

OCTOBER 2021

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Info SNACKS

BITE SIZED SUPPLY CHAIN/LOGISTICS INFORMATION



DRONE DELIVERIES GET A SHOT IN THE ARM

UPS Flight Forward is making COVID-19 vaccine deliveries via drone for Atrium Health Wake Forest Baptist in Winston-Salem, North Carolina, the first COVID-19 vaccine drone delivery in the United States, according to UPS.

The drone airline received a first-of-its-kind approval from the Federal Aviation Administration to carry alkaline and lithium batteries, which are needed to power temperature monitoring devices that the CDC requires for COVID-19 vaccine transport.

Because COVID-19 vaccines require strict temperature-control throughout the supply chain, Atrium Health Wake Forest Baptist securely stores the vaccine at its central pharmacy before transporting supplies to immunization centers located throughout the community.

Consumers Fear Supply Chain Scaries

77%

of respondents say the rise of the COVID-19 Delta variant is increasing their supply chain concerns.

92%

believe more supply chain disruptions are coming and 66% are scared that they will never end.

80%

say delays and shortages could cause them to cut ties with favorite brands.

— Oracle study of 1,000+ U.S. consumers



20,000

Number of order fillers, freight handlers, lift drivers, technicians, and management workers Walmart is looking to hire for its distribution and fulfillment centers. The positions are permanent—not just seasonal help—and include full- and part-time roles. Average pay for supply chain employees is \$20.37 hourly.

“Because of a 50-cent chip, we are unable to build a car that sells for \$50,000.”

— Murat Aksel, head of procurement for Volkswagen Group, during a recent press briefing



PARTS AND PARCELS

- U.S. parcel volume grew 37% year-over-year, reaching 20 billion, up from 15 billion in 2019.
- In 2020, around 640 parcels were shipped per second, compared to 466 in 2019.
- Between 2015 and 2020, U.S. parcel volume doubled from 10 billion to 20 billion.
- U.S. parcel volume will nearly double by 2026, reaching 32-39 billion.
— Pitney Bowes, sixth annual Global Parcel Shipping Index

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CHOOSING THE RIGHT MODE

Sometimes it's obvious which transportation mode to select, but sometimes you have to evaluate the tradeoffs. Here's some practical advice for deciding how to ship in normal and uncertain times.



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PORT BRIGHT SPOTS FROM COAST TO COAST

To address the rising tide of container volume, larger ships, and the call for sustainable operations, many ports are embarking on substantial capital improvement projects. Here's what's on deck.



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3PLS DRIVE LOGISTICS IT SOLUTIONS

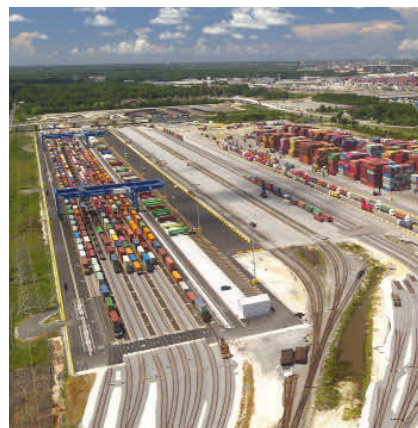
As consumer expectations and e-commerce shift into overdrive, more shippers are turning to 3PLs' technology expertise to rev up their services and capabilities in an ever-changing marketplace.

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GREAT LOGISTICS SITES: SHAPING THE FUTURE

From port access to available workers and proximity to consumers, these locations are ideally suited for moving products from Point A to Point Z and continue to build on their advantages. Here's how organizations support their success.



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*South Carolina
Ports Authority
enhances capacity*

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Logistics behind the scenes of the latest James Bond movie



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To best serve those who serve, Lisa Mernin, director of operations at military equipment supplier ADS, doesn't look for the cheapest partners; she looks for the best value and prioritizes customer service.

69 TOOLKIT

Lawn Equipment Parts Company made its grass greener by upgrading to a fully integrated enterprise resource planning system that could handle its 60,000 SKUs and multiple distribution channels.

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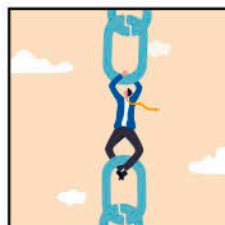
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MORE NEWS ONLINE



CHOOSE EMPATHETIC TECHNOLOGY

From canceled sailings to a driver shortage, anxieties are high. The last thing you want to do is introduce a new technology that exacerbates those challenges for your team. It's time to be selective about what tools you implement, and doing so starts with empathy.
bit.ly/EmpatheticTech



HOW TO AVOID FRAGILE SUPPLY CHAINS

Supply chains break down from external shocks either because of an inability to foresee change, or an inability to adapt to it. Learn how to mitigate those shocks with accurate predictions and improved responses.
bit.ly/AvoidFragileSC



LEVERAGE 3PLs TO EASE PANDEMIC GROWING PAINS

The pandemic has demanded more responsive logistics, with consumers and businesses expecting just-in-time delivery—especially for essential items such as toilet paper. Here's how third-party logistics providers can help move excess materials and finished goods.
bit.ly/SCGrowingPains

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CHECKING IN

Twinning Your Supply Chain from Google



Keith Biondo, Publisher

Google once again is helping to democratize business solutions that were previously available only to the Fortune 1000. Its two new supply chain management solutions—Supply Chain Twin and Supply Chain Pulse—provide a powerful business tool for small and mid-size enterprises.

“Siloed and incomplete data is limiting the visibility companies have into their supply chains,” says Hans Thalbauer, managing director of supply chain and logistics at Google Cloud. “The Supply Chain Twin enables customers to gain deeper insights into their operations, helping them optimize supply chain functions from sourcing and planning to distribution and logistics.”

Digital twinning in manufacturing was an advancement beyond the initial wire frames to solid 3-dimensional representations or a “digital twin” of the product. It was, and still is, an effective manufacturing tool for product development, improvements, or “what-if” scenarios.

Five years ago, twinning evolved beyond products to processes—including creating digital representations that model running supply chain operations. That evolution required sophisticated and expensive hardware and software to manage the number of moving variables in supply chain operations, and the added complexity of adding a 4th dimension (time) to the process.

The expense and investment was worth it to those that could afford it because having a twin of your business operation gives you the ability to stress test your supply chain in advance of any imaginable disruption. You also get a way to suss out incremental improvements without disrupting your current running operations.

