digital Solutions (NDS) is a cutting-edge technology company providing intelligent automation software. Through innovative technical design and development, along with foundational industry experience, their smart people, partners and technology platform have combined the very best ingredients for intelligent systems processing across enterprise platforms. Their team of automation engineers, architects, data scientists, developers and seasoned industry leaders can move at great speeds with unconstrained research and development facilities and platforms. NDS has successfully integrated blockchain hyperledger, robotic automation and smart contract processes. NDS touches all vertical market spaces with a specialization in transportation. For more information, visit their website NorthStarDigital.solutions



Port of Long Beach

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Mario Cordero
Executive Director

Our Vision

The Port of Long Beach will be the global leader in operational excellence and environmental stewardship.

Mission

The Port of Long Beach is an international gateway for the reliable, efficient and sustainable movement of goods for the benefit of our local and global economies.

Value Proposition

Our customers choose the Port of Long Beach because we are the most reliable, most cost-effective and greenest gateway for the movement of goods to and from America's major consumer markets and producers.



The Port of Long Beach is a global leader in operational excellence and top-notch customer service, moving cargo with reliability, speed and efficiency—making it the premier U.S. gateway for trans-Pacific trade.

As the nation's second-busiest container seaport, the Port of Long Beach handles trade valued at \$200 billion annually and supports 2.6 million trade-related jobs across the United States, including 575,000 in Southern California and 1 in 5 jobs in Long Beach.

World-Class Facilities

Spanning 3,200 acres with 31 miles of waterfront, 10 piers, 70 ship-to-shore gantry cranes and some of the deepest berths in the country, the Port's world-class facilities can accommodate the largest shipping vessels in the world. Goods moving through the Port originate in or are destined for every U.S. congressional district.

With a keen eye toward building a successful and sustainable future, the Port is pursuing long-term capital improvement projects. In 2020, the Port opened a new bridge built for the modern era of shipping and goods movement. In 2021, the Port completed the final phase of the world's most advanced container terminal.

In the next 10 years, the Port is planning \$1.6 billion in modernization projects, to further prepare for the demands of global

trade. Plans include investing \$1 billion in on-dock rail projects, aimed at substantially increasing reliability, adding capacity, strengthening competitiveness, improving speed-to-market and allowing for the rapid movement of cargo throughout the harbor.

By operating Foreign Trade Zone 50, the Port of Long Beach lessens the impacts of tariffs and eliminates Customs clearance delays by having shipments delivered directly to qualifying businesses within Orange County and parts of San Bernardino and Los Angeles counties.

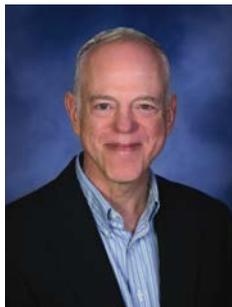
Customers choose the Port of Long Beach for the most dependable, cost-effective and fastest delivery of goods in the world, along with the strong relationships it maintains with industry, community, environmental advocates and partner agencies. In 2021, industry leaders named it "The Best West Coast Seaport in North America" for the third consecutive year.



Port of
LONG BEACH
THE PORT OF CHOICE

Port of Longview

10 International Way • Longview, WA 98632 • 360-425-3305
portoflongview.com



Dan Stahl
CEO

Mission Statement

Our mission is to promote commerce and economic development through strategic public investments for the benefit of our communities.



The Port of Longview, Washington, is the first full-service operating port on the deep-draft Columbia River shipping channel in Southwest Washington State. With more than 500 acres of active industrial property equipped for marine services, storage and industrial use, Longview is an efficient link in supply chains stretching between Asia, Europe and the Americas. In operation since 1921, the Port of Longview has a proud history of service as the connection between raw materials and the industrial customers who create finished goods around the globe.

At just 66 miles from the mouth of the Columbia River at the Pacific Ocean, Longview offers direct intermodal connections to all regional rail lines and swift connections to highways, including Interstate 5 north or south, and Interstates 84 and 90 for east and west bound cargo heading to or from the Port. Additionally, the Port of Longview is the only bulk/breakbulk port on the Columbia River able to utilize the full deep-draft navigation channel on a single tide, eliminating additional wait time for the next high tide.

Superior transportation connections make Longview ideal for bulk, breakbulk and project shipments via the Pacific Northwest.

Connecting source goods and materials to their final destination is only one of the connections the Port of Longview makes. The Port takes great pride in the connections it has made with customers and partners in support of Port operations. From the many different labor organizations that support the transfer of goods, to the transportation and logistics organizations that direct cargo through the Port on roads, rails and the river, the Port of Longview is known for its role in facilitating efficient business and trade for the benefit of all its strategic partners.



Port of Los Angeles

425 S. Palos Verdes St. • PO Box 151 • San Pedro, CA 90733-0151
310-732-3508 • portoflosangeles.org • @PortofLA



Gene Seroka
Executive Director

Vision

The Port of Los Angeles is America's Port®—the nation's #1 container port and the global model for sustainability, security, and social responsibility.

Mission

We deliver value to our customers by providing superior infrastructure and promoting efficient operations that maintain our essential role in the nation's economy and transportation network as North America's preferred gateway and a catalyst for job growth.

Ranked #1

When measured by container throughput, the Port has consecutively ranked as the number one port in the United States since 2000.



The Port of Los Angeles is the busiest container port in the Western Hemisphere, sustaining its rank as number one in the U.S. for more than 20 years with record volumes for containerized trade. Located in San Pedro Bay, 25 miles south of downtown Los Angeles, the Port encompasses 7,500 acres of land and water along 43 miles of waterfront.

Featuring various commodities from avocado to zinc, the Port's marine terminals manage a diverse portfolio of cargo-handling operations, including container, cruise and ferry, automobile, breakbulk, dry and liquid bulk and warehouse facilities that manage billions of dollars' worth of cargo each year.

Throughout the pandemic, all cargo terminals at the Port of Los Angeles have remained open and operational, keeping cargo flowing as an essential service to the nation. Executive Director Gene Seroka leads the Port's response to this global health crisis and concurrently serves as Chief Logistics Officer for the City of Los Angeles, overseeing Logistics Victory Los Angeles (LoVLA), a COVID-19 response effort that matches suppliers with local health care providers and others throughout the supply chain with PPE and other supplies.

An industry linchpin, the Port is an established leader of maintaining an efficient, sustainable supply chain, and a trailblazer in modernization and cybersecurity, taking a leadership role in adopting new technologies to improve the reliability, predictability, and efficiency of the flow of cargo across global seaborne trade. Examples of this forward-thinking are demonstrated in the Port's partnership with GE Transportation, a Wabtec company, in the 2016 launch of the digital information portal Port Optimizer™ and companion data tools Signal and Return Signal, launched in 2020. The Port has also partnered with IBM to design and operate a first-of-its-kind Port Cyber Resilience Center focused on detecting and protecting against malicious cyber incidents potentially impacting cargo flow.

During these challenging times, development and construction continue at the Port of Los Angeles. The Port will invest \$2.6 billion in infrastructure improvement projects through 2025, with a focus on improving the efficiency of goods movement across the supply chain. Both competitive and collaborative, the Port of Los Angeles serves as an economic bellwether and the premier international trade gateway of Southern California.

The Port of New York and New Jersey

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888-PORTNYNJ • **Twitter** @PortNYNJ • www.portnynj.com



Sam Ruda

*Port Director
Port Department
Port Authority of NY & NJ*

The Port of New York and New Jersey is the gateway to one of the world's most concentrated and affluent consumer markets. A system of terminals, rail, and roadways brings competitively priced goods to consumers' doorsteps and U.S.-produced exports to the world's buyers. We are the largest port on the U.S. East Coast, third largest in the United States, and ranked in the 'Top 25 Ports' by the World Shipping Council (WSC).

At the Port of New York and New Jersey, we know every hour counts when moving cargo. As the largest port on the U.S. East Coast, we have the facilities and options to move your cargo quickly, cost-efficiently, and in an environmentally sustainable way.

The Port of New York and New Jersey provides unmatched access to a large and concentrated consumer market, reaching 13.3 million people within one hour, 27.7 million people within two hours, 46.3 million consumers within four hours, and many more in key inland markets. This past year, we have seen record-breaking cargo numbers and are making critical improvements at our facilities to keep up with the pace, further ensuring the speed and reliability of getting your cargo to market.

A Global Gateway

From our terminals, rails, and roads, we quickly and efficiently deliver goods to local and inland consumers and businesses, reaching 134 million people within 36 hours by rail or truck. We are the first call for more than 75% of arriving vessels, and their cargo is often delivered by rail to inland destinations before the vessels arrive at the next U.S. port.

Collaboration, Coordination, and Communication

Relying on the support and collaborative efforts of our Port partners and the Council on Port Performance, the Port of New York and New Jersey remained steadfast in our commitment to deliver cargo despite challenging times. Through collaboration and communication, we work together and share information to move essential goods to millions of Americans and ensure the smooth flow of goods through our port.

One Port, Many Operations

Our six container terminals welcome the world's largest ships, and our rail lift capacity is the largest on the U.S. East Coast. Our facilities also include three auto terminals, two cruise terminals, four ExpressRail facilities, New York New Jersey Rail, and access to more than 1 billion



square feet of industrial space within 50 miles. Our diverse portfolio serves container shipping, automobile processing, bulk and breakbulk cargo, warehousing and distribution, cruise passengers, intermodal, refrigerated cargo, Foreign Trade Zone, cross harbor rail, and numerous maritime support industries.

Growing and Improving

The Port of New York and New Jersey has seen 14 consecutive months of record volume. In the first eleven months of 2021, the Port moved 8.2 million twenty-foot equivalent units (TEUs), a 19% increase from the same period in 2019 and more volume than in all of 2020.

In July 2021, the U.S. Department of Transportation approved a \$44 million infrastructure grant for road improvements at Port Newark, one of the bistate agency's six marine terminals. This discretionary grant will go toward a \$176-million modernization project to create a safer, more efficient road network configuration, delivering vital safety upgrades to a major connector essential to local and regional commerce.

These upgrades will alleviate traffic, help reduce greenhouse gas emissions, improve air quality for surrounding communities, and aid in moving more goods in and out of the port complex more efficiently.



Port Tampa Bay

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Paul Anderson
President and CEO

“Port Tampa Bay’s container business is growing exponentially as our location allows BCOs and container carriers to get closer to their customers with the expansion of DC capacity along the Tampa Bay/Orlando I-4 Corridor.”



Port Tampa Bay has emerged as Florida’s new supply chain solution for container cargo and one of its most efficient. Even with container volume up 29% over the past year, Port Tampa Bay has experienced no cargo congestion or delays, and stands ready to welcome new business.

Florida’s Distribution Hub: The addition of new direct Asia container services provided a giant leap forward in serving Florida’s largest and fastest growing market—the Tampa Bay/Orlando I-4 Corridor. This Central Florida region is also one of the hottest industrial real estate markets in the country and Florida’s hub for distribution, logistics and manufacturing. Home to close to half of Florida’s population of 21 million residents, and welcoming a majority of the more than 126 million tourists who typically visit every year, the I-4 Corridor has the largest concentration of DCs in the state.

To keep pace, the Port recently expanded terminal capacity with additional paved storage and extended berths. The next phase will include three additional cranes and equipment, and new trans-load warehouse facilities.

New Services Boost Efficiencies

In 2019, Port Tampa Bay welcomed CMA CGM, COSCO, Evergreen, OOCL, Maersk and Sealand to its family of container lines offering new services, joining established carrier partners ZIM, MSC and Seacat. In 2020, ZIM launched a new Tampa Mexico Shuttle container service, and in 2021, Dole Ocean Cargo Express began a new direct service from Central America. For the beneficial cargo owners in the Port’s immediate backyard, these new services are especially good news. These companies are seeing significant savings in their supply chain/distribution costs as truckers can now make as many as 3 to 4 round trip deliveries per day from Port Tampa Bay to their DCs, which then service the entire state and benefit from attractive truck backhaul rates to reach into markets throughout the Southeast and beyond.

Together with partners like container terminal operator Ports America and cold storage specialist Port Logistics Refrigerated Services, Port Tampa Bay is expanding infrastructure and capacity to ensure it is well-positioned for continued strong growth.



ProTrans

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Gary Cardenas
CEO

We believe in empowering our experts to create strategic solutions and develop leading edge technology that strengthens our clients and sets the standard for service in the logistics industry.



ProTrans is a global supply chain management provider that specializes in Third-Party Logistics (3PL), Freight Consolidation, and Custom Software services. ProTrans is committed to creating innovative, unique, and data-driven solutions that reduce your logistics spend and increase overall efficiency. We do this by conducting a detailed analysis that guides the creation of your strategic plan. We then manage your movements from A to Z and give you the software to see everything and make strategic decisions. All throughout, we are dedicated to finding new savings opportunities to continuously improve your supply chain.

With 29+ years of experience we have seen it all and have created a strong network filled with trusted partnerships, strategic locations, and consistent capacity. We are headquartered in Indianapolis, Indiana and have 30+ locations in North America and over 300 affiliated locations worldwide.

ProTrans Solutions

- Turnkey Third-Party Logistics (3PL):** Our 3PL solutions, including supply chain management, supply chain design, transportation procurement, and route management, are designed to fulfill the increasingly complex demands of today's logistics.
- Optimization through Consolidation:** We move more of your materials with fewer trucks, reducing your carbon footprint while keeping costs down and efficiencies high.
- Optimization through Pool Distribution:** Our pool distribution solutions are an extended option available to provide cost savings in your supply chain. Our flexible network allows us to receive, validate, and inventory your goods for final delivery in a particular geographic region, thereby greatly reducing redundant shipping costs and unnecessary handling.
- Unplanned/Expedited Freight Management:** ProTrans Freight Management solutions move your freight in the necessary time frames with real-time visibility by using dedicated teams focused on monitoring and tracking your loads.
- Comprehensive Materials Management:** Flexible warehousing solutions that respond to your unique inventory and fulfillment needs.
- Simplified Cross Border Processing:** Multiple validation and verification options for when you need to move inventory across the border.
- Intellectual Talent:** ProTrans' overall success lies in our people. We've made a full commitment to our Talent Development Program, an in-depth program covering all departments in our company.



R2 Logistics

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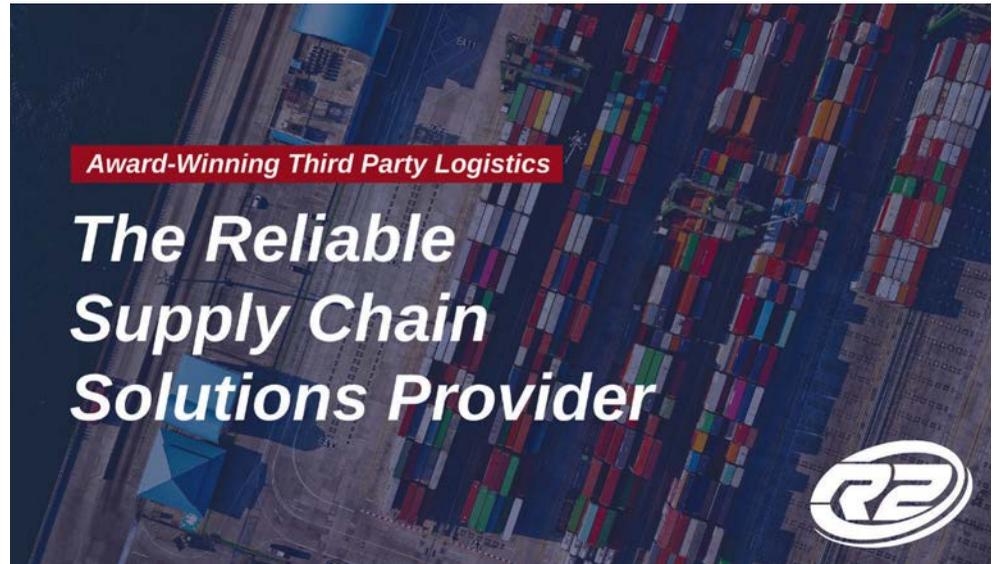


Ben Gase

Founder and CEO

The R2 Way

- Obsess Over The Customer
- Do It Now Attitude
- Take Responsibility
- Be Different
- Always Think Positively
- Compete, Compete, Compete
- Over-Communicate
- Do Your Job
- Play The Long Game
- It's About The Team



WHO WE ARE

Founded in 2007, R2 Logistics is a global provider of transportation services and logistics solutions. As a third-party logistics company, we provide access to thousands of contracted transportation providers. With offices located across the United States we have the capacity to resolve all your shipping needs. Backed by game-changing technology and our culture for Reliable Service and Relentless Passion, we've built a strong reputation as an industry leader.

CUSTOMER SERVICE IS PRIORITY NUMBER 1

At R2 Logistics we pride ourselves on offering a superior customer service experience. Whether you're a Fortune 500 company or a small family owned business you are valued by R2 Logistics. Our Customer Service Advisory Board was formed to ensure every customer across the board is given the time and attention they deserve. Comprising a member from each of our offices, this group holds a weekly conference call to hold everyone accountable by discussing any service issues or successes. The team also meets twice annually at our corporate headquarters to brainstorm new and innovative ways to offer the best customer service the transportation industry has ever seen.

TAKING TECHNOLOGY FURTHER

R2 Logistics is superior to other 3PLs by how we utilize technology to ensure the highest level of accuracy and service. Our TMS creates data that helps shippers streamline tasks and reduce costs. With an integrated customer portal, our tools deliver real-time connectivity across the supply chain. Whether you need transparent visibility to your operations, optimization of your business processes, or strategic data and reporting to help drive decisions, R2 Logistics has the tools you need.

SERVICES & CAPABILITIES

- Managed Transportation
- Truckload
- LTL
- Flatbed & Specialized
- Expedited & Air
- Intermodal
- Ocean
- Reverse Logistics



RateLinx

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Shannon Vaillancourt
President and Founder

Mission:

RateLinx was founded in 2002 by Shannon Vaillancourt, with the idea there was a better way to give companies complete visibility to their supply chain. On a mission to revolutionize supply chains, they help customers accelerate their supply chain intelligence by driving data quality and delivering real-time, accurate, and tailored analytics, dashboards, and reports.

An award-winning provider of logistics software and services, RateLinx connects ship, track, and pay data, to deliver better logistics insights and better business outcomes. RateLinx collaborates with customers to drive significant savings and insights in their logistics operations in 45 days or less with low IT.

The best logistics data provider improves shipping, visibility, and payment.

RateLinx is an award-winning logistics solutions provider recognized in four Gartner market guides. Delivering all your logistics data in a single platform, RateLinx tailors its solutions to help you improve your business. The powerful RateLinx data quality engine leverages AI and machine learning to cleanse and normalize your freight data, delivering complete, timely, and accurate insights across your logistics processes. RateLinx solutions can stand-alone or augment any current systems with fast deployment and low IT for faster ROI.

TMS

ShipLinx is a global, high-volume, enterprise-class TMS that meets all your supply chain demands with no professional service or change fees. ShipLinx supports unlimited shipments, carriers, modes, locations, users, and currencies for maximum capability. Cloud-based and auto-updated, ShipLinx reduces costs and improves service by optimizing complex freight with multimodal execution, scheduling, and rating tools. Expand your TMS capability with multi-carrier small parcel, custom freight marketplace, and inbound supplier portal. RateLinx onboards any carrier quickly at no additional cost. Augment your existing TMS to achieve faster ROI with lower costs over a new system.

Real-Time Visibility

Our TracLinx real-time visibility platform delivers the scalability you need to track shipments worldwide. We'll onboard any carrier at no extra cost to track all locations, suppliers, customers, and volume in real-time. Get superior real-time visibility accuracy over multimodal shipments, suppliers, and carrier performance with



See your logistics and data like never before.

the industry's best data quality. Enhanced with AI, TracLinx powers accurate ETAs to streamline operations. Customizable predictive analytics and prescriptive insights alert you to potential issues and improvement opportunities.

Freight Audit & Payment

PayLinx is an artificial intelligence-driven freight audit and spend intelligence platform. Enabling process automation, exception management, and advanced analytics, PayLinx improves cost strategies, decision making, and carrier partnerships. Take control of your freight spend and eliminate exceptions and rate tolerances. Advanced analytics enable better decisions through powerful insights. Measure and monitor critical custom and standard KPIs in real-time.

Analytics

Even with a TMS, track and trace, and visibility systems in place, successful initiatives are still out of reach for many shippers. RateLinx's powerful analytics platform connects your existing systems and can turn your data into positive business results. Leverage advanced analytics to find cost-saving opportunities that impact your organization's bottom line.

RateLinx

Red Classic

1800 Continental Blvd, Suite 103 • Charlotte, NC 28273
866-768-8809 • info@redclassic.com • redclassic.com



Spencer Webster
President

Outstanding Experiences. Exceptional Outcomes.

Mission Statement

Our mission is to be the safest provider of transportation, logistics and maintenance solutions to enable our customers and communities to thrive.

Services

- Truckload
- LTL
- Dedicated
- Intermodal
- Flatbed
- Drayage
- Refrigerated
- Logistics Solutions
- Managed Transportation
- Fleet Maintenance



Who We Are

At Red Classic, we know that getting things where they need to go—on time and efficiently—is what shippers need. Red Classic is a wholly-owned subsidiary of Coca-Cola Consolidated, the largest Coca-Cola bottler in the U.S. that's been serving the world's best brands and flavors for more than 119 years. Today, we drive operational efficiency for customers across dozens of industries by offering a full range of transportation and fleet maintenance solutions customized for your business needs. Great brands trust us with their products because we deliver outstanding experiences and exceptional outcomes every day.

Transportation Solutions

With regional company-owned assets, an over-the-road (OTR) division and a network of more than 31,000 carrier partners managed through our full-service brokerage department, we have the reliable capacity your business demands. We offer truckload, less than truckload (LTL), dedicated and other logistics solutions for raw materials and finished products throughout the continental U.S. and Canada.

Fleet Maintenance Solutions

With more than 20,000 assets under management and 80+ full-service maintenance shops, we provide customized maintenance solutions that reduce downtime and labor costs. Our skilled technicians service more than 150 equipment types including class 7 and 8 tractors, trailers, material-handling equipment and everything in between.

The Red Classic Difference

- **Safety Comes First.** Safety Comes First is Red Rule #1. We invest in extensive, systematic training and the latest technology to ensure our drivers, our equipment and our freight arrive safely.
- **Assured Capacity.** As an asset-based 3PL and one of the largest beverage haulers



in the U.S., we understand the demands of today's shipping environment. Our growing network means we can expand with your business as your need for capacity evolves.

- **Industry Expertise.** Our experienced logistics team has the expertise to address the most complex and demanding shipping environments, saving you time and money.
- **Unparalleled Service.** Our commitment to extraordinary customer service breeds a culture of partnership with our customers that is second to none. We're proactive and responsive, so you can rest easy knowing your freight is handled with care.

Our Promise to You:

- We want you to experience service excellence in every interaction.
- You can count on us to operate with integrity, always.
- Our expertise is there for you, whenever and wherever you need it.

Experience what our customers already know—no matter what you need, Red Classic delivers.



RedStone Logistics

888-733-5030 • solutions@redstonelogistics.com • redstonelogistics.com



Jim Ritchie
President & CEO

Experience is Everything

RedStone is a unique, third-party logistics company specializing in improving supply chain effectiveness and efficiencies. Founded by logistics industry veterans with over 100 years combined experience, RedStone has expertise in managing supply chains of all sizes and complexities.

Our services include:

Transportation

- Small Package
- Air Cargo
- LTL
- Truckload
- Intermodal
- Ocean
- Rail
- Expedited
- Final Mile

Custom Solutions

- Supply Chain Optimization
- Contract Logistics
- Transactional Services
- Consulting



888-733-5030
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redstonelogistics.com

Follow us on:

Change Your Perspective on Third-Party Logistics

To improve your supply chain performance, you need a partner that can examine every aspect of your business for opportunities to increase visibility, drive efficiency, and lower your costs.

Complete Logistics Services

RedStone Logistics creates value by focusing on discovery and data collection, process design and automation, strategic procurement, and continuous improvement. After we optimize your supply chain processes, our dedicated team ensures on-time delivery and pick-up of shipments and, when necessary, simplified claims management.

Reduce Your Supply Chain Costs and Much More

Many 3PLs can lower your rates, but that is the simplest part of the equation. To bring you more value, we place our focus on four keys to supply chain success:

1. Discovery & Data Collection

We use data to initiate the improvement process. Applying our technology and expertise, we improve your visibility, real-time reporting, and information flow.

2. Process Design & Automation

We work to automate routine processes and drive efficiencies to give your supply chain a competitive advantage.

3. Strategic Procurement to Maximize Pricing Efficiency

Leveraging our procurement experience and buying power, we work with you to secure the best rate structures in the industry.

4. Continuous Improvement to Drive Savings Year-Over-Year

Our review process and commitment to continuous improvement give you peace of mind, knowing that we have become an extension of your business.



In Pursuit of Supply Chain Perfection

Custom Solutions for Your Business

Manufacturers

Our roots are in manufacturing, and we know that to be the best you must focus on innovation, productivity, and quality. Unfortunately, driving the same level of efficiency in your supply chain is too often overlooked. You're the expert in manufacturing; we're the experts in supply chain efficiency.

Consumer Packaged Goods Companies

It is easy to get overwhelmed as you try to anticipate the moves of your competitors, consumer buying trends, and emerging technologies. We can help with strategies that include digital innovations, omnichannel solutions, and other efficiencies to help you meet your financial goals.

Distributors

As an individual distributor, your success depends on your ability to fulfill orders quickly, ship orders accurately, and stay within budget. RedStone can optimize your supply chain to improve your bottom line.

Benefit from Our Experience

RedStone was founded by logistics industry veterans with over 100 years combined experience working with many of the largest companies in the world.

Put the power of our experience to work for you.

REI - Real Estate Investments

Paseo de la Reforma 483, Piso 14 • Col. Cuauhtemoc, CP 06500, CDMX
rarroyo@rei.realestate • mdelgado@rei.realestate



Raúl Arroyo
Management Team



Miguel Delgado
Management Team



REI is an industrial real estate company, which combines the experience of its partners in real estate development and industrial buildings respectively. It is in charge of creating value for its investors by offering 360° solutions, from the acquisition to the disposal of assets.

REI is a Mexican industrial real estate developer with expertise in investment, development, leasing, real estate debt, management and disposition of portfolios and single properties. A tried and tenured real estate solution.

We create value for our investors, offering 360° solutions, from acquisition until the disposition of the assets:

- **Acquisition:** Coordinate due diligence and portfolio valuations to ensure viability and minimize risk.
- **Development:** Coordinate external experts to review construction budgets, specs and ensure on-time and on-budget delivery.
- **Debt:** Negotiate construction and stabilized asset loans with major financial institutions with optimal conditions.
- **Leasing:** Daily contact with clients and brokers to negotiate leases, renewals and expansions.
- **Management:** Ensure contract fulfillment and building's conditions to maintain portfolio value.
- **Disposition:** Negotiate and coordinate with the legal and property management teams the explanation and delivery of information required to sell any property or portfolio.

The Team Experience

- Manage more than US\$2B AUM
- 300+ buildings under management
- Experience in 15+ markets
- 40+ years of experience accumulated in REI's team
- Administration of approx. 45 million sq. ft.
- Class A industrial complexes
- REI's team has participated in the construction of more than 50 buildings and has experience negotiating the disposition of portfolios of more than US\$1B AUM.
- From 2017 until 2021, the team has participated in the acquisition, development, management, and disposition of more than 7.5 million sq. ft. of industrial premises with an approximate value of more than US\$700 million.



Rinchem Company, Inc.

5131 Masthead St. NE • Albuquerque, NM 87109 • 505-345-3655 • 888-3PL-CHEM
info@rinchem.com • rinchem.com • rinchem.com/locations



Chuck Breinholt
President

STREAMLINING THE CHEMICAL SUPPLY CHAIN

Our Mission:

The mission of Rinchem Company, Inc. is to be the most responsive provider of Chemical Management Services any of our stakeholders ever experience. Responsiveness is identifying, documenting and fulfilling every expectation and requirement of our stakeholders. Stakeholders include customers, employees, communities, regulatory authorities and owners.

Locations:

- United States
- Taiwan
- Singapore
- South Korea
- Israel
- Ireland

Associations:

- ISO 9001
- IWLA Member
- WERC Member
- NACD
- SmartWay Transport Partner

Managing the Global Chemical Logistics Network

Rinchem Company, Inc. is a lead logistics provider with proven expertise in creating and managing safe and efficient supply chains for high purity, pre-packaged chemicals and gases. We apply four decades of expertise and innovation to provide the most reliable, efficient, and cost-effective solutions for our customers. Our services include global warehousing, transportation, freight forwarding, and lead logistics technology solutions.

Rinchem operates a broad network of temperature-controlled, hazardous materials compliant warehouses at locations across North America and in parts of Europe, the Middle East and Asia. Rinchem's transportation and warehousing networks are linked through Chem-Star®, a secure, Internet-based logistics management application and reporting interface.