The pain of pandemic disruption, e-commerce growth, consumption explosion, supply shortfalls, ghosted workforces, and cost and scarcity of transport lift has motivated many to explore twinning their supply chains, and now, thanks to Google, they can afford it.

More companies will soon be able to build digital supply chain twins by assembling and organizing data to get a complete view of their suppliers, inventories, weather and more. Supply Chain Twin is partnered with the Google Supply Chain Pulse module. Used together with Twin Pulse, users get live dashboards, analytics, alerts, and collaboration connections in Google Workspace.

Gaining greater insight and optimizing functions is not all this offering will do. Allowing you to stress your operations and come up with preemptive plans and workarounds can mean the difference between shutting down and survival.

Keith Biondo

inbound
logistics
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Vol. 41, No. 10

October 2021

THE MAGAZINE FOR DEMAND-DRIVEN ENTERPRISES

www.inboundlogistics.com

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What spot shortage do you predict next?

YOUR FAVORITE BEER.

Aluminum and cardboard shortages have been discussed, but little is mentioned about the knock-on effects like AB InBev/MillerCoors buying up most available supply, resulting in microbreweries struggling to package their product.

—Jason Murray
Co-founder and CEO, Shipium

PARTS IN GENERAL.

It seems like any time something breaks, from refrigerators to pool equipment, replacement parts are all on backorder. The fact that the shortages are so widespread speaks to the fragility of our “just in time” supply chain today. I expect PPE and other medical supplies will suffer shortages next. Not to mention a shortage of healthcare workers who are leaving the profession due to burnout.

—Belinda Rueffer
Director of Marketing, Axele.com

THE ONGOING SHORTAGE OF SEMICONDUCTORS AND CHIPS

will result in a global shortage of electric cars, as electric car manufacturers will lack semiconductor components. Companies like Arrival, producing electric buses in the UK, or electric truck manufacturer Rivian, supported by Amazon and Ford, are already experiencing difficulties in the supply chain. Arrival's capitalization has



dropped by 150% and Rivian has postponed the supply of its electric pickup twice already.

—Dmitri Fedorchenko
CEO and Co-Founder, Doft

THE PATH OF PRODUCT SHORTAGES

is similar to the path the virus has followed in some ways. It's now shifting to more discretionary products that businesses tend to keep smaller amounts of, like clothes and furniture. We'll see the same products impacted as we head into the holiday season.

—Lior Elazary
CEO and Co-Founder
inVia Robotics

TALENT IS THE BIGGEST SHORTAGE

we should be worried about. A mixture of demographics, the need for changing skill sets, and perception/PR of logistics roles have conspired to create a talent crisis within our

industry. I worry about the needed talent to ensure all goods flow without (additional) shortages.

—Neil Wheeldon
Chief Strategy & Innovation Officer
BDP International

I DON'T THINK THERE WILL BE A SHORTAGE

like we saw with toilet paper, but they are happening. Ocean containers, space on vessels, and transportation capacity in general are historically difficult to secure. What will probably happen is a shortage of domestic flights due to the Delta variant. Airlines are suffering and I'm guessing they will start to park aircrafts soon.

—Chris Peckham
VP, Operations, FreightPlus

WE'LL SEE CONTINUED SHORTAGES

that impact logistics, including plastic packaging, shipping pallets, and other products that are instrumental to moving goods globally. The days of “Black Swan” events in terms of supply shortages are long gone. Business disruptions are now the norm and not the exception.

—Jennifer Bisceglie
CEO, Interos

HIGH-TECH COMPONENTS ARE NEXT.

Toilet paper was the oddest shortage. The pandemic caused panic-buying from a fear of food or disinfectant/paper products running out for

families. People would think there were shortages, but panic-buying meant that stores could not keep up with typical turnover rates with the worker shortage.

—**Reo Hatfield**
VP, Business Development (LTL)
TA Services

MEDICAL FACILITIES ARE SHORT ON A RANGE OF SUPPLIES, and this could only get worse. Shortages of masks and gloves from the early days of the pandemic have spread to many other medical items in the United States and Europe, from exam tables and heart defibrillators to crutches and IV poles.

—**Adhish Luitel**
Industry Analyst, Supply Chain
Management and Logistics
ABI Research

THE INDUSTRY CONTINUES TO FACE SHIPPING CAPACITY SHORTAGES, alongside accelerated consumer demand. As China and Thailand face congested ports and COVID lockdowns, we'll continue to see shipping delays and potential shortages of goods such as coconut, rubber, and other products from those regions.

—**Mark Robinson**
President, UPS Capital

EXPECT SPOT SHORTAGES in industries and manufacturers that remain impacted by COVID and restrictions as labor constraints continue to grow. It's important teams get ahead of the impact by maximizing efficiencies in the processes and people they have in place while planning for ongoing impacts in the future.

—**Alex Wakefield**
CEO, Longbow Advantage

WE HAVE THE PERFECT RECIPE FOR A GROCERY SUPPLY CHAIN CRISIS.

Retailers are still feeling the residual effects of post-lockdown challenges. Layer into this reality global issues such as closed borders, import and supplier challenges, extreme weather, and now, the natural gas shortage.

—**Patty McDonald**
Head of Solution Marketing
Symphony RetailAI

Holidays on Hold?

Christmas presents. To avoid a "Nightmare Before Christmas," retailers should be placing holiday orders for Chinese-made products earlier this year. If not, a global shipping backlog could mean shortages. You don't want to be the little boy or girl that Santa Claus forgot.

—**Richard Howells**
VP, Solution Management for Digital Supply Chain
SAP Ariba

Order your holiday gifts early this year. Looking back, semiconductor shortages this vast have surprised me the most. They are so integral in almost every aspect of modern life, you would think we would protect the ability to produce them on demand.

—**David Spencer**
Director of Business Intelligence
Arrive Logistics



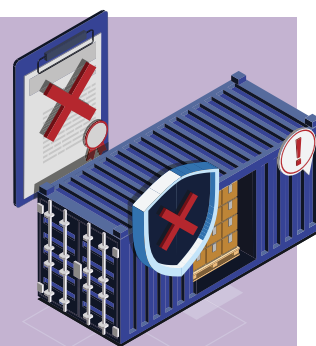
Anything and Everything

We have been driving our supply chains to be lean and just-in-time. That works fine when your environment is relatively stable, but what happens when disruption impacts both your supply—inventory dries up—and you encounter unpredicted spikes in demand? Supply chain leaders need to understand that running too lean saves working capital, but also creates vulnerabilities to shortages.