Rinchem Services and Areas of Expertise

Our areas of core competence include:

■ Lead Logistics Solutions:

Coordination of all logistics-related activities and suppliers, including analysis of and recommendations regarding modes of transport, opportunities for consolidation, customer service performance levels and opportunities for supply chain improvement

■ **Warehousing:** Public or dedicated, temperature-controlled or ambient, regulated or non-regulated warehousing and handling of high-purity, pre-packaged chemicals, gases and other materials

■ **Transportation:** Intermodal, over-the-road transportation, cross-docking or local delivery of wet or dry chemicals or other materials in bottles, cases, drums, totes or other specialized containers

■ **Freight Forwarding:** International shipment of regulated, temperature controlled chemicals and gases, including import, export, customs clearance, shipment consolidation and deconsolidation, drayage to and from the port, bonded warehousing, cross-docking, transloading and door-to-door delivery services.



■ **ISO Yard Transportation:** International ISO tank transportation and storage at select Rinchem warehouse locations

Chemical Management Expertise and Logistics Network Optimization

Rinchem's core area of expertise is our ability to safely and efficiently manage chemicals and gases, achieving full regulatory compliance and a reduction in risk, particularly for organizations in the semi-conductor industry. Unlike many general-purpose third-party logistics providers, Rinchem's assets, employees, systems, processes and expertise are customized for the management of chemicals and gases. Allowing Rinchem to manage the chemical supply chain enables companies to focus greater time and resources upon their own core competencies.

Rinchem engages in long-term, strategic relationships with its customers to systematically drive cost, risk and waste out of the supply chain. Strategies for improvement include the utilization of systems and expertise that deliver greater visibility, flexibility and control, leading to inventory reduction and improved service levels. Rinchem also helps customers to consolidate and optimize shipments and routing, reducing a company's environmental footprint, as well as overall logistics costs.



RMX

HQ: 355 Food Center Dr. • Bronx, NY 10474
888-824-7365 • rmxsales@rmxglobal.com • rmxglobal.com



Kelly Greenlee
President

Mission Statement

Deliver customer-specific logistics solutions through exceptional customer service.

Memberships / Awards

- TIA Member
- NASTC Best Broker program
- EPA SmartWay Transportation Partner (Logistics)
- Diamond Broker Program - Truck Stop
- ITS Financial
- *Transport Topics* Top Freight Brokerage Firm
- SEDEX Respect Program
- Truckers Against Trafficking
- Top 3PL by *Food Logistics Magazine*
- 2021 Top 100 3PL Provider by *Inbound Logistics*
- 2021 Premier Carrier by FourKites

With locations in

- Lakewood, CO
- Springdale, AR
- North Port, FL
- Fayetteville, NC
- Petersburg, WV
- Bronx, NY
- Manchester, NH
- Auburn, ME



RMX Global is known for a legacy of leadership in truckload logistics since 1983. In addition to our 39 years of nationwide full truckload expertise as a broker and serving the complex needs of the food products industry, RMX's last-mile division, Last Mile LLC, relieves the many issues shippers face delivering into a major city.

STRATEGIC - HISTORIC - EXPERIENCED

We simplify complex logistics challenges across the U.S. so customers and carriers can focus on running their business. RMX is known for efficient, progressive, and customer-focused solutions to improve freight transportation for almost 40 years.

RMX SOLUTIONS

- Full Truckload: Refrigerated/Dry
- Flatbed
- Intermodal
- Expedited
- Dedicated
- Specialized
- Supply Chain Management: 3PL/4PL
- Custom Management Technology
- Customized Refrigerated Fleet
- Warehousing and Cold Storage
- Last Mile Service into NYC 5 Boroughs

Northeast Last Mile Logistics

Last Mile LLC was formulated by the feedback of our valued customers. No longer did they want to incur the tolls of the Northeast, the traffic, and the difficulty delivering to their customers who are located within a

metropolitan region. Last Mile LLC takes all the headache out of their delivery process into a major city and handles all their issues for them. We save you money on your overall transportation by relieving your biggest issue, which is delivering into NYC. Allow your trucks to drive on the easy road, while we take on the hard ones.

"We offer tremendous flexibility, long-term industry experience—since 1983—but what really differentiates us from the rest is our people. RMX is a well-seasoned team that has decades of experience, as a broker, which translates to decades of industry relationships. We still enjoy doing business with some of our original customers, and I think that speaks volumes."

—Kelly Greenlee, President of RMX Global

Be a part of the RMX team. Contact Us Today.
RMXglobal.com



Romark Logistics

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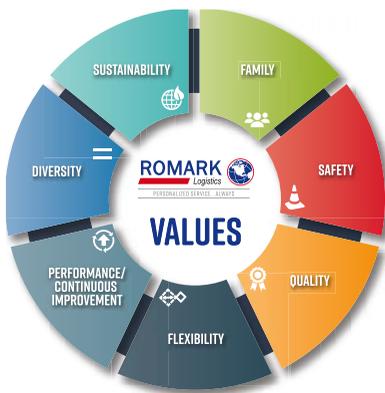


Marc Lebovitz (left)
President

Mission:

To deliver customized logistics solutions built on an unwavering commitment to provide outstanding service to our customers. We provide customized and innovative services including distribution and fulfillment, transportation management, packaging and value added, and real estate development.

A family-owned company with integrity, we've built long-term relationships by constantly adhering to the following core values:



Personalized service is not just a tagline at Romark Logistics. For nearly 70 years, we've been providing our customers with customized, advanced solutions for their complex logistics and supply chain challenges. With an unwavering commitment to our customers, we strive to deliver best-in-class service as a full spectrum 3PL provider. To meet demand from our growing customer base we've recently expanded our distribution facilities.

In the last two years we've added approximately three million square feet of distribution space. Recent expansions include enhancements to infuse robotics and automation. As we continue to grow, our real estate division has another 850,000 square feet in its construction pipeline over the next 18-24 months.

Our dedicated Romark team members work effectively behind the scenes to ensure that all aspects of our clients' logistics requirements are in sync. Our clients include major food, beverage, pharmaceutical and retail businesses globally.

Romark offers extensive services to handle logistics along the supply chain, including:

Distribution and Fulfillment

Our warehouse solutions feature both contract and public food-grade options, and we specialize in temperature-controlled requirements. With the latest automated systems and technologies, we offer short- and long-term storage, cross dock operations, e-commerce fulfillment, inventory management services, packaging, assembly and JIT delivery, plant support reverse logistics, and supply chain consulting.



Recently completed 189,000-square-foot expansion of the Hazleton Distribution Center in August 2021.

Transportation Management

With web-based transportation management software, dry and temperature-controlled applications, and supply chain expertise, we keep products moving domestically and internationally and offer the ease of a single point of contact. Our transportation services include dedicated fleet management, freight management, transportation brokerage, over-the-road transportation, pool distribution, white-glove service, and shuttle service.

Packaging and Value-added Solutions

From customized kit assemblies to primary and secondary packaging, our processing and packaging technology enables us to quickly adapt to our customers' requirements and deliver solutions with exceptional value. We've been recognized in the industry for a track record of excellence in receiving, packaging, storing, and distributing products and displays to retail and e-commerce destinations across the nation.

Real Estate Development and Facility Design

With decades of experience as an owner and developer of industrial real estate, we partner with our clients to optimize real estate development to maximize flexibility and future expansion opportunities. We help our clients achieve the most efficient and cost-effective distribution operations to accommodate their specific needs.

Ruan

666 Grand Avenue, Suite 3200 • Des Moines, IA 50309
866-782-6669 x1 • solutions@ruan.com • ruan.com



Ben McLean
CEO

Mission Statement:

Empower the best team in logistics to deliver exceptional experiences for our partners.

Facts About Ruan

- Founded in 1932
- More than 300 operations in North America
- 5,500 team members
- Freight under management \$1.5 billion
- Award winning Megasafer Safety Program
- Family-owned corporation

Ruan has expertise in transporting and warehousing goods in every industry—and the right people, processes, and technology to meet your supply chain needs.

Flexible Integrated Solutions

Ruan's Integrated Supply Chain Solutions offer it all, including Dedicated Contract Transportation, Managed Transportation, Value-Added Warehousing, and Brokerage Services. We combine the flexibility of our non-asset and asset-based capabilities with optimal technology and superior service focused on continuous improvement, cost savings, and supply chain efficiency. The Ruan team partners with customers to evaluate, optimize, and deliver a one-source, integrated supply chain solution. Ruan delivers these benefits and more because supply chain management is our core competency.

Dedicated Contract Transportation

Ruan's Dedicated Contract Transportation service provides complete door-to-door supply chain solutions without any of the hassles of owning and operating a private fleet. We assume all risk, handle labor, navigate regulations, and manage all of the equipment, taxes, and fuel.

Value-Added Warehousing

Innovative warehouse solutions are Ruan's specialty. Our Value-Added Warehousing services offer scalable and agile warehouse space tailored to our partners' requirements. We excel in warehouse management, engineered facility design, site selection, export consolidation, cross docking/postponement, subassembly, kitting, international crating, and more. Integration with Ruan's warehouse management system reduces touches, improves storage density, and increases overall flow efficiency.

COMPARING THIRD-PARTY LOGISTICS PROVIDERS IS LIKE COMPARING
APPLES TO STEEL.
SEE THE DIFFERENCE THAT RUAN INTEGRATED SOLUTIONS CAN MAKE TO YOUR BOTTOM LINE.
RUAN

Managed Transportation

Our Managed Transportation solution encompasses end to end optimization including capacity management, mode selection, freight planning and execution, inbound freight management, and freight invoice audit and payment. R2.O, Ruan's supply chain technology, is a best-of-breed transportation management system that builds efficient shipments and provides rich analytics to identify opportunities for continuous improvement and cost savings. Our expert team utilizes these resources to continuously optimize your network.

Brokerage Services

We provide capacity aggregation for transactional shipment management with annual or short-term contracted rates. Our reliable, experienced team of certified transportation brokers is an excellent support for dedicated or private fleets.

RUAN

S-2international LLC

395 McDonough Pkwy. • McDonough, GA 30253
678-432-9502 • sales@s-2international.com • s-2international.com



Jennifer Mead
Founder and CEO

Our customers want more than just price and service. They want a partner who understands their business. Our priority is to learn their business so we can develop customized solutions designed for customers' unique needs.

We expect the best from everyone on our team. To deliver the best, we think outside the box and are proactive in our approach to every shipment. We make the impossible possible simplifying shipping.

That is why customers love us. S-2. Service delivered with heart.

What do you call a company dedicated to customized transportation solutions? A company whose core values are authenticity, proactivity, integrity, and quality? A company that delivers on its promises and when there is a hiccup, they make it right? A company whose name defines what they do? Solution Source.

S-2, a single-source provider, is a recognized leader in quality, third-party transportation management. We excel in time and service sensitive shipping and provide customized solutions for a diverse customer base. With 17-years of servicing the forwarding and 3PL industry and handling over 100,000 expedited ground shipments annually, our client base has grown to include verticals like energy, paper and packaging, industrial, automotive, AOG, and more.

To support our customers' ever-changing needs, our service offerings have expanded. While our core business is **ground-expedited shipping** utilizing sprinter vans and straight trucks, we also offer:

- **Inland transport of international imports**—Including drayage, transload, linehaul as well as critical airport recoveries.
- **Truckload Management**—Leveraging our network to provide the right truck at the right time for the right price.
- **Managed LTL**—A customized solution that centralizes and simplifies your traditional LTL shipment booking, tracking, invoicing, and reporting needs in one portal. S-2 cares about delivering the best solution, so we have designed a rate agnostic platform to bring you the best of both worlds, leveraging technology to compare in real time S-2's competitive partner rates against your direct carrier rates. Then, you pick the



best option and we will still manage the shipment, saving you time and money, while enhancing visibility.

- **Specialized handling**—Including constant surveillance, pad-wrap, liftgate, inside delivery, timed deliveries, and other sensitive services.
- **Tradeshow transportation.**
- **Air charter, hand carry, and heavy weight air services.**
- **Carrier-based solutions**—In addition to third-party management.

As S-2 grows, one thing will never change. We remain a customer-driven company committed to delivering best-in-class service. Personalized attention means your shipments never get "lost in the shuffle." Every shipment is managed as a top priority.

We offer the perfect balance of price and quality. The result? We are a top choice for customers seeking comprehensive transportation solutions.

S-2 is recognized by Women in Trucking as a Top-Woman Owned Transportation Company and Top Company for Women to Work For. We are WBENC certified, a NASTC Best Broker, TEANA Elite, TIA Performance-Certified and Bonded, and a SmartWay Partner.

CEO Jennifer Mead was named a 2021 Top Woman to Watch in Transportation by WIT. We are members of Air Forwarders Association, GAMA, and NASSTRAC.



Saddle Creek Logistics Services

3010 Saddle Creek Road • Lakeland, FL 33801
888-878-1177 • sales@sclogistics.com • sclogistics.com



Mark Cabrera
CEO

Leverage our wide array of logistics capabilities for omnichannel supply chain solutions that provide speed, service, and scalability.



At Saddle Creek, we specialize in helping retailers, manufacturers and e-commerce companies get products where they need to be quickly, cost-effectively and seamlessly.

Range of Services

We offer omnichannel fulfillment, warehousing and value-added services such as packaging, kitting, embroidery and engraving. Our transportation capabilities include a private fleet, brokerage and parcel services. Clients can utilize our services à la carte or as part of an integrated logistics solution.

Sophisticated Solutions

We custom engineer every solution to meet the client's current business needs and scale for future growth. A data-driven approach, advanced operational methods and Lean methodologies ensure optimal performance.

Nationwide Network

Our distribution network now includes 55 locations across the country, totaling more than 31 million square feet of space

nationwide. We added over 5.5 million square feet of warehouse and distribution space in 2021 alone, including new facilities in Myerstown, Pa.; Walton, Ky.; and Ft. Worth, Texas. With two or more distribution centers, our clients can reach 94% of the country in two days or less using ground service—helping to reduce transit time and cost.

Advanced Technology

We continue to invest in robust technology to support our clients' needs. We have added state-of-the-art automation and robotics, including autonomous mobile robots and goods-to-person robots, to help increase productivity, reduce labor dependency and accommodate fluctuations in order volume.

Service Excellence

Saddle Creek has been delivering outstanding service for more than 55 years. We take great pride in our company culture, which is one of integrity, strong performance expectations, a high level of accountability and the commitment to doing what is right for our clients and their customers each and every day.



Scan Global Logistics

North American HQ: 18850 8th Ave S., Suite 100 • Seattle, WA 98148
800-444-0294 • sales.noram@scangl.com • scangl.com



Allan Melgaard
CEO

Mission Statement

We believe that our purpose can best be fulfilled by bringing a human approach to everyone everywhere.