—**Guy Courtin**
VP and Industry Principal, Retail, Tecsys

Anything can happen as we've seen interruptions ripple out in previously unforeseen ways. Spot shortages of a few obscure components led almost all major auto manufacturers to slash production forecasts by double-digit percentages this year, which is indicative of just how intricate and fragile the global supply chain is.

—**Danny Ramon**
LE Connect Manager, Overhaul



Have a great answer to a good question?

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Kudos to IL RFP Support

Inbound Logistics' online 3PL Request for Proposal tool allowed

me to reach out to many qualified 3PLs simultaneously. Within days, I heard back from the ones who were interested and can deliver. This saved myself and my client significant time and expense.

I had a unique multimodal and multi-location client with a unique product. While I know the market well as a supply chain executive, there are many options on transportation and warehouse locations to form a network.

—**Dave Mabon**

President, Ongoing Value, Inc., via email

Re. Good Question: What's the First Thing You Would Do to Address the Truck Driver Shortage?

bit.ly/driver_shortage_solutions

The first thing I would do to help with driver recruitment and retention would be to value their time by making sure it is not continually taken advantage of—for free.

—**Danny R. Schnautz**

Clark Freight Lines Inc.

Shippers and carriers need to think about ways to make the lives of truckers easier to increase retention. Trucking is a hard job, so you've got to let the drivers know you're looking out for them.

Think about their experience on the road and how you can improve it with simple upgrades like ensuring access to clean bathrooms, water, and snacks at facilities along their routes.

Look out for their safety with the right tracking tools and ELD connections, so dispatch always has a line of sight to their vehicle and location in case of any issues on the road. And, of course, enable better communication between the driver, dispatch, and the shipper with the right technology—like a shipment-specific messaging app—so they also feel like you have their back to troubleshoot any issues that arise.

Finally, in addition to trying to curtail the shortage, you need a plan to work within today's existing constraints. How can you increase capacity and efficiency to do less with more drivers on that road? You'll need to ensure you can access the capacity you need by looking beyond your existing contracted carriers to do more spot and mini bids and expanding your network of reliable carriers.

—**Greg Price**

CEO & Co-Founder, Shipwell

Fast TAKES

Congestion is not a problem carriers, forwarders, or shippers can

fix. Two big factors have to change in order to increase effective capacity: infrastructure and demand. Without better infrastructure—deeper ports, more terminals, better rail lines, better roads—any increase in equipment or goods is only going to overflow the system. And while demand for goods continues to remain high, the influx of shipments will continue to put additional pressure on existing infrastructure.

—**Nathan Strang**

*Sr Trade Lane Manager, Ocean Operations
Flexport, on continued port congestion*

The global supply chain is under immense pressure and desperate shippers have no choice but to pay up to secure deliveries, or at least try to. It's a crazy market out there.

This year we've seen the emergence of larger retailers chartering their own vessels to ensure both reliability in the supply chain and a degree of cost control.

September saw yet another major shipper resort to what some see as a drastic measure, with the John Lewis Partnership teaming up with an as-yet-unnamed freight forwarder to take on its own ships. This is a direct response to a market in overdrive, but one wonders if this type of approach could signify a new way of working, in the long term, for shippers sick of being held to ransom.

—**Patrik Berglund**

CEO, Xeneta, on a tumultuous 2021 for shippers



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10 TIPS

Managing Inbound Transportation

Whether it's raw materials or popular holiday products, your primary objective is to get goods to your customers exactly when and where they need them. To achieve that objective, you need to manage your inbound transportation process. Here's how.

1 CONTROL INVENTORY CARRYING COSTS

To stay competitive and run a successful inbound operation, be mindful of your inventory carrying costs. Avoid storing items for long periods of time and properly manage warehouse space to ensure you balance having enough to handle your inventory, while avoiding having too much empty or underutilized space.

2 GAIN VISIBILITY INTO YOUR OPERATIONS.

Tips 1 and 2 go hand in hand—when it comes to controlling your costs, you need visibility into your operation, and as much visibility as you can get. Visibility is key to knowing where the redundancies, congestion, and waste are. If you don't already have the level of visibility you require, begin to research and identify software providers that can meet your needs.

3 MAINTAIN VENDOR RELATIONSHIPS.

Strong partnerships are critical to your fluidity. It's important to recognize each of them contributes and plays an important function in your inbound transportation strategy. A good vendor relationship requires the following: Be courteous, pay on time, and establish clear expectations.

4 INVEST MONEY AND TIME IN TECHNOLOGY.

Don't just invest monetarily in technology; also invest your time. Pay attention to trends and research how others use various platforms to increase efficiencies and digitize operations. Look for technologies that are set up to talk to each other internally as well as externally. The supply chain works better when connected. Don't invest in a technology that creates a silo that is unable to share with others.

5 COLLABORATE WITH YOUR PARTNERS.

Sharing information and engaging with your supply chain partners allows for the best ideas to surface.

6 KEEP UP ON CURRENT EVENTS.

Stay up on world news, especially in regions where you source raw materials or have a trade lane. It is important to know before your competitors about any external threats that might be headed your way. Closely monitoring this type of information enables you to take proactive steps to curate a short- or long-term solution.

7 ORGANIZE PRODUCTS AND PROCESSES.

An absolute must with inbound transportation is a well-organized process. Organize and store inventory logs, transportation options, physical storage, and returns/exchange documentation—ideally electronically.

8 STREAMLINE INTERNAL AND EXTERNAL COMMUNICATIONS.

All members of your team—from sourcing staff to vendor partners to transportation providers to the receiving team—must be kept connected and up to speed with the correct information at all times. Simplify the process so that it is easy and convenient to communicate, whether at your desk or on the road.

9 EXPECT THE UNEXPECTED.

It will happen. Maybe not this month or this year, but crises hit when we least expect it, so we better be prepared. Hurricanes, a clogged Suez Canal, or an invasive insect destroying a crop—your supply chain is often under attack from various angles. Don't fall into the trap of thinking it won't happen to you.

10 CARRY MORE BUFFER STOCK.

Our current situation has taught us that we need to build more buffer stock into our operations in order for the supply chain to remain fluid. Just-in-time philosophies must be coupled with just-in-case options. Of course, there are benefits to running a lean operation that eliminates unnecessary fat, but one that operates too close to the bone often lacks the flexibility and agility necessary to survive.

SOURCE: MIKE WILSON, CEO, CONSOLIDATED CHASSIS MANAGEMENT (CCM)

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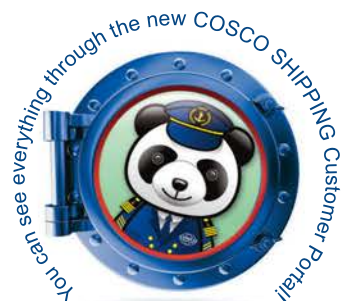
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Sustainable Fashion

TRYING ON DIGITAL GARMENTS

Can fashion eliminate carbon from the supply chain by becoming entirely digital? As fashion brands get in on digital clothing, cryptocurrencies, and non-fungible tokens (NFTs)—unique data stored on blockchains that can be traded and sold—it's possible.

Digitizing fashion: Retailer DressX sells hundreds of digital items. When a consumer purchases an outfit, DressX superimposes it on an uploaded photo of the person. This process is greener than typical manufacturing, packaging, and transport; DressX says its digital garment production emits 97% less carbon than physical garments.

Dirty data: Despite those environmental benefits, data has a carbon footprint of its own. While fashion NFTs reduce the physical impact supply chains have on the planet, they, too, contribute to climate change. Cryptocurrency mining uses up valuable resources that are already in short supply due to supply chain issues around the globe.

Greener currencies: Some crypto platforms are migrating to sustainable “proof-of-stake” systems, and fashion brands prioritize this when choosing partners to work on their digital items, says a Glossy.co report. The Ethereum blockchain, where most NFTs live, is moving to such a system, which could be a big step toward sustainable digital fashion.

ETHEREUM'S PROOF-OF-STAKE SYSTEM WILL USE 99.95% LESS ENERGY THAN ITS PREVIOUS SYSTEM, MAKING SUSTAINABLE FASHION NFTs A REAL POSSIBILITY.

—Glossy.co



DYEING FOR SUSTAINABLE DENIM

Researchers from the University of Georgia developed an eco-friendly, non-toxic dyeing technology for denim that could make the textile supply chain significantly more sustainable, as indigo dyeing is a significant source of pollution in the fashion industry.

Most indigo is produced synthetically and must be reduced with chemicals. The denim industry uses more than 45,000 tons of synthetic indigo per year, along with more than 84,000 tons of chemical reducing agents, researchers say. It takes up to 30 gallons of water to dye just one pair of jeans. The water, riddled with chemicals, is then released into the environment.

The new technology uses natural indigo, eliminating toxic chemicals. It requires only one coat of indigo to secure 90% of the color, significantly reducing the amount of water needed in the process. Conventional methods require up to eight coats and secure only 70% to 80% of the color, the research says.

This streamlined process saves workers time by eliminating the need for multiple dips and oxidation time between each dip. The new technology mixes indigo particles with wood pulp and deposits them on the textile's surface, gluing the color in place. And it doesn't sacrifice comfort, researchers say, maintaining similar levels of thickness and flexibility in the fabric.

RETAILERS RUN WITH GREEN INITIATIVES

From reducing waste water to eliminating plastic, fashion retailers sew up sustainability initiatives that could improve global supply chains' environmental impact. Here are some of the latest initiatives:

- **Global fast-fashion chain Primark** aims to reduce its environmental impact while maintaining its low prices by strengthening the durability of its clothes by 2025, making them recyclable by 2027, and making all products from recycled or more sustainably sourced materials by 2030.
- **Sustainable clothing brand Everlane** launched Next Collective, a grant program that provides entrepreneurs with \$20,000 and access to leaders in sustainability. Its first goal is to tackle fashion's reliance on plastic. Everlane has removed 90% of all virgin plastics from its supply chain, and is working to remove the final 10%, such as zipper pulls and stretch material. These obstacles are industry-wide, the retailer says, and the program creates an opportunity to collaborate on solutions.
- **Womens clothing brand Baukjen** launched its own Sustainability Index, sharing environmental and social impact scores for each of its products. This gives consumers a higher level of transparency into its supply chain, such as how material choices and manufacturing contribute to the environmental impact of each garment.

SUSTAINABLE SOURCING GETS A PLATFORM

Startup company Sourceful, a data-driven platform that helps businesses source eco-friendly packaging, merchandise, and components, recently raised \$12.2 million in funding to scale and build out its sourcing technology.

Sourceful works with brands spanning fashion, food, beverage, healthcare, and e-commerce across the U.K., Europe, and the United States. It uses data to help them source and manage eco-friendly products, making supply chain sustainability more achievable for businesses of all sizes. It currently has more than 40 suppliers in the U.K. and China.

Sourceful has also created a universal standard for brands and suppliers to measure the impact of their sourcing choices. The assessment looks at greenhouse gas emissions data spanning a product's entire life cycle, from manufacturing to shipping and end of life, and identifies areas of improvement.

In 2022, Sourceful will launch new services to help businesses find, customize, and design packaging to help minimize their carbon footprint and make products more cost-effective, the company says.

83% OF THE CONSUMER GOODS INDUSTRY'S CARBON FOOTPRINT IS IN THE SUPPLY CHAIN, AND 84% OF CONSUMERS SAY BRANDS HAVE A RESPONSIBILITY TO MINIMIZE THEIR ENVIRONMENTAL IMPACT.

— MediaCom Survey

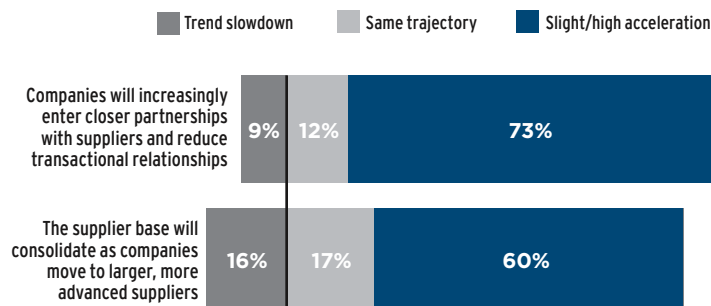
THREADING TIGHT-KNIT PARTNERSHIPS

Fashion brands are accelerating their sustainability initiatives through deeper relationships and by partnering with suppliers across tiers, says a McKinsey report, as production and raw materials present big opportunities to reduce emissions.