We believe that every loss of efficiency is a waste of potential—for individuals, organizations, and societies at large. For us, every challenge is an opportunity to unlock potential and therefore, we go above and beyond to bring anything to anywhere—whether by road, rail, ocean, or air.



At Scan Global Logistics, we exist to make the world a little less complicated. We are a global logistics organization with employees and partners all over the world. Our global transportation network enables us to reach even the most remote corners of the world. We are there wherever you need us.

For over 35 years, we have been developing a flexible organization that is geared toward providing personal advice and tailor-made logistics solutions.

At the core of our DNA is a 'can-do-attitude' and the willingness to always walk the extra mile to find the right solution.

We support all processes in Supply Chain Management for businesses in every field. Whether you require transportation from A to B or a more complex logistics solution, our goal is to keep you, and your customers, one step ahead.

We are Scan Global Logistics and we will keep finding new ways to make the world a little less complicated.

Air Services

- IATA Licensed
- Scheduled Consolidations
- Priority/Express Air

- Hand Carry/Courier Services
- Charter Services
- Dangerous Goods
- Over-Sized Cargo
- Point-to-Point Worldwide

Ocean Services

- FCL / LCL Services
- Regional Consolidation Hubs
- Multiple Suppliers
- Distribution Pools
- Cost Savings
- Space Allocations
- Special Equipment (Grade A Containers & Reefers)
- Flexible Transit Times & Departures

Ground Transport

- FTL & LTL Services
- Standard & Express
- 3-5 Day Economy
- Intermodal / Multimodal
- Canada/Mexico TransBorder
- Specialty Equipment / Permits
- ScanTMS® LTL Rating & Booking System

SCAN GLOBAL
LOGISTICS

Schneider

3101 S. Packerland Drive • Green Bay, WI 54313
supplychain@schneider.com • schneider.com



Erin Van Zeeland
Senior Vice President/
General Manager,
Logistics Services



Michael Kukiela
Senior Vice President,
Supply Chain and
Distribution Management



Schneider is a premier provider of transportation and logistics services. Offering one of the broadest portfolios in the industry, Schneider's solutions include Supply Chain Management, Logistics Consulting, Distribution, Warehousing, Port Drayage, Regional and Long-Haul Truckload, Expedited, Dedicated, Bulk, Intermodal, and Brokerage. We help shippers navigate the increasingly complex market with integrated solutions, technology, and expertise that deliver value year after year.



The last two years have made delivering—your P&L and your physical goods—a challenge. Strategies that worked in the past aren't serving shippers as well in the current disruptive market cycle. Shippers are struggling with labor shortages, equipment shortages, supply chain talent (turnover), cost pressures, and an increased focus on driving efficiencies through technology.

A single provider that has the connections—people, process, technology, visibility, capacity—to optimize in real-time is the best way to solve these challenges for your business.

With decades of proven expertise in a wide variety of industries, Schneider provides the knowledge and methodologies to streamline your supply chain and keep it all running smoothly. A few ways we're helping shippers navigate disruptive cycles are:

Capacity Stacking

- Strategic shippers are redesigning their network strategy to include multimodal, dedicated, and density-driven solutions such as Market Index Pricing. We call that Capacity Stacking, and it's the perfect solution for bringing supply to your capacity strained network.

Port-to-Door Solutions

- Using one provider for your dray, transload, and inland transportation keeps freight moving from port to door and provides business intelligence that puts you in control.

Managed Logistics and TMS

- Whether you need a full control tower, or a TMS managed by your team, we meet you

where you're at. Schneider orchestrates the physical flow of goods, data/analytics to drive smarter decision making, and payments across your supply chain

Warehouse

- Scalable solutions from co-terminus to third party—experience the power of one provider with Schneider's warehousing and distribution capacity. We offer integrated teams, innovative best-in-class technology, and nationwide warehouse, cross-dock, and transload options.

Merger, Acquisition and Divestiture Strategy

- Companies undergoing M&A activities are on the hook to realize tangible synergies. Schneider develops the roadmap needed to achieve these savings, and provides consultative services to connect disparate systems/processes for centralized planning and execution. Ensure your new footprint is optimized for your business goals.

Managed Transportation

- When traditional approaches for securing capacity no longer work, Schneider's Managed Transportation Services give you capacity assurance, cost control, greater visibility, account management, and increased accountability—all with one point of contact.

With nearly \$4.6 billion in annual revenue, Schneider has been safely delivering superior customer experiences and investing in innovation for over 85 years. For more information visit schneider.com or @weareschneider on LinkedIn.

SEKO Logistics

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James Gagne
President and CEO

- Ecommerce Logistics
- Air Freight Forwarding
- Section 321/Type 86
- Ocean NVOCC Services
- Ground Transportation
- Home Delivery
- Heavyweight/Last Mile
- White Glove
- Cross-Border Ecommerce
- Cross-Border Returns
- Parcel Express Services
- Expedited Cargo
- AOG/NFO Services
- Aerospace Logistics
- Medical (MedTec) and High-Tech Logistics
- Healthcare Logistics
- Store Development
- Warehousing & Distribution
- Customs Brokerage
- Value-Added Solutions
- Supply Chain Software
- Mobile App
- TMS
- WMS
- Purchase Order Management
- Asset Management
- Inventory Management
- Demand Chain Management
- 60 USA Locations
- 120 Global Locations
- 40 Countries



**SMALL ENOUGH TO CARE,
BIG ENOUGH TO SCALE**

We provide a suite of logistics services which enable you to use your supply chain as a competitive differentiator. As a client-centric organization, we are powered by the expertise of our people and our in-house developed, best-in-class, configurable technology.

SEKO helps to simplify processes by providing the right service and cost options with multiple carriers, and by improving your ability to monitor and track sales and purchase order activity.

Our logistics solutions are lean and efficient, with the core aim of improving your customer satisfaction and keeping your business running at peak performance.

With over 120 offices in 40 countries worldwide, our unique management model enables you to benefit from Global implementation experience and expertise across all industry sectors, coupled with vital in-country knowledge and unparalleled service at the local level.

SEKO Logistics provides clients with:

- Fast, efficient decision-making
- Real-time support and parcel-level tracking via SEKO mobile apps
- Local expertise through people that really care
- Responsiveness and reliability
- Flexibility and consistency
- Hands-on service and support
- Personal relationships
- Creative, configurable solutions
- Individual vertical sector experience
- Minimal bureaucracy—easy to do business with



The Shippers Group

1015 W. Wintergreen Rd. • Hutchins, TX 75141
214-381-5050 • info@shipperswarehouse.com • theshippersgroup.com



Rob Doyle
President

Mission

Our mission is to provide the ultimate supply chain experience by **Understanding, Delivering and Improving** services that meet our customers' needs.



Since 1901, we've been in forward motion toward being an industry leader in third party logistics with a focus on our people, our processes and the technology we employ to provide industry leading supply chain support.

With 13 locations and 5.5 million square feet of distribution space, The Shippers Group is nationally recognized for the full range of logistics services we offer that includes Public and Contract Warehousing, Contract Packaging, E-Commerce Order Fulfillment, and Transportation Services.

We are BRC Superior with an AA rating and AIB Superior with 990 out of 1000. The Shippers Group is a Green Supply Chain Partner named by *Inbound Logistics* as a leading company that goes above and beyond to ensure global supply chains are sustainable and operations are socially and environmentally friendly.

World Class Supply Chain Support

Supply Chain performance drives our customers' bottom line and that's why The Shippers Group provides world-class supply chain support from receiving inbound products to shipping outbound orders, inventory management and contract packaging. We are focused on Continuous Improvement to keep pace with consistent shifts in consumer demand and applying Lean initiatives for improved productivity and accuracy. TSG is among *Inbound Logistics'* Top 100 3PL Providers for 2021.

At The Shippers Group, we rely on our heritage ingrained with the values of integrity, innovation, excellence and safety and our commitment to social responsibility to be our customers' most proficient supply chain partner.



Smart Resources

781 West 14600 South, Suite #1 • Bluffdale, UT 84065
833-888-0120 • sales@smartresources.com • smartresources.com

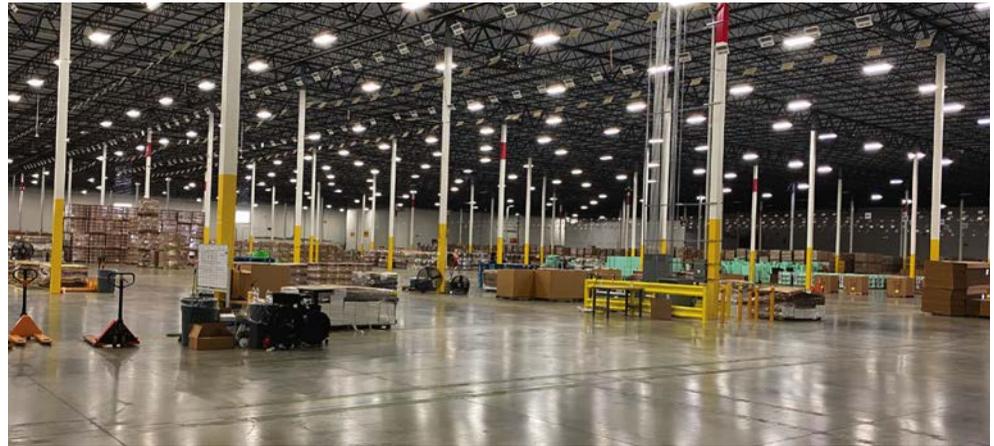


Kelly Blair
President

Our WHY at Smart:

To use business to promote individual's (employee's) personal progression and to build the necessary economic engine to fund that. We will keep fighting to make Smart Resources a human growth machine.

We are an employer of choice partnering with employers of choice. Profits drive purpose; we can have all the ideals in the world, but if our business is broken and our economic engine is not working then we will cease to exist and our ideals mean nothing.



Most companies have mission statements, long-term visions, company values, etc. I feel like for most of them, they are posters on the wall and little more.

For company values to be meaningful, they need to be lived. We strive to use our values to make key decisions and to keep them aligned with our company culture.

We are likely far from perfect at this, but I am committed to live our values and be held accountable to them. Some of the ways we value our values is by using them to evaluate employee performance, making hiring and firing decisions, making strategy decisions, deciding on how to deal with a tough customer issue, using values to evaluate promotions and raises.

An example of this might be for **trustworthy** the company would say "we invoice with 100% accuracy and 100% backups," for the department it might be "we never throw problems over the fence to other departments, we resolve things that land in our court and see them through to completion," and for the employee it could be "I respond to all emails and voicemails within 12 hours."

We have aspirational and operational values:

1. Trustworthy. We are worthy of trust. We are competent and reliable. We do what we say we'll do. We make and keep our commitments.

2. Progression. Personal, team, and organizational growth. Build an organization where team members don't have to outgrow us. We value mentoring and being mentored, learning, education, and open, honest feedback.

3. Hard Work. We pull beyond our own weight; we each strive to give more than we receive. We believe in being self-reliant and exceeding our duty. We are dependable.

4. Quality Relationships. We are happy, positive, optimistic people who support, energize, and inspire one another. Through teamwork and cooperation, we trust each other to "have our backs." We are respectful, kind, and fair with all.

5. Deliver Results. We deliver on our commitments to each other, to our stakeholders, to our clients, and to our employees.

Who We are and How We Operate

Smart Resources is a labor logistics platform that brings businesses and employees together at the right time with the right amount of work. Our company started as a 3PL or third-party logistics company, IntegraCore Supply Chain Management. It started small and grew fast. As with any company that has rapid growth, we had labor management issues that needed to be addressed in order to grow further. Like most companies in warehouse, manufacturing, or production, we reached out to what we thought was our best solution and that was to use temp agencies or staffing companies. We quickly realized how broken they were.

Our focus is on process improvement, using outsourced labor as a strategy to lower cost per unit. We are a very unique, very exclusive, and a non-traditional solution to your labor needs. I guarantee we have things you haven't seen before.



SMC³

653 Lexington Circle • Peachtree City, GA 30269
800-845-8090 • sales@smc3.com • smc3.com



Andrew Slusher
President and CEO

Mission Statement

SMC³ is the transportation industry standard for intelligent data, technology and education solutions disseminated through the integration of innovation, excellence, neutrality and community. Through its logistics intelligence solutions and educational events, SMC³ strives to consistently raise the level of knowledge, collaboration and technological capability in the freight transportation marketplace.

SMC³'s deeply-rooted core values of integrity, consistency, thought leadership and operational excellence support this mission and provide a foundation for a unique portfolio of industry solutions. The company's goal is to create a frictionless world for the transportation of goods by seamlessly connecting and empowering the industry.

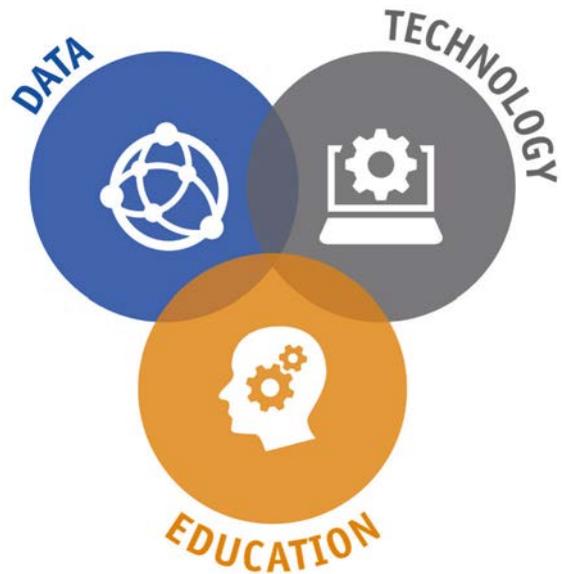
Over-the-Road Technology and Data

With its range of solutions that integrate seamlessly into current business systems, SMC³ supports customers' needs as they grow, whether they're dealing with 10 shipments or 10,000 shipments per day. Shippers and 3PLs use SMC³'s peerless rating solutions to optimize their transportation spend, saving time and money on their freight shipments throughout North America.

Throughout its history, SMC³ has built unrivaled cachet in the industry, establishing itself as a stable and trustworthy partner that is a neutral voice serving shippers, carriers and third-party logistics companies with equal attention. The company's position as a leader has been honed through decades of developing secure and reliable solutions. Even as the company grows, it remains committed to its founding principles, motivated not by profit but by introducing dependable products that fill an industry need. SMC³'s wide array of shipment lifecycle optimization technology includes:

- **CzarLite** – LTL base rates for the U.S., Canada and Mexico
- **BidSense** – Truckload and LTL freight transportation bidding and pricing negotiation
- **RateWare XL** – Multi-tariff pricing management
- **CarrierConnect XL** – Carrier points of service and transit times
- **SMC³ LTL APIs** – Real-time visibility and execution throughout the complete shipment lifecycle
- **BatchMark XL** – Rapid LTL freight rating and analysis
- **Cost Intelligence System** – Profitability management for truckload and LTL carriers

With these tools, SMC³ customers can remove manual processes from their supply chains, which can help their businesses rise above the rest by allowing them to re-deploy resources to revenue-generating activities.



Education

SMC³ extends its expertise through supply chain educational forums across North America. Attendees keep current on industry trends and best practices used by global supply chain leaders at Connections and Jump Start, SMC³'s two annual supply chain conferences. The strategic educational and networking events feature cutting-edge, forward-thinking sessions, top-tier presenters and unique networking opportunities. SMC³ works to create events that facilitate lasting collaboration between logistics and transportation professionals from carrier, shipper, 3PL and technology-provider verticals. In partnership with LogisticsTrainingCenter.com, SMC³ has also developed LTL online education, and the industry's only online LTL certification program. Through five online, self-paced on-demand courses and classroom-style lectures, SMC³ shares its lifetime of LTL expertise with logistics stakeholders and future supply chain leaders looking to take their careers to the next level. SMC³'s technology, data and educational solutions are backed by a lifetime of industry understanding and technical expertise.



Sunland Logistics Solutions

1312 Old Stage Road • Simpsonville, SC 29681 • 864-295-0081
Solutions@SunlandLS.com • SunlandLogisticsSolutions.com



Arch Thomason
CEO

Purpose:

Helping our customers do what they do, better!

Vision:

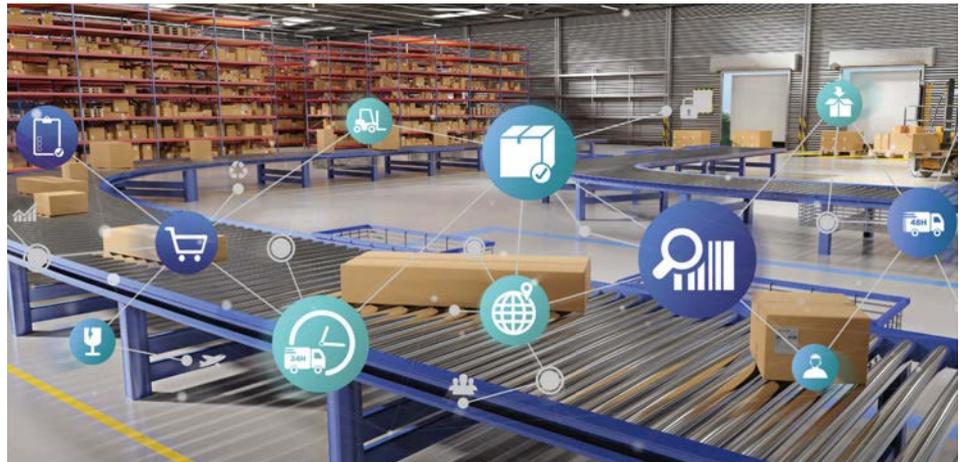
To become a great 3PL company where people want to work and customers want to buy.

“Sunland’s team has an excellent emphasis on continuous improvement & remains consistently focused on our needs. We have built a strong business partnership with Sunland.”

—Customer Testimonial

Company Values:

- Safety First
- Servant Leadership
- Learning Organization
- Results Matter



Sunland Logistics Solutions is a 3PL partner leveraging leading technologies and Lean principles to help shippers and manufacturers improve performance and drive value in their supply chains. With advanced distribution practices, inventory visibility, and a wide range of value-added services, Sunland specializes in supporting companies in the retail, automotive, industrial, and chemical industries. Sunland’s services include, but are not limited to:

- Inventory management
- eCommerce fulfillment
- Reverse logistics
- Supply chain visibility
- Warehousing & distribution
- ISO-9001 certified operations
- Foreign Trade Zone
- Chemical & hazmat storage
- Shuttle transportation
- Relationship management strategies
- Value-added services

High-Performance Team

Originally founded in 1982, Sunland has been experiencing significant growth and attracting some of the industry’s top talent. The team is focused on being a flexible partner who provides world class service with a winning continuous improvement culture. Building, growing, and aligning a diverse team of talent with a positive culture is essential to our customers’ success

Process Leadership

Sunland leverages Lean & Quality best practices to ensure we understand and meet our customers’ service expectations and drive waste out of our operations.

Whether we’re kitting, quality testing electronics, or sub-assembling automotive bumpers, process leadership is the foundation for Sunland’s team and our ability to earn customer trust.

Advanced Technology & Innovation

Sunland’s Solutions Lab is our in-house team of IT and engineering experts who are passionate about leveraging technology & data to accelerate performance & provide customers with powerful insight to help them make better, faster business decisions through:

- Efficient integration
- A stable + secure cloud-based infrastructure
- Quality control
- Inventory visibility
- Improved productivity

Quantified Value to Customers

Adding value to customers’ supply chains is our goal. Sunland’s Customer Success Teams collaborate with our customers to ensure we are supporting their organization’s strategic goals in addition to successfully executing to their daily tactical needs. What does quantified value look like?

- Increased: Safety, service levels, quality, compliance, visibility, cash flow, profit, capabilities, market share
- Decreased: Costs, risk, or inventory



Sunset Transportation

10877 Watson Road • St. Louis, MO 63127
314-756-8593 • Sales@SunsetTrans.com • SunsetTrans.com



Lindsey Graves
CEO

Customized Solutions:

- Logistics Management
- Cross-border Logistics & Warehousing (MX)
- Shipper Technology
- Freight Audit & Payment
- Domestic & International Brokerage
- Expedite

The Sunset Way:

- Accountable
- Flexible
- Loyal
- Responsive
- Relationships

Industry Verticals:

- Automotive
- Construction
- Consumer Goods
- Food/Beverage
- Manufacturing
- Packaging
- Pet Food/Ingredients

A four-time Inbound Logistics Top 10 3PL Provider, Sunset is proud to deliver on our five customer promises through holistic 3PL solutions, our proprietary domestic and international LOGIK shipper dashboard and a strong focus on transparent, flexible service.

Is it time to TRULY manage your supply chain?

Sunset customers can get back to mission-critical business knowing their supply chain is being analyzed, monitored and improved month over month. We are accountable for providing ongoing savings and efficiencies through:

- Bid management and carrier procurement
- Route optimization and load planning
- TMS integration and visibility
- Freight bill audit and payment
- KPI compliance and reporting specific to your business needs

Why Sunset?

As a second-generation, woman-owned family business, Sunset places a high value on reliable, flexible customer service; putting our customers first as we have for the past 32 years! Let us help you navigate the challenges of strategic supply chain management. Join the Sunset community and see the difference.



Need more visibility in your logistics program?

Sunset works to bridge visibility gaps with LOGIK, our proprietary shipper dashboard:

- Future, in-transit, and past shipment status via interactive maps for both domestic and international shipments
- Carrier selection, safety and compliance
- Shipment metrics by spend, dates, volume, and mode
- Analytics to monitor shipment location details, accessorial costs, lane volume, commodity information, on-time performance, and user-specific KPI reporting



Syfan Logistics

2037 Old Candler Road • Gainesville, GA 30507
855.287.8485 • Local: 770.287.8485 • Steve.Syfan@SyfanCorp.com • SyfanCorp.com



Steve Syfan
Executive Vice President

Who We Are

Syfan Transport is a Southeast-based carrier fleet featuring 24-7 dispatch, on-board GPS and ELD-compliant systems on every truck, and transparent reporting on all shipments. Together with its 3PL arm, Syfan Logistics, the company meets a diverse array of shipping needs throughout the continental United States, Mexico and Canada.

Vision Statement

We seek to be a guiding light of ethics, integrity and Christian faith in our service to the transportation industry.



Shipping & Logistics A Partnership of Trust and Transparency

Syfan Logistics and asset-based Syfan Transport have always focused on delivering the highest level of transparency and reliability for customer shipments—drama-free with no surprises.

This partnership of trust and loyalty has never been more important than today due to tight capacity of drivers and equipment. We stand by our shippers, work out challenges, and refuse to ever let them down.

Syfan honors these commitments because it's the right thing to do. During the COVID-19 pandemic, Syfan Logistics has been an essential provider trusted by the Centers for Disease Control & Prevention to ship medical supplies across the country, as well as hauling for food shippers, parcel delivery companies and other critical industries.

Continued Growth

Syfan began a new expansion project in late 2021 that will add 15,600 square feet, and room for 150 additional team members. Syfan currently has 370 team members at its main office on a 65-acre campus. It will be completed in the third quarter of this year. This project is vital to our growth plan.

Primary Insurance

Syfan also goes the extra mile by backing every load with primary cargo insurance—a commitment practiced by only a small percentage of the industry.

Syfan Services

Transport

Numerous Syfan Transport fleet trucks and equipment options are available around the clock. And all support is personally handled by the company's own 24-7 dispatch team (as opposed to a third-party answering service).

Expedited

Syfan's long history with JIT shipping for automotive manufacturers and small parcel air loads has forged a unique sensitivity to deadline-oriented shipping.



Executive team: Steve, Jim and Greg Syfan

Third-Party Logistics

For shippers faced with a sudden spike in shipping volume or the occasional spot load, Syfan Logistics fills emergency gaps.

Syfan Power Only

With much greater shipper demand for drop-and-hook shipments, Syfan's Power-Only single drivers and teams excel in easing sudden spikes in your shipping volume or filling in for your company fleet.

Yard Management Support

For warehouse and storage operations, our independent sister company—Turbo Sales & Leasing—provides leasing of new and used terminal tractors; sales of used terminal tractors; and leasing of truck trailers. Turbo leases all brands of terminal tractors for large fleets based at warehouses, distribution centers and ports across the country.

Freight Management Services

Syfan Logistics also can manage a company's entire shipping program, providing significant cost savings.

Project Management

Whether relocating a frozen food shipment from a damaged warehouse or moving large equipment, no job is too big or too small.

Customer Industries

- Food and Beverage
- Parcel shipping
- Automotive
- Manufacturing
- Healthcare
- Construction materials
- Retail/Consumer products
- Electronics
- Paper products

Symbia Logistics

27 Main St. Unit C-303B • Edwards, CO 81632
855-467-9624 • hello@symbia.com • symbia.com



Megan Smith
CEO

MISSION

Symbia Logistics' mission is to deliver exceptional, personalized service by being swift, experienced problem solvers. We value our customers and our employees above all else, and we will develop custom solutions with a can-do attitude.

VISION

Our vision is to lead the "Supply Change" movement by growing our network and developing new 3PL solutions for North American manufacturers who value collaborative partnerships and top-tier service.



From digital storefront integration and order fulfillment, to warehousing and industrial kitting, Symbia is the Supply Change partner you've been seeking. Gone are the days of old when "good enough" was good enough. With Symbia, excellence is the only answer, we don't cut corners and won't complicate things.

Our customers enjoy saving time and money, so they can focus on what really matters: productivity and efficiency.

Join forces with Symbia Logistics and gain a powerful, WBE Certified team with warehouses across the country.

Why Does Symbia Do What They Do?

- We believe in taking action and finding solutions.
- We believe in breaking free from stereotypes and exceeding expectations.
- We believe that productivity and efficiency are a result of focusing on our strengths.

How Is Symbia Unique?

Symbia brings logistics back to the basics with a can-do attitude and a veteran team who addresses challenges head-on. Grit and tenacity are balanced by profound technical capabilities. Symbia's implementation team has connected all types of systems to their

flexible WMS, from shopping carts to full-scale ERP software.

What Does Symbia Do?

We provide multichannel and dedicated logistics services, including e-fulfillment, FBA prep, B2B/B2C fulfillment, kitting, and warehousing, from our facilities across North America.

Putting Our Clients' Needs First

As a privately held family business with decades of experience, the Symbia Logistics team has provided facility-based supply chain support to a variety of industries including apparel, CBD, consumer packaged goods, cosmetics, nutraceuticals, food and beverage, sporting goods, and pet supplies.

The Symbia Executive Team has been developing customized solutions and processes for logistics clients since 1989. We consistently exceed customer expectations and value long-term partnerships.



Taylorred Services

800 Federal Blvd. • Carteret, NJ 07008 • 732-750-9000
sales@tpservices.com • taylorredservices.com



Jim DeVeau
President & CEO

Our Leadership:

Our leadership brings experience that elevates the Taylorred community with 80+ years of combined proficiencies from c-suite executives, logistics specialists, and industry leading professionals.

Mission Statement:

Our mission is to maintain the highest level of performance while preserving a growth-first mindset, and to build long-lasting partnerships through our strong customer focused ideology.



Contact:
Margaritta Topielski
CAO
mtopielski@
tpservices.com

Locations:

California
New Jersey
Kentucky
Georgia
Florida

4.4m Ft Warehouse
Footprint



Taylorred remains positioned as an industry leading, award-winning multichannel 3PL provider with more than 30 years in operation. We have expanded nationally from coast to coast while providing gateway-focused service locations catering to international markets and inbound logistics. Our customized solutions through advanced technology and automation satisfy the unique supply challenges of our long-term customers.

We're strategically located on both the east and west coasts, creating an efficient supply chain spanning the U.S. Our extensive network of facilities allows for flexible scaling and strategic positioning for our customers' supply chain needs, providing optimal transportation savings opportunities

Our reach spans nationally with specialty, boutique, and e-commerce fulfillment clients alongside our mass merchant and big box retailers. Taylorred's facilities use two leading warehouse management systems which provide technologies for accurate multichannel fulfillment and distribution.

Multichannel Distribution

Our distribution solutions range from customized facility buildouts to a shared services model where your product moves through Taylorred's top tier systems. With RF scanning, the product is directed to an optimal location upon receipt to ensure fewer touch points and a more economical business model.

- Internet Based Event Tracking
- Multiple SKU & Inventory Attributes
- Bar Code Labeling & Generation
- E-commerce Fulfillment
- Pick & Pack

- Product Substitution
- Physical Inventories & Cycle Counts
- Multiple Pack Configuration for SKUs
- Task Based WMS

Transportation Services

We take pride in our asset and non-asset based transportation solutions. Having extensive knowledge and experience in national transportation, dedicated trucking, drayage, brokerage, and intermodal allows us to develop the finest-in-class solutions. We are each highly skilled in transportation management, allowing us to provide a single point of contact and a guaranteed successful outcome.

- Transloading
- Drayage
- Trailer Storage
- Cross Docking

Innovative Solutions

We understand that adapting our consumer needs in a fast-paced environment is a key to our success. We're committed to providing businesses with innovative supply chain solutions to enhance their customer experience.