About 73% of fashion brands say they will reduce transactional supplier relationships in favor of long-term commitments and strategic alignment (see chart). As brands move from broad sustainability plans to concrete actions, those deep partnerships will be essential for successful execution, McKinsey says.

For digitized, agile product development, brands will also need closer relationships between their design and merchandising functions and suppliers. This will speed adoption of new technologies that drive sustainability and on-demand manufacturing, the report says.

FASHION EXECUTIVES WILL OPT FOR CLOSER PARTNERSHIPS WITH SUPPLIERS IN 2021



SOURCE: MCKINSEY TIME FOR CHANGE REPORT



12 MOST TRANSPARENT CLOTHING BRANDS

OVS ranks as the most transparent fashion brand on the 2021 Fashion Transparency Index at 78%, a 44% jump from 2020.

However, progress in the industry remains slow on key issues such as overproduction and carbon emissions, with brands achieving an average score of just 23%. Without improved transparency, a sustainable industry won't be possible, the report says.

The index ranks 250 of the largest fashion brands based on their social and environmental policies, governance, supply chain traceability, and due diligence, as well as issues such as pandemic response and circularity. Here are the 12 most transparent brands and their scores:

1. Italian clothing company OVS—78%
2. Global fast-fashion company H&M—68%
3. U.S. outdoor company The North Face—66%
4. U.S. footwear company Timberland—66%
5. European fast-fashion brand C&A—65%
6. U.S. skateboarding apparel brand Vans—65%
7. North American wholesaler Gildan—63%
8. Global apparel company Esprit—60%
9. Global fashion brand United Colors of Benetton—60%
10. U.S. clothing brand Calvin Klein—59%
11. U.S. clothing brand Tommy Hilfiger—59%
12. U.S. business wear brand Van Heusen—59%

READERPROFILE *as told to Karen Kroll*

Don't Say No and Never Give Up



LISA MERNIN is director of operations with ADS, Inc., a military equipment and tactical gear supplier.

RESPONSIBILITIES: Oversee the operations of two warehouses, the planning department, and an outside 3PL.

EXPERIENCE: Director of purchasing; production planning and warehouse manager, both with ADS; positions in engineering, production scheduling, and planning and materials management with Stewart Sandwiches, ITW Southland; Johnson Controls, and MG MiniGears.

EDUCATION: B.S., Mathematics, Virginia Polytechnic Institute and State University

My years with a Tier 1 automotive supplier taught me you can't shut down auto production lines or it costs tens of thousands of dollars. You find a way to get parts where they need to go, when they need to go. You never give up.

That lesson has remained with me. ADS offers more than 1 million stockkeeping units (SKUs) and has thousands of suppliers. The majority of our orders are drop-shipped directly from our suppliers to our customers.

FINDING POWER WITH PARTNERS

My biggest concern is not knowing what we don't know. So, we'll partner with a freight forwarder or third-party logistics (3PL) provider that has experience in the type of product or the country we're shipping to and can help us work through obstacles.

I don't look for the cheapest partners; I look for the best value. Customer service is a huge priority. Some potential partners talk about their competition rather than themselves. You should be able to stand on your own merits. We often want to see what a company can do differently.

During the pandemic, we won a contract to distribute 120 million gloves to four FEMA destinations that were issuing goods for the wildfires in California and other events. The company we dealt with in Australia shipped the products to Long Beach by ocean. Then we coordinated with a freight forwarder to move them to a warehouse in Southern California.

The ports of Los Angeles and

"I don't look for the cheapest partners; I look for the best value. Customer service is a huge priority. Some potential partners talk about their competition rather than themselves but you should be able to stand on your own merits."

Long Beach were jammed, but the coordination the freight forwarder provided between the ports, the warehouse, and the FEMA locations was phenomenal. They shipped almost 2,500 pallets of gloves to four different destinations over several months. Only three pallets were mis-shipped. They proved themselves.

Also key was that we continually reached out to our partners and asked, 'What do you need from us?'

WINDING ROAD

My career has been a winding road. After earning a B.S. in math, I interviewed for a job in industrial engineering. I didn't know what that was, so I looked it up, interviewed, and then got the job.

Several positions later, I worked for an automotive supplier and shifted into production scheduling and materials management. I was expediting shipments all over the country.

Then ADS reached out. We're

trying to automate and streamline processes. We worked with a 3PL to develop a supplier portal. Suppliers can, for instance, upload shipment information, which we pass on to our customers. We're also using robotics to process invoices quickly.

Our focus is on accurately telling a customer when a package is going to ship. While we'd love to give delivery date estimates as well, it's not always a fit for everything we sell.

We don't say no. We keep pushing because what we do is meaningful.

In the early days of the Iraq/Afghanistan conflict, a deploying soldier needed a pair of boots. We shipped them that day to Los Angeles International Airport, but the airline mistakenly sent them to San Francisco. Our freight forwarder learned the soldier was flying through San Francisco and called his San Francisco office. They got the boots and stood at the airport with a card with the soldier's name on it, and then gave him his boots.

Our purpose is serving those who serve, and we take that to heart. ■

Lisa Mernin Answers the Big Questions

1 What book has had an impact on you?

Think Again: The Power of Knowing What You Don't Know by Adam Grant. This book looks at how people get ingrained in their beliefs. Grant shows how it's okay to be wrong, and to think outside of whatever you normally do.

2 If you could have one superpower, what would you like?

To see into the future. I don't care if it's bad or good, I want to know. Then I can deal with it.

3 If you had \$1 million to start a new business or philanthropic venture, what would you do?

My son is a Type 1 diabetic, so I'm a big advocate of the American Diabetes Association. I'd work on finding a cure and bringing down the outrageous cost of insulin.



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WAREHOUSING

[IN FOCUS]

NOTED

The Supply Chain in Brief

> GOOD WORKS



- Through support from **Penske Truck Leasing** and **Lineage Logistics** and a \$2 million grant from the Darden Restaurants Foundation, Feeding America added refrigerated trucks for 10 food banks to support mobile pantry programs and food distribution for communities in need. Each food bank receives a 26-foot vehicle that can transport 12,000 pounds of food in each trip.