- Robotics
- Business Analytics
- Integrations & Technology
- Customer Care
- E-commerce Integrations

Value-Added Services

- Product Auditing & Quality Control
- Product Repackaging
- Gift Wrapping Options
- Ticketing & Tagging
- Bagging & Sealing
- Material & Procurement

TForce Logistics

14881 Quorum Drive, Suite 700 • Dallas, TX 75254
855-396-2639 • ty.locke@tforce.com • www.tforcelogistics.com



Kal Atwal

TFI EVP Final Mile

Mission & Vision Statement:

Our mission is to deliver strategic advantage and value to customer supply chains as an innovative logistics partner through flexible, integrated final mile services. We lead final mile with diversity in work, people, customers, and solutions in the spirit of growing and winning together.

TForce Logistics, a wholly owned operating company of TFI International Inc., is the leading same-day final mile transportation solutions provider in North America, successfully delivering over 100 million shipments per year. Strategic advantage and value are delivered through the uniquely flexible and integrated supply chain partnership, matching customer network needs.

An integrated network deploys more than 70 operating facilities, expert resources, leading technologies, and a fleet of more than 6,700 final mile delivery partners and equipment. TForce Logistics' network is purpose-designed for the demands of final mile, business to business, and e-commerce-generated shipping with coverage across all the major metropolitan communities in the U.S. and Canada.

E-Commerce

Our branch locations are strategically placed across metropolitan areas in North America and Canada, resulting in an industry-leading and accessible distribution network for your deliveries. With our advanced logistics tools, we can help

identify the most cost-effective solution for your needs to virtually eliminate the barriers for any business seeking a same-day or next-day delivery option.

B2B

As the costs of compliance, management, and maintenance for private fleets continue to increase, take advantage of our flexible capacity and enter new markets by getting closer to your customers without the additional overhead. Additionally, optimize your B2B delivery solutions and find cost effective routes with our proprietary software. We analyze your data and develop a plan of action to achieve the best same-day delivery experience for your customers.

Reimagine your deliveries with TForce Logistics. For more information, visit tforcelogistics.com and follow us on LinkedIn, Facebook, and Twitter.

- www.linkedin.com/company/tforcelogistics/
- www.facebook.com/TeamTForce/
- www.twitter.com/teamtforce



Tive

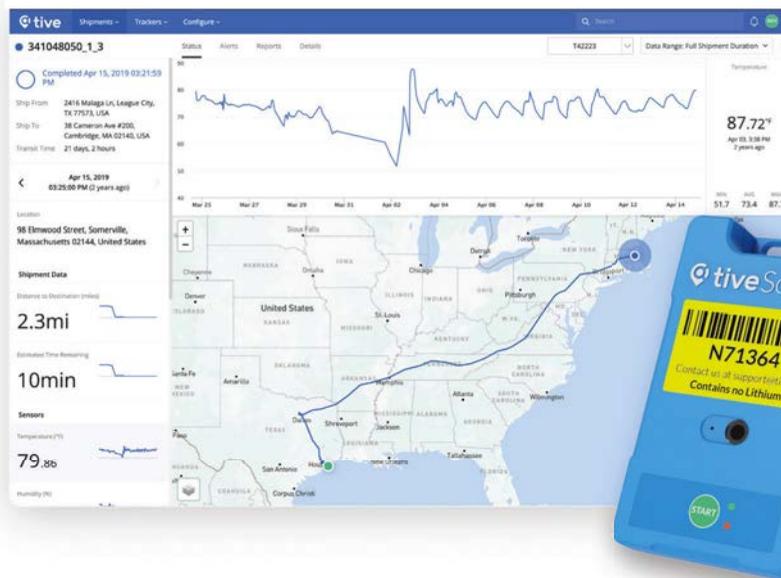
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617-631-8483 • sales@tive.com • tive.com



Krenar Komoni
CEO & Founder

Mission Statement

Tive's mission is to pioneer beyond what we thought possible, so what others hold near and dear arrives on time and in full. We imagine a world fully transparent, where everything and everyone is connected.



Tive, a leading provider of real-time supply chain visibility and insights, ensures shipments arrive on time and in full through a combination of hardware, software, and 24/7 support. Tive's integrated solution enables the true end-to-end visibility that companies need to actively manage their shipments, prevent costly delays and damage, and improve their customers' experience.

Tive's multi-sensor trackers (which can be single- or multi-use) create real-time data on:

- Location: hyper-accurate (within feet) using WiFi, GPS, and cellular triangulation
- Shipment condition: Temperature, humidity
- Security: Light sensor (package or container opened, when, where)
- Integrity: Shock and orientation (package dropped, loaded incorrectly or other event)

Tive's trackers have an industry-leading battery life, providing data for up to 90 days depending on report frequency. Tive also produced the world's first non-lithium tracker, which is approved for use on over 100 air carriers.

Tive trackers feed data into an intuitive, cloud-based software application; users can set custom alerts (via email and/or SMS) and reporting for when a shipment:

- Arrives/departs, based on user-defined geofences
- Deviates from the required temperature or humidity range
- Deviates from expected route
- Becomes separated from other items in the load
- Is dropped (experiences a shock event)
- Is opened
- + more

The Tive solution is easy to implement and can be used on its own, or integrated seamlessly with supply chain visibility platforms, ERP solutions, TMS, and more, via API and webhook capabilities.

Finally, Tive's 24/7 shipment monitoring service ensures all live shipments have dedicated support at all times. Tive's team acts as an extension of users' own shipping and logistics teams, monitoring live shipments and collaborating with carriers to resolve in-transit issues and prevent delays and damage.



Tradition Transportation Group INC

300 Growth Parkway • Angola, IN 46703
260-209-0700 • traditiontrans.com



Tim Evans
President & CEO

Tradition Transportation's Mission is to guide customers through every step of the supply chain with dedication, trust, and tradition.



Maximize the efficiency of your business by utilizing Tradition Transportation's long-haul, regional, or local dedicated service. Allow us to handle DOT regulations, the rising cost of equipment, insurance, labor, and maintenance while you remain focused on the core of your business. Tradition Transportation has a vast array of tailored service options that include on-site operations assistance, customized technology and reporting, and administrative support ensuring that your business has a reliable transportation network, and your product reaches its destination.

Tradition Logistics is a premiere fulfillment and warehousing company that utilizes state of the art technology and proven processes to provide the best service to our customers. Our team can customize services to best fit your needs and with four locations and nearly 1 million

sq. ft. of space, we have the capacity to assist an operation of any size.

Freedom Freight Solutions is an asset-based freight management firm founded with the belief that there is a better, more efficient way to move freight.

Our goal is to provide top-tier service to our customers and our carriers by being transparent with our rates, creative with our solutions, and providing stellar customer service.

TRADITION
TRANSPORTATION GROUP INC.

Trailer Bridge, Inc.

10405 New Berlin Road • Jacksonville, FL 32226
844-TBSHIPS • info@trailerbridge.com • trailerbridge.com



Mitch Luciano
CEO

Our Approach

Delivering a personalized full-service supply chain solution is what we do. Putting people first every step of the way is how we do it. All because it's our business to help you grow your business through logistics.

Your Partner.

- 14 locations worldwide
- 260+ logistics experts
- Asset-based provider with 3,100+ containers & 2,400 chassis
- 38,000+ carrier partners
- Strategic partnerships with J.B. Hunt & Anderson Trucking Services (ATS)



Trailer Bridge is a full-service logistics and transportation company full of smart, driven people invested in making a big impact on those around them. We help families around the world by delivering the goods they need in their everyday lives—to thrive, heal, grow, innovate, and create.

We use data, experience, and know-how to make decisions that result in powerful outcomes for our customers. For more than 30 years we have been a trusted reliable source for asset-based logistics services, ocean shipping, NVOCC, and warehousing services throughout North America, Puerto Rico, Dominican Republic, and the Virgin Islands.

We make life easy for our customers with one point of contact to handle all their supply chain needs from rate quotes and documentation to booking, tracking, and final mile. We do what we say we're going to do, when we say we'll do it.

Now Offering a Full-Service Supply Chain Solution:

- Domestic Trucking
- Drayage
- Intermodal
- NVOCC
- Ocean Shipping
- Government Services

Tap into our national network of carriers for access to all equipment types to move your freight. We connect shippers to the right capacity at the right time using the power of our people + technology. Partnering with Mastery, a leading transportation management system, allows us to manage any shipment anywhere in the world from a single platform.

We Make It Happen.



TransportGistics

28 N. Country Rd, Suite 103 • Mt. Sinai, NY 11766
631-567-4100 • Fax: 631-563-2497 • sales@transportgistics.com • transportgistics.com

TransportGistics puts you in control with global products and services that provide market leading, simple, incremental solutions for transportation management and logistics functions within your supply chain.

Our cloud-based solutions enable you to:

- Reduce costs
- Improve processes
- Identify hidden costs of transportation
- Improve vendor compliance routing guide
- Improve Supplier Relationship Management (SRM)
- Monitor vendor performance
- Improve shipment visibility
- Generate automatic, status-driven alerts
- Monitor carrier performance with respect to time in transit, service failure, and billing
- Enable collaboration
- Source, procure and execute transportation services

Transportation Management and Logistics Solutions

TransportGistics is a global, multi-product and services company that provides market leading, simple, incremental solutions for transportation and logistics management.

Our rich history in micro logistics solutions and macro logistics strategies is the fuel that drives our “simpler is better” model.

Our innovative, incremental strategy to assist and enable our customers to achieve cost-effective independence from legacy practices has been highly successful, resulting in double-digit cost savings, cost avoidance and rapid ROI.

Solutions should not be more complicated than the problems they are trying to solve!

Simpler is better, and that is the approach that we have taken with our cloud-based products and services. These easy-to-implement, easy-to-use solutions allow users to reduce costs and improve operations while managing discrete transportation and logistics management functions. Each solution can be deployed separately or in an integrated environment to meet requirements to improve business processes, reduce costs and enhance service offerings.

- **BLGen:** Create and communicate transportation forms, including packing slips, carton labels, LTL and TL Bills of Lading.
- **FreightTracing:** Provides complete shipment visibility, including alerts.
- **InsourceAudit:** A freight bill management, shipment information, cost-control portal that enables users to manage and control pricing and performance, freight invoices, payment and information.
- **ProductReturns:** Enables users to automatically generate return authorizations, route shipments via least-cost carriers, generate bar-coded Bills of Lading, and facilitates the receiving and accounts payable/receivable processes.
- **RoutingGuides:** Enables streamlined and simplified production, maintenance, distribution, and compliance by eliminating the need to print, distribute

Simpler-is-better
transportation
management and
logistics solutions.

and track receipt of new or updated Routing Guides.

- **TGIBid:** TGIBid is a cloud-based shipment auction portal that allows your users to submit your shipments to your carrier partners and then award the carrier with the shipment that meets your criteria (price, transit time, etc).
- **TGIRater:** Cloud-based solution programmed with your negotiated carrier agreements. Community management allows for hierarchical access with easy management and usability. Company data can be pre-populated for ease of entry and improved data quality. Time in transit and least-cost carrier calculations are performed across your entire carrier base.

TransportGistics products address the inefficiencies in transportation management, reduce freight expense, simplify the functions to be executed, make transportation information immediately visible to all parties involved in the transaction process, improve communications, and increase productivity.

If you are interested in simplifying your complex logistics challenges, call us today at **631-567-4100**, or visit us on the web at **www.transportgistics.com**



TransportGistics

Trinity Logistics

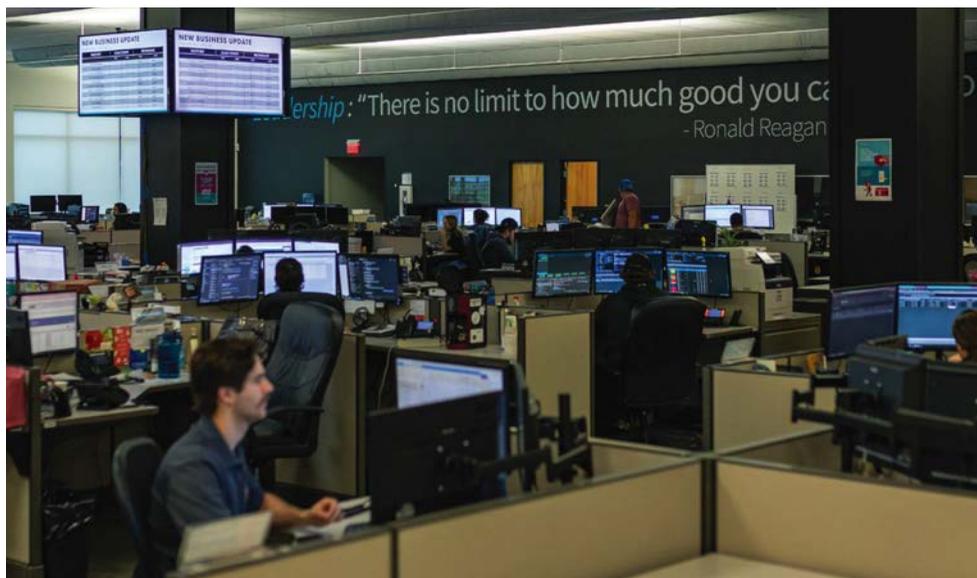
50 Fallon Ave. • Seaford, DE 19973 • 800-846-3400
requestaquote@trinitylogistics.com • trinitylogistics.com



Sarah Ruffcorn
President

Mission Statement

Trinity Logistics delivers creative logistics solutions through a mix of human ingenuity and innovative technology, enriching the lives of those we serve.



Trinity Logistics, a Burris Logistics Company, is a top 3PL providing People-centric freight solutions®. Our commitment to being different on purpose, whether it be through innovative supply chain solutions or outstanding customer service, is what separates us from the competition. Trinity has specialized in arranging transportation for truckload, less-than-truckload, intermodal, expedited, international, as well as fully managed freight solutions for over 40 years. Our combined expertise with Burris Logistics means we are poised to offer end-to-end cold chain solutions from production to delivery.

Trinity services the food and beverage, construction and manufacturing, and chemical industries through offices in Delaware, Missouri, Minnesota, Florida, Texas, and Iowa. Trinity also has more than 100 Authorized Freight Agent Offices servicing North America.

Our in-house team of developers helps us provide best-in-class service through technology tools, including a customer portal, capacity tools, a proprietary TMS, and digital freight matching.

Cold Chain Food and Beverage

Trinity Logistics works with thousands of shippers in the food and beverage industry, making us well-versed in cold chain requirements and regulations. Trinity's parent company, Burris Logistics, is one of the top cold storage providers in North America. Equipped with state of the industry

technology, working with Trinity means you can feel at ease knowing your product is well taken care of during transport.