- To support aid efforts following an earthquake, **Volga-Dnepr Group** organized two charter flights to deliver more than 110 tons of essential cargo, such as tents, water purifiers, mobile kitchens, and general cargo, to Port-au-Prince in Haiti.

> GREEN SEEDS



- **Performance Team, A Maersk Company**, is adding 16 Volvo VNR Electric Class 8 trucks to its transportation fleet, replacing 16 diesel trucks. In addition to zero tailpipe emissions, the trucks improve working conditions for drivers with a quieter cab and by eliminating exposure to diesel fuel and exhaust.

- **Odyssey Logistics & Technology's**

Odyssey Cloverleaf Program is on target to reduce carbon emissions by more than 300,000 metric tons in 2021. In the program, the company's sustainability and carrier teams calculate emissions and other metrics, offer recommendations, and employ emerging technologies such as alternative fuel vehicles and IoT-enabled devices to enhance customers' supply chains.

- **CEVA Logistics** is offsetting 100% of its less-than-containerload logistics, reducing its customers' carbon footprint at no additional cost. Through the purchase of carbon credits, the company will contribute to the conservation of the Gola Rainforest National Park in Sierra Leone.

m&a

- **TrueCommerce**, a supply chain cloud solutions provider, acquired **DiCentral**, a business-to-business application programming interface solutions provider.

- Logistics automation platform **Magaya** acquired **Qwyk**, a cloud-based digital freight forwarder platform, and **SimpliShip**, a freight marketplace platform.

- Global logistics group **Deutsche Post** acquired ocean freight forwarder **J.F. Hillebrand Group**.

- Omnichannel fulfillment solutions provider **Whiplash** acquired Utah-based 3PL fulfillment provider **Enlinx**.

- **Zebra Technologies** intends to acquire **antuit.ai**, a software-as-a-service solutions provider for the retail and consumer packaged goods industries.

- Global air cargo company **Worldwide Flight Services** acquired **Pinnacle Logistics**, a U.S. cargo handling services provider.

> SHOVEL READY



■ **Saddle Creek Logistics Services** plans to open an 864,000-square-foot distribution center in Fort Worth, Texas, in December 2021. The shared-space facility will help the third-party logistics provider accommodate growth from new and existing clients. The newly constructed building has 40-foot ceilings and 120 dock doors, and can be built out to suit specific client needs.

■ **The Atkins Group** is constructing a warehousing and distribution facility in Decatur, Illinois, in the city's logistics corridor. The 635,000-square-foot facility will boost the region's position as an emerging logistics and distribution site. Construction will wrap up in the summer of 2022.

> IN MEMORIAM

John Ruan III, chairman emeritus at Ruan, died at the age of 78 on September 11, 2021. Beyond his dedication to the Ruan family of companies, he was a strong advocate for the transportation industry and played a significant philanthropic role in Iowa and communities around the country.



> SEALED DEALS

• **Saysh**, a community-centered lifestyle brand for women, is partnering with third-party logistics provider **SCI Group** to fulfill e-commerce orders for its first sneaker, which sold out via preorders. By fulfilling orders out of its Canadian facilities and shipping directly to consumers in the United States, SCI helps Saysh reduce costs through waived or refunded duties.



• **MedZoomer**, an on-demand prescription delivery platform, selected **Delivery Drivers** to help deliver medication from the pharmacy to consumers in less than two hours. Delivery Drivers provides the onboarding, accounting, and risk management services that go into partnering with independent contractors for last-mile deliveries.

• **Tesco**, a U.K.-based grocery retailer, is partnering with **E2open** to replace its legacy transportation management system. E2open will help modernize and streamline supply chain processes from procurement to payment and improve Tesco's stock management, visibility, and transportation execution.

> RECOGNITION

• Technology manufacturer Lenovo awarded **GEODIS** with the **Logistics Excellence Award**. GEODIS played a key role for the company amid the pandemic, ultimately helping Lenovo navigate surging demand and achieve record-breaking sales in 2021.

• The Containerization & Intermodal Institute honored **Eugene D. Seroka**, executive director at the Port of Los Angeles, with the **2021 Connie Award** in recognition of his leadership throughout the pandemic and contributions to containerization, world trade, and transportation.

> UP THE CHAIN

• Port logistics platform **EDRAY** hired **Brett Parker** as its chief commercial officer. Parker brings expertise in final-mile importing, drayage, freight brokerage, less-than-truckload, and full truckload as the co-founder and former president of Cargomatic, a digital logistics brokerage.



• **AutoScheduler.AI** hired **Andrew Gibson** as its chief technology officer to lead the company's software development efforts. Gibson brings 25 years of experience as a leader in warehousing, transportation, and data science with Nestlé.

• **Mars Petcare** appointed **Ruben Cejudo** as vice president of the North American supply chain for its Mars Pet Nutrition North America division. Bringing nearly 30 years of experience, Cejudo most recently served as vice president of supply chain for hair care and deodorants at Unilever.

[IN FOCUS]

TAKEAWAYS

Shaping the Future of the Global Supply Chain



JUICE FLAIR/SHUTTERSTOCK

IDAHO SPROUTS ITS FIRST INTERMODAL TERMINAL

Pocatello, Idaho, recently welcomed the Savage Rail Port of Southern Idaho, the state's first intermodal hub, to the area. The new terminal helps local farmers export their goods to global markets.

Agricultural products, such as hay and produce, are loaded into shipping containers and brought to the rail yard, where a machine stacks them on rail cars to be taken directly to ports for international shipping.

The intermodal hub helps bring farms closer to end-consumers, improving the carbon footprint in the region and decreasing truck and trailer traffic, a benefit that comes with rail transportation.

Savage, a Utah-based supply chain company, leased the 27-acre plot of land from Union Pacific Railroad. Once the terminal is operational, Savage says it will fill the entire 27 acres.

NORTH AMERICAN PORTS RUNNETH OVER

With consumer confidence increasing and economies opening, goods are moving through North American ports at an unprecedented rate, with imports through the ports of Los Angeles and Long Beach swelling 41.1% year over year through the first half of 2021 (see *chart*).