Construction and Manufacturing

Trinity Logistics has a large network of specialized carriers that are able to execute a wide range of flatbed, Over-Dimensional, and project shipments. Our team has extensive knowledge of the rules and requirements of Heavy Haul freight and will work with you every step of the way.

Chemical

Trinity has been a Responsible Care® Partner since 2009. Through Trinity's stringent carrier vetting process, chemical and hazmat shippers can reduce risk by knowing the carrier handling their freight is experienced, certified, and aware of current regulations. Trinity serves some of the top automotive, agricultural, industrial, and specialty chemical manufacturers.

Do you ship products outside of these industries? No problem, we can help.

For more information about Trinity's freight services and how we can help your business, visit trinitylogistics.com.



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Tucker Company Worldwide

856-317-9600 • info@tuckerco.com
www.tuckerco.com



Jeff Tucker
CEO



Jim Tucker
President and COO



Tucker Company Worldwide Affiliations

- TIA
- NITL
- TAPA
- SC&RA
- NDTA
- NCBFAA
- QualifiedCarriers.com
- ISNetworld

Services We Offer:

Truckload

- Dry Van
- Temperature Control

Flatbed & Specialized

Project Management

- Product launches
- Managed LTL programs
- Inbound and outbound
- Freight management

We are Tucker Company Worldwide—the oldest privately-held freight brokerage in North America. For over 60 years, we have been providing industry-leading logistics services and award-winning support to our customers.

We take great pride in moving high-touch, high-security freight in industries where reputation and track record are paramount.

We arrange just about anything, but difficulty is our specialty. So, whether your shipment is oversized, delicate, high-value, or hazardous, we're prepared to manage it with the utmost care—using carefully designed procedures to get the job done right.

Our Service Sets us Apart

The Tucker difference starts with our customer onboarding. We are accustomed to the rigorous operational and safety compliance standards required in the industries we serve, and tailor our services to you—providing unique modifications to our TMS that reflect your specific quality, security, and escalation needs.

We Only Work With the Best Carriers

We (literally) wrote the book on carrier selection, and collaborate with the best minds in safety, security, and risk management at USDOT and within the industry to ensure we're providing services and carriers who protect your cargo and brand.

We're Leading the Digital Tracking Revolution

We pair our tried-and-true tracking and tracing techniques with cutting-edge digital, GPS-based technology to offer near-time location data, better predictive arrival times, and deeper transportation insights. It's no wonder we're on-time more than 98% of the time!

From small and medium-sized businesses to large Fortune 500 companies—our customers choose Tucker because we're freight experts. Learn more about the Tucker difference at tuckerco.com.



Turbo Sales & Leasing

P.O. Box 981 • Gainesville, GA 30503

Toll-Free: 844-468-8726 • Chris.Smith@turboterminaltractors.com • Turboterminaltractors.com



Chris Smith

*General Manager and
VP of Dealer Operations*

Who We Are

Based near Atlanta, Turbo Sales & Leasing is one of the nation's largest sales and leasing centers for terminal tractors—the hard-nosed workhorses of the warehouse and shipping industry. The company's customized leasing programs are designed to keep your fleet operations running full-time with no downtime. Founded in 2006, the company also leases a wide assortment of truck trailers.

Vision Statement

Turbo Sales & Leasing is dedicated to maintaining maximum "uptime" performance of the terminal tractors leased to customers in the time-sensitive warehouse and storage industry.



Our National Sales Team. Turbo Sales Team members (left to right) are Taylor Whitley, Ed Cross, George Bell, Chris Smith, Shane Ritter, and Robbin Dorminey. Turbo manages hundreds of leased terminal tractors at storage facilities across the country.

Terminal Tractor Leasing

Turbo leases one of the nation's largest inventories of new and used terminal tractors—including top brands like TICO, Ottawa, and Capacity—for large fleets based at warehouses, distribution centers, and ports. The No. 1 priority behind Turbo's leasing program is to maintain minimal downtime and maximum uptime for the 24/7 operations of its customers.

Terminal tractor leasing programs are customized to each customer's specific needs and budget requirements. Because Turbo understands that one size (or lease) does not fit all.

New Every 2 Leasing Plan

Turbo was a pioneer when it began its most popular lease plan—the exclusive **New Every 2** program in 2016. Turbo was the first company in the industry to allow customers to replace their leased terminal tractors every two years with a new one. This program offers many cost-efficient and budget-friendly advantages:

- Alleviate headache of annual procurement process
- Reduce maintenance costs
- Stay abreast of technology upgrades
- Improve driver satisfaction
- Uptime always—no downtime ever

In addition to leasing new vehicles, Turbo provides rentals of pre-owned terminal tractors for short and long-term rental arrangements. Turbo currently manages over 400 leased terminal tractors at warehouses and distribution centers operated by its customers across the country.



Maintenance

Turbo supports its leasing customers with full maintenance and repair—from individual terminal tractors to entire spotter truck fleets.

Turbo recently launched its GO-TURBO app. This technology tool will help the company stay on top of repair issues with its leased fleets by allowing customers to communicate more efficiently with the Turbo team—at any time or day.

Most importantly, it supports the company's focus and mantra "sell uptime, no downtime" for its customers in the time-sensitive warehouse and distribution industry. Also, under the Turbo fleet monitoring program, leased terminal tractors are equipped with Geo Tabs that allow Turbo to remotely monitor the operational performance of rental fleets—24/7.

Largest Parts Inventory

Turbo Sales & Leasing houses one of the nation's largest inventories of parts for all brands of terminal tractors. This allows us to efficiently service hundreds of tractors for our leased fleets and other customers.

Trailers

Turbo rents a wide assortment of quality reefers, dry vans, and flat beds. Short and long-term rental arrangements are available. Turbo has approximately 300 trailers in its inventory.



U.S. Bank Transportation Payment Solutions

usbank.com/transportation-solutions • 866-274-5898
CPSTransportation@usbank.com



Jeff Pape
General Manager,
Head of Transportation



We go the distance

No matter what role you play in managing a successful supply chain, or a large fleet, you count on reliable partners and visibility into critical data to make informed decisions. Depend on the strength and experience of U.S. Bank to provide the payment integrity, efficiency and security only a bank can provide.

U.S. Bank Freight Payment

Get the reliability and visibility you need to make your supply chain a strategic advantage. U.S. Bank Freight Payment is a comprehensive solution designed to streamline freight invoice audit and payment processes at every mile through:

- **100% pre-payment audit** to uncover savings
- **Enhancing working capital** while providing carriers timely, predictable payment
- **Collaborative, web-based tools** to reduce errors and resolve exceptions quickly
- **Freight analytics tools and services** that turn raw data into smart decisions

U.S. Bank Voyager® Fleet Program

Managing fleet expenses and payments can be a major challenge—especially if you don't have the right solutions. The Voyager Fleet Program enhances driver efficiency and reduces costs while supporting data integrity and preventing fraud and misuse.

We offer:

- **Convenience:** Accepted on both the Voyager and Mastercard networks, including remote locations, Canada and Mexico
- **Control:** Manage purchase behavior to avoid surprises, and let data drive your fleet's success
- **Cost savings:** Gain meaningful business intelligence to optimize processes and savings
- **Customer service:** Available 24 hours a day, whether you're in the office or on the road



UCBOS Inc.

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Shan Muthuvelu
President & CEO



UCBOS, Inc. is a USA-based business composable technology firm with the mission to augment the supply chain through semantics. Its vision is to enable Data Agility and Interoperability for enterprises through Semantic Augmentation to promote Supply Chain Resiliency.

UCBOS is 100% semantics, 100% metadata, 100% supply chain, 100% composable, 100% No-Code and 100% NoSQL.

The UCBOS extension delivers supply chain clarity, customer promise reliability, and business agility.

- **What is UCBOS?** It is an agile and adaptive extension to unlock business outcomes 10X faster and smarter.
- **How?** It augments your existing ERP and supply chain systems using metadata and semantic capabilities.

A Supply Chain Ecosystem typically possesses installations of various ERPs, multiple modules of packaged SCM software, legacy systems, warehouse automation systems, and 100+ customizations.

- Vendors like **Oracle, SAP, IBM, Manhattan, Blue Yonder, Korber, Infor, Mercury Gate, Coupa, Epicor, Jaggaer and more.**

Supply Chains systems/modules don't work together and cannot solve problems that are not specific to that module. Each is, by design, tailored to receive predetermined outcomes. The modules cannot understand the external signals, and market variabilities are unknown and therefore cannot enforce a common meaning, policy or procedure across the supply chain.

A UCBOS enabled enterprise composes and solves business problem chains across the supply chain using semantics and a dynamic unified logical data model. It produces business outcomes connecting customers, partners, market signals, systems, facilities, IoT, environmental signals, and machines.

Imagine unlocking new outcomes today, 10X Faster by extending your existing supply chain.

Customer Promise Reliability

- Sourcing Changes to Keep Customer Promises
- Fulfillment Changes to Keep Customer Promises
- "Make" Changes to Keep Customer Promises
- Customer Pick Up Changes to Keep Customer Promises
- First-Mile Changes to Keep Promises
- Redefining Service through IoT

Business Agility

- Supply Chain Mapping of the Enterprise, Partners and their Partners
- Handoff Tracking
- Environment Signals Impact on Inventory
- Spoilage Dynamic Re-Allocation and Rerouting
- Heat Exposure Product Impact Rerouting
- Lineage Tracking for Source of Labor
- Inventory Accuracy Real-Time Checks

Supply Chain Clarity

- Business Mergers & Multi-ERP/SCM Ecosystem Orchestration
- Logistics Collaboration with Businesses Serving the Same Customer
- New Lines of Business during Disruptions
- Market Signal Impact on Procurement Decisions
- Dynamic Appointment Automation
- Dynamic Dock Scheduling
- Rerouting in First-Mile through Dynamic Allocations



UniGroup Logistics

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Scott Kluesner
*Executive Vice President
of Operations*

Mission Statement

To be the logistics partner customers rely on for their most complex supply chain challenges



Expertise in High-Touch, End-to-End Supply Chain Solutions

As part of UniGroup—whose brands include Mayflower and United Van Lines—UniGroup Logistics is uniquely capable of leveraging an extensive network of company-owned assets to meet the needs of every customer.

Project Management

UniGroup provides highly innovative, single-source supply chain management solutions and services for transportation, warehousing, freight forwarding and project management—all tailored to fit the specific scope of the project.

Through data-driven analysis and network design services, our supply chain engineers will help facilitate continuous supply chain efficiency and cost savings throughout your supply network. Additionally, our reverse logistics specialists can analyze your supply chain and design reverse logistics solutions that help you efficiently recycle raw goods and industrial salvage.

Domestic Transportation and Shipping Solutions

By leveraging our nationwide network and driver-owned assets, we can provide shipping anywhere in the U.S. This includes regional and long-haul transportation as

well as arranging all local and intrastate transport needs. We offer Full Truckload (FTL), Less-Than-Truckload (LTL), Intermodal and Specialty Freight shipping options.

International Transportation

UniGroup's custom international freight solutions are designed around your specific business requirements while providing the quality of service you expect—and deserve—from a transportation leader. Count on our air and ocean freight forwarding specialists to arrange a mode of transport that best fits your international shipping needs.

Customs Brokerage Services

Our experienced team of federally- and nationally-permitted customs brokers can help streamline your global trade, helping to ensure your shipments arrive on time, in good condition and within regulation. From Importer Security Filings to customized trade solutions, we can help expedite your shipments, and keep your supply chain moving forward.



Vecna Robotics

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Craig Malloy
CEO

Vecna Robotics is an intelligent material-handling technology company engineered to keep goods moving. Our award-winning autonomy solutions choreograph flexible, uninterrupted work between autonomous mobile robots (AMRs), labor, facilities, and systems to keep the supply chain running, 24/7/365. We make business go.



Vecna Robotics is an award-winning, flexible intelligent material handling technology company with solutions engineered for seamless work between autonomous mobile robots (AMR) and the labor, equipment, facilities, and systems that keep business moving.

Our self-driving forklifts, pallet movers, and tuggers—powered by proprietary Pivotal™ orchestration software and our 24/7/365 command center—are optimized for multi-shift operations in medium to large facilities in distribution, warehousing, and manufacturing. Our tightly integrated solutions extend staff capacity and help to minimize labor shortage disruptions and demand spikes across different high-volume logistics environments.

What differentiates Vecna Robotics is that we are laser-focused on helping organizations to automate their most critical workflows, maximize throughput, and scale operations fast.

Our intelligent, self-driving equipment brings a cloud-first approach to materials handling that gets smarter over time. From initial simulation to professional set up, our solutions are tuned for key workflows like End of Line, Case Picking, and Material Replenishment and Put Away.

Whatever your facility throws at our autonomous equipment, industry-leading obstacle avoidance software is designed to keep your pallets on the move and maximize throughput. And in the event of a disruption, our remotely managed command center monitors your facility 24/7/365 to maintain 99%+ uptime.

And lastly, real success with Vecna is rooted in proven, measured, long-term customer results. Our novel robots-as-a-service pricing model and winning safety and platform scalability give you the long-term flexibility to keep your business moving for the long haul.



Verst

300 Shorland Drive • Walton, KY 41094
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Paul T. Verst
Chairman & CEO

At Verst, we believe the core values below have helped our company achieve success over the years and are represented in the fabric and makeup of our organization.

Our Core Values:

- Innovation
- Excellence
- Respect
- Safety
- Teamwork



Verst extends the expertise, capabilities, and reach of our clients by providing logistics solutions for warehousing, omnichannel fulfillment, contract logistics, contract packaging, shrink sleeve labeling, transportation management, and freight brokerage. A family-owned company for over 50 years, we combine industry and technical expertise with a commitment to seamless customer relationships to help achieve goals.