Delays continue. Due to pent-up demand, major ports such as New York/New Jersey and Los Angeles and Long Beach continue to experience delays. The California ports have seen container ships queuing at rates not seen since the 2020 peak season. This is due to the arrival of ships delayed from South China, new trans-Pacific services, and additional loader vessels.

Shipping costs swell. Container shipping costs from China to the U.S. West Coast ports reached a new high of more than \$20,000 per 40-foot container. The increase is partially due to rising COVID-19 cases across the globe, which has slowed container turnaround times.

Robust import volumes. North American ports continued to record robust activity for import cargo volumes, as 13.8 million TEUs were handled year to date mid-year. The surge was fueled by six major ports (Los Angeles, Long Beach, Savannah, Virginia, NY/NJ, and Seattle-Tacoma), each of which exceeded 31% of growth mid-year.

TOP 10 NORTH AMERICAN PORTS (BY VOLUME)

TOP PORTS	H1 2021 TOTAL CONTAINER VOLUME (TEUs)	ANNUAL CHANGE (H1 2020 vs H1 2021)	H1 2021 IMPORT VOLUME	ANNUAL CHANGE (H1 2020 vs H1 2021)
Los Angeles	5,427,875	44.3%	2,834,213	45.3%
Long Beach	4,753,829	38.5%	2,315,171	39.5%
New York/New Jersey	4,395,072	30.6%	2,241,180	31.2%
Savannah	2,740,547	31.0%	1,363,723	37.9%
Vancouver	1,963,048	25.5%	991,453	25.5%
Northwest Seaport Alliance	1,860,174	18.9%	741,851	31.1%
Virginia	1,681,701	32.0%	792,725	34.6%
Houston	1,607,753	12.6%	749,406	31.5%
Charleston	1,335,097	21.8%	609,016	26.7%
Oakland	1,301,781	11.4%	544,642	19.9%

Sources: Cushman & Wakefield Research, New Harbor Consulting, Major NA Ports



UPS Gets the Gig

UPS plans to acquire Roadie, a crowd-sourced, same-day delivery service. This gives UPS access to a “gig” platform and speeds local delivery of in-demand goods, such as fresh food and bulky furniture, items its existing infrastructure cannot accommodate.

Roadie handles shipments that aren't compatible with the UPS network due to their size and perishable nature, often because they're delivered in shopping bags without the packaging required to move through the UPS system, the company says.

After the acquisition, Roadie will continue to operate under its own name. Goods transported by Roadie will not cross into the UPS network and packages transported by UPS will not cross into the Roadie network, UPS says.

TAKEAWAYS

Oregon's Promising Port Project

The International Port of Coos Bay along the Oregon coast isn't a well-known shipping hub, but it's about to get a big upgrade. The port is partnering with a Missouri-based development firm to build a multimodal container facility on the North Spit of the bay.

Once complete, the facility is expected to have the capacity to move more than 1 million 40-foot shipping containers through the port and onto freight trains on the Coos Bay Rail Line. The North Spit rail spur will be expanded to the port facility, where upgrades will allow rail shipping of double-stacked containers.

The project also entails the deepening and widening of the Coos Bay port's designated shipping channel to accommodate larger ships.

With the recent closure of a Georgia-Pacific paper mill and other job reductions in the region, the port says the Coos Bay project could spark an economic rebound in the area.

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TAKEAWAYS

Young Professionals Remain Positive

About 99% of professionals aged 30 and younger say that working in supply chain is a quality career choice, according to a Penske survey, with 58% pursuing a supply chain career due to its beneficial societal impact delivering essential goods during the pandemic. Key findings from the survey reveal:

- **95%** of young professionals express excitement for their development track and training opportunities.
 - **60%** list development opportunities and work environment/co-workers as the top reasons they remain with their current employers.
 - **88%** identify their job as good, 80% feel their job is better than most, and 77% say their work is enjoyable.
- **44%** of respondents indicate a willingness to relocate to advance their careers.
 - **The impact on businesses**, variety of opportunities, and fast pace and challenges are the top reasons young professionals are interested in supply chain careers.
 - **Development opportunities** are the top reason respondents might choose a different employer, followed by salary-benefits increases, graduating school, or finding more interesting work.
 - **Social media**, online job boards, company websites, and word of mouth through professional peers are the top methods young professionals use to search for employment.



A partnership of trust and transparency.

At Syfan, our commitment to shippers remains steadfast and true. The demands of COVID have created a shortage of carriers and tight capacity that have strained partnerships with some shippers – but not Syfan Logistics. Throughout the challenges of the past year, Syfan has not wavered from standing by its customers and continuing to provide drama-free service.

Because when we make a promise, we deliver.



TAKEAWAYS

DASHING THROUGH SOARING HOLIDAY SALES

E-commerce holiday sales will grow 11% to 15% in 2021 versus 2020, says Deloitte's forecast, with e-commerce sales growing 34.8% in November 2020 to January 2021.

E-commerce sales will keep growing as consumers continue to buy online across all categories, the report says.

Deloitte predicts a 7% to 9% increase in overall holiday sales compared to 2020. This increase reflects continued growth: Last year's holiday sales came in higher than expected, growing 5.8% in November 2020 to January 2021.

The forecast projects growth in disposable personal income, which will likely remain steady heading into the season. Ongoing uncertainty spurred by the Delta variant may drive even more spending on goods, the report says.

Uber's One-Stop Trucking Shop

Uber Freight is expanding its on-demand services to include less-than-truckload (LTL) freight, providing shippers with a single platform to support any type of truckload need. As flexibility remains a priority for shippers, LTL is in high demand, becoming one of the most requested features since the platform's inception in 2018, the company says.

The LTL market typically presents challenges with visibility, market constraints, and increased demand. Small and mid-size businesses sometimes have to navigate multiple touch points on antiquated websites, the company says. Uber Freight's service helps ease these challenges, allowing shippers to manage all their freight needs through one portal.

Shippers can also utilize LTL loads as an environmentally friendly shipping option to promote sustainable strategies across their businesses, Uber says.

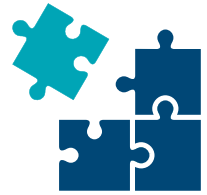
To bring an LTL solution to market quickly and reliably, Uber Freight is leveraging technology infrastructure and LTL expertise from third-party logistics provider BlueGrace Logistics.