OUR SERVICES

WAREHOUSING & DISTRIBUTION

- Inventory Management
- Reverse Logistics/Returns Management
- 25+ Dedicated & Multi-Client Locations
- Rail Served
- Cross Docking
- Vendor-Managed Inventory (VMI)
- Value-Added Services
- Kitting
- Pick & Pack

FULFILLMENT

- Key Midwest Transportation Corridor
- Autonomous mobile robots (AMRs)
- 1 - 2 Day Ground to over 85% of U.S.
- Competitive Parcel & Freight Rates
- Shopping Cart Integration
- B2B & B2C
- 100% Order Accuracy
- Automated Systems & Sorter
- Customized Billing & KPI Reporting
- Customer Web Portal
- Low IT Startup Cost

TRANSPORTATION SERVICES

- Brokerage
- ELD Compliant
- Full Truck Load
- Expedited Reefer Service
- Load Planning
- Electronic Load Tendering
- Freight Bill Audit & Payment
- Order-to-Delivery Visibility

DEDICATED TRANSPORTATION

- Dedicated Contract Carriage
- Experienced Drivers
- GPS Tracking
- GEO Fencing
- Time Critical & Window Deliveries

CONTRACT PACKAGING

- Largest North American Shrink
- Sleeve Labeler
- Variety pack
- Bundling and Kitting
- POP Displays
- High-Impact Graphics
- Custom Packaging

INTEGRATED LOGISTICS SERVICES

- Modal Optimization
- Event and Returns Management
- Private Fleet Analysis
- LTL Consolidation
- Customized Invoices
- Consulting Services

TECHNOLOGY

- Integrated TMS
- Advanced WMS Software
- Best-in-Class Application Suite
- Enterprise-Class Infrastructure
- Customer Web Portal
- 24 x 7 x 365 Support
- Full EDI Capabilities
- Voice-Activated Pick Technology



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Wagner Logistics

1201 E. 12th Avenue • N. Kansas City, MO 64116
Sales & Marketing: 816-293-3503 • wagnerlogistics.com

Family Values – Exceptional Performance

As Wagner Logistics begins its 76th year in business, we have been reflecting on a key principle: Every customer is a big deal, whether it's a family owned business or a Fortune 500 company. Our team of supply chain experts provides precise solutions, crafted to fit each customer's needs at the speed our customers require.

Wagner's standard of service is rooted in providing exceptional performance and a keen ability to anticipate consumer demand. Wagner continues to stay on the cutting edge by investing in and implementing automation and robotic software across our nationwide portfolio of operations. We are eager to tackle your most complex supply chain challenges. Whatever it is, whatever it takes – we say, "Bring It."



**Honored 21 years
in a row**

We Get It.

Wagner Logistics has been a leader in supply chain operation for nearly 80 years. The company began as a transportation provider. Soon after, customers began to lean on Wagner's trusted expertise for additional services including warehousing, packaging and fulfillment. This year Wagner will operate in at least 24 facilities across the U.S., transport over 63,000 shipments and fill thousands of e-commerce orders.

Wagner Logistics' strategic approach delivers legendary service and leverages cutting edge

technology to continually improve supply chain visibility. Our extensive experience in distribution and transportation makes Wagner a natural strategic

fit for customers seeking reliable expert partnerships within their supply chain.

Dynamic Transportation

Fortune 100 and 500 companies rely on Wagner Logistics every day.

We are quite different than your average broker:

- Trusted carrier pool
- Carrier matching and customized carrier networks
- Increase your capacity
- Consistent rates
- Drive down customer shipping costs

Bottom line, Wagner's transportation group is perfectly positioned to support customers looking to increase capacity and outsource transportation services. Wagner knows how to deploy assets to meet dedicated trucking needs and provide non-asset transportation where you need it most. Wagner is also able to drive down parcel shipping costs due to the volume we move through our growing fulfillment operations.

Contract Warehousing

We serve our customers with nearly 7 million square feet of distribution and warehouse space spanning from California to Florida. Customers rely on our expertise in network analysis and facility placement to consolidate operations, increase supply chain visibility and maximize savings.

We bring a solutions focused mindset to the table when planning a new operation or improving a current operation. Wagner understands how to transition your distribution operation when others are

failing and how to find you the space you need in a tight market. Our seasoned start-up team has seen it all. They are nimble, precise and know how to avoid the roadblocks.



WAGNERSM
LOGISTICS

Bring it.

Fulfillment

E-commerce and online retailers are constantly tweaking products and services to meet and exceed consumer expectations. Wagner Logistics opened our fulfillment operation over 25 years ago and has been a nimble partner for our customers ever since. Our strategically located fulfillment operations in the heartland allow our customers to reach over 86% of the continental US in 2 days with ease.

Now more than ever customers are ordering products online. Wagner focuses on these key areas to help your company stay ahead of consumer demand:

- Robotics
- Automation
- Savings on labor
- Streamlined process

If there is anything, we can do for you, as we say at Wagner...Bring It!

Wen-Parker Logistics

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888-978-7817 • info@wen-parker.com • wen-parker.com



John Singleton
Chairman &
Chief Executive Officer

Mission Statement

To be the **RELIABLE** logistics service provider delivering **PEACE OF MIND** to our customers.

US Offices

- New York
- Los Angeles
- Miami
- Louisville
- Columbus
- Columbus (Warehouse)
- Detroit (Sales)
- Dallas (Sales)
- Boston (Sales)
- Halthom City (Fulfillment)



Long before such buzzwords as “unprecedented” and “pivoting” came into fashion Wen-Parker Logistics epitomized flexibility. Our customers chose us because they recognized that we were big enough to have boots on the ground in the key sourcing regions of the world, but that we also had the creativity, adaptability, and customer focus of a nimble, boutique provider.

Our worldwide digital technology platforms give our customers cutting-edge solutions to move goods from origin to destination from our offices or from our homes globally.

25 years ago, Wen-Parker Logistics was founded on a simple principle: **Trust**. As a true business partner, we want to provide our customers peace of mind, for people hire a freight forwarder they **TRUST**, so they can **SLEEP WELL** at night.

When the pandemic forced the world to stop in 2020, Wen-Parker Logistics kept moving. While we all heard new terms like “zooming,” “contact tracing,” and “telemedicine” Wen-Parker focused on finding alternatives to historic practice. We found other routes, chartered more aircraft, created

parallel paths: all focused on our customers’ needs. That’s because their needs remain at the core of everything we do.

2022 will continue to raise challenges that require adaptability and innovation, but our mission remains the same. We will be that trusted partner who can be counted upon to deliver.

We look forward to being your initial call when you need a company that provides and builds that value and trust, offering innovation and world-class service that helps you navigate the challenging global marketplace.

Wen-Parker Logistics currently services more than 80 countries across six continents and has been recognized as a Great Supply Chain Partner for six consecutive years by *Supply Chain Brain Magazine* and was named a Top 100 3PL by *Inbound Logistics* in 2020 and 2021.



WERC (Warehousing Education & Research Council)

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www.werc.org

Vision Statement

WERC helps members and their companies to succeed by creating unparalleled learning experiences, networking opportunities and access to research-driven industry information.

Mission Statement

WERC exists to lead the warehousing industry, advance warehousing science and develop competitive advantage for both individuals and corporations.

Core Values:

Welcoming

WERC brings together a diverse ecosystem of warehousing and logistics professionals where colleagues engage with each other in a friendly and collaborative manner.

Excellence

WERC delivers high quality education, relevant research and practical tools for warehousing and logistics professionals to continuously improve.

Respect

WERC is a vibrant community known for integrity, honesty and inclusion.

Commitment

WERC responds to changes in the industry and our stakeholder's needs by delivering the practical tools that enable success in both today's dynamic market and the market of the future.

About Us

WERC is the only professional organization focused on logistics management and its role in the supply chain. Through membership in WERC, seasoned practitioners and those new to the industry master best practices and establish valuable professional relationships.

Since being founded in 1977, WERC has maintained a strategic vision to continuously offer resources that help distribution practitioners and suppliers stay on top in this dynamic, variable field. These include national, regional, local and online educational events; performance metrics for benchmarking; practical research; expert insights; and multiple opportunities for peer-to-peer knowledge exchange.

Education

You need to learn fast to stay competitive, WERC offers practical, proven, peer-driven education to distribution logistics professionals through online courses, WERC webinars, MHI webinars, and the annual conference.

- Save big on registrations to the annual conference, North America's premier education and networking event for distribution logistics professionals.
- Stay current with WERC Weekly industry news, a monthly WERC Update, a free subscription to MHI Solutions quarterly magazine and access to MHI's Annual Industry Report.

Connections

The WERC community is made up of new and experienced distribution logistics professionals who are committed to sharing their expertise to further the success of your career and your operations.

Build your network at local chapter meetings, regional gatherings, online events and at the annual conference, which draws distribution logistics leaders from across North America.

Business Growth

Base your business decisions on objective research and rock-solid information you



can trust. Enjoy member discounts on the latest research, metrics reports and best practices guides packed with benchmarking data, and expert techniques to improve your operations.

Solutions at WERC Webinars

The Solutions at WERC Webinars offer accessible, affordable, and up-to-date continuing education for distribution logistics professionals across North America. Log-in from anywhere with an internet connection to get practical, relevant, actionable insights that you can apply immediately in your organization.

Facility Assessment & Certification Program

WERC's exclusive certification program is good for business. It helps warehouses run more efficiently, and the exclusive WERC Certified badge shows you're a reliable partner.

What is the WERC Facility Assessment & Certification Program?

The Facility Assessment & Certification Program is a comprehensive and fully independent evaluation of overall capabilities and performance of core warehousing functions. The evaluation is conducted by independent, third-party auditors who use a robust, industry-standard grading methodology that includes a detailed on-site facility inspection as well as an in-depth process assessment.



Whiplash

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Jeffrey Wolpov
CEO

Mission Statement

Our mission is simple: We help brands keep their promises to customers by coordinating seamless, end-to-end omnichannel fulfillment. We are committed to enhancing the customer journey at every touchpoint through the pairing of powerful technological integrations and decades of advanced logistics experience.

Our focus is to provide scalable fulfillment solutions to merchants at every stage of their growth journey, from digitally native vendors to the major nationwide retailer. Offering a full spectrum of fulfillment capabilities and flexible value-added services, Whiplash enables you to offer the very best customer experience—every time.



As one of the nation's leading omnichannel fulfillment providers catering to both established and emerging brands, Whiplash manages a sophisticated nationwide distribution and fulfillment network that encompasses all four gateway ports for maximum speed and flexibility. With 20 state-of-the-art facilities and 7.2 million square feet of warehouse space, we are the experts in managing integrated, world-class fulfillment strategies for clients across multiple channels.

By embracing the latest technological advancements and automation solutions, Whiplash is uniquely equipped to handle the demands of our evolving retail marketplace. The Whiplash platform offers merchants an unprecedented level of connectivity with their customers and inventory management systems, ensuring real-time, data-driven insights for rapidly scaling D2C brands in addition to retail and wholesale merchants.

No matter whether your order volumes are in the hundreds or the tens of thousands, we can scale effectively alongside you to ensure the highest level of

support for you and your customers.

As consumer expectations grow for swifter delivery and increased communication touchpoints, Whiplash has pioneered a flexible and high-performance approach to warehousing and fulfillment which can be tailored to suit merchants' unique needs. Through the strategic placement of our facilities in proximity to major consumer and transportation hubs, we drive effective cost savings for clients while still achieving the fastest possible turnarounds and unparalleled standards of service.

By partnering with Whiplash, you will gain the powerful backing of a strategic, nationwide footprint and an extensive team of fulfillment experts—empowering your business to be the best it can be.

Your brand. Fulfilled.



WSI

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Solutions@wsinc.com • wsinc.com



Paul Simmons
COO

Mission Statement

WSI is committed to being the premier provider of supply chain solutions in North America.

We believe premier means providing **Absolute Reliability** in our service and **Best Overall Value** to our clients, while providing a positive and safe working environment for employees.

Services

- Warehousing & Distribution
- Fulfillment
- Chemical Logistics
- Transportation
- Transloading
- Import/Export



For over 50 years, WSI has helped customers succeed with reliable, integrated third-party logistics services. As one of the largest privately held logistics companies in the U.S., WSI spans a nationwide distribution network with global logistics reach. WSI has expertise in warehousing, transportation, and fulfillment of goods in every industry—with the right people, processes, and technology to meet your supply chain needs.

Fulfillment

WSI offers specialized fulfillment services for B2B and B2C. Most orders we receive can be picked, packed and shipped same day. Reliable product delivery has a direct impact on your brand. From order to delivery, WSI supports customers with a broad range of seamless fulfillment solutions that allow you to focus on day-to-day business.

Chemical Logistics

As a chemical logistics provider to some of the top chemical companies worldwide, WSI has extensive experience safely and efficiently handling hazardous and non-hazardous materials in numerous chemical sectors, most recently agricultural chemical. An American Chemistry Council Responsible Care® partner, with FTZ designation, WSI has a comprehensive lineup of chemical services giving the power to be your one-source provider.

Tailored End-to-End Supply Chain Solutions

WSI supports customers with reliable, fully integrated logistics solutions that free them to focus on running their business. Wherever the challenges or opportunities in your supply chain reside—improving delivery schedules, reducing costs, minimizing damage claims—WSI can tailor a logistics solution to your specific needs. We are solution oriented and data driven, using the most advanced operational methods and technologies to ensure your supply chain runs smoothly. Services include: transportation & transload, fulfillment, chemical warehousing and handling, import/export, distribution & warehousing, contract services, and logistics technology.

National Distribution & Fulfillment Network

Strategically positioned, WSI operates 30+ campuses, totaling 14 million square feet, across North America in major metropolitan areas and transportation hubs. This means wherever you need your product, from California to Pennsylvania (or both!), WSI has a solution to meet your needs.

Absolute Reliability™

Our customers and employees will tell you that we stand out due to our ability to deliver on our promise; we conduct business with integrity and Absolute Reliability.



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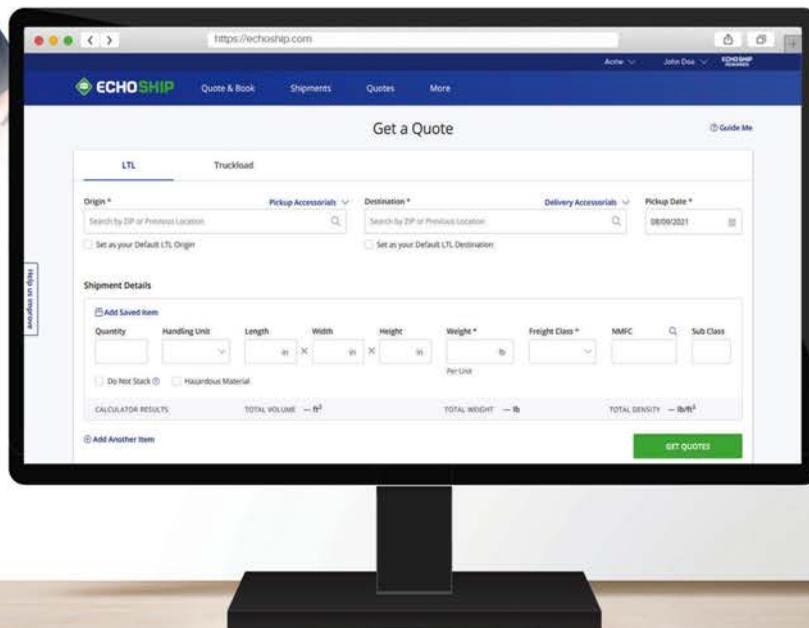
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