An American Tradition in Transportation

IN GOD WE TRUST

Supply Chain Challenge? **SOLVED**



Network Analysis Reveals Supply Chain Optimization Opportunities

A network optimization study with Odyssey Logistics & Technology gave a global manufacturer, which spent more than \$1 billion annually on shipping, the insight to optimize its global supply chain network.

THE CHALLENGE MEASURABLE SUCCESS FOR A GLOBAL MANUFACTURER

A global manufacturer viewed as a powerhouse in its industry, delivering 12,000 different types of materials to 19,000 customers across six continents, determined it was spending more than \$1 billion annually on shipping and a great deal of that spend was wasted.

But simply looking at all of its disparate data didn't provide the insights needed to make the right changes.

The manufacturer turned to Odyssey Logistics & Technology, one of their key operational partners, to conduct a network optimization study.

After creating a digital twin that integrated the manufacturer's most relevant data, Odyssey applied advanced

modeling software to analyze scenarios, identify areas for improvement, and make actionable recommendations. All of this was done remotely during the COVID-19 pandemic, saving the manufacturer at least \$150,000 in travel costs.

THE SOLUTION THE BIG REVEAL—WHAT NETWORK VISIBILITY UNCOVERED

You can't change what you don't know. The manufacturer had production plants on both coasts of the country where it is headquartered, shipping the same products to different regions.

There were no strict processes in place for sourcing customers in different regions, booking shipping costs globally, and managing lead times.

The interactive presentation of the company's data by Odyssey was the defining moment for the manufacturer. Supply chain leaders in the company saw their global inefficiencies through actionable data and scenarios that provided clear opportunities for improvement.

This gave the manufacturer the insight it needed to correct inefficiencies and optimize its global supply chain network.

OUTCOMES

- Actionable, real-time data
- Reduced spend
- Uncovered better processes for:
 - sourcing customers in different regions
 - booking shipping costs globally
 - managing lead times

The manufacturer has the opportunity to save \$60 million and improve operations through its network optimization study with Odyssey Logistics & Technology.

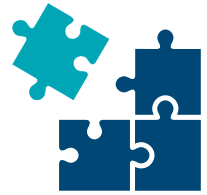
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Supply Chain Challenge?

SOLVED



DAT iQ Optimizes the RFP Process

Analytics from DAT iQ take the uncertainty out of every step of the RFP process.

THE CHALLENGE

Crafting a transportation RFP is a time- and resource-consuming undertaking with high stakes. And while RFPs create contracts between shippers and carriers that are binding in price, they're not binding in volume or capacity, further complicating the matter.

Some shippers simply choose carriers that bid the lowest rates, but this often costs more in the long run. Low contract rates during times of tight capacity can lead to an increase in tender rejections, as carriers look to the spot market for more profitable opportunities.

As recent events have demonstrated, pandemics, wildfires, supply shortages, weather events, and other disruptions create wild market swings. How can the RFP process be optimized to create a routing guide that's predictable and stable?

THE SOLUTION

Accurate and timely analytics from DAT iQ take the uncertainty out of every step of the RFP process—from preparation to evaluation to awarding—allowing shippers to secure capacity at prices that will last the lifespan of the contract.

With a database of more than \$110 billion in annual freight invoices, analytics from DAT iQ allow users to account for seasonal impacts of supply and demand when preparing their RFPs. With 13-month histories on more than 68,000 trucking lanes, shippers using DAT iQ can pinpoint times of tight



capacity, which allows them to prioritize lanes and create clear objectives for your RFP. For lanes with lower volumes, DAT iQ allows shippers to aggregate lanes geographically to make bids and evaluations faster and easier.

For new lanes, DAT iQ provides insights into carrier activity along with detailed pricing histories and forecasts, helping shippers expand their network with clear budget expectations.

During the evaluation phase, shippers with DAT iQ products can be much more prescriptive with their feedback. Rather than simply responding to carriers with a target price, shippers can offer more context to meet service requirements. The Ratecast model from DAT iQ forecasts rates with over 95% accuracy across more than 7 million daily predictions, providing transparency to your negotiations and a single source of truth. This awards freight to the right carriers at prices that will hold throughout the life of the contract.

Once the routing guide is in place, shippers can benchmark performance against the broader market. This allows them to review, analyze, and adjust routing guides, identifying opportunities to reduce costs or anticipating when they're at risk for higher spot market premiums.

With DAT iQ, shippers are able to create a more thoughtful RFP that streamlines the evaluation and award process—creating a routing guide that offers predictability and stability.

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Todd Zegers

**Vice President, ITAD,
Reverse Logistics & Repair
Ingram Micro Commerce &
Lifecycle Services**
todd.zegers@ingrammicro.com

Q How can reverse logistics help provide a balance between profit maximization and sustainability?

A The moment a product reaches its buyer, the job of the forward supply chain is done. Everything after that point, including aftersales service, warranty management, defective repairs, spare parts management, returns bring-back – as well as the associated transportation, liquidation/disposition including recycling, and buyback/exchange management – falls under the purview of reverse logistics (RL).

Many don't realize it, but most of the activities that make a supply chain sustainable and "green" happen in the domain of reverse logistics.

Consider the 5R framework for RL: reduce, reuse, repair, resell, and recycle. If integrated thoroughly within an organizational structure, as returned items are processed through this framework, most products or their components will find a new use (contributing to profits) and there will not be much left to recycle in the end (improving sustainability).

When done right, RL is not a standalone entity. Rather, the activities involved in it are woven into the fabric of an organization's supply chain.

Q What three steps can a company take to have profitability and sustainability processes coexist?

A Step one is to build a sustainability/profitability matrix. This exercise maps RL along two axes: profitability and sustainability. The goal is to move into the

quadrant representing a positive profitability and a low carbon footprint.

Step two is to rethink the business case. Most business cases for RL and sustainability are deeply flawed. They often fail to quantify the value RL brings, including:

- Increasing customer satisfaction and retention;
- Reducing the cost of customer acquisition (through the sale of refurbished products);
- Reducing greenhouse gas (GHG) emissions and consequently increasing share value and brand image;
- The potential for deeper integration with business partners who value sustainability.

In a holistic business case, the importance of RL and sustainability are strategic, and processes are viewed as driving value.

The third step is to rethink the business model and review capabilities. Capabilities should be assessed along four key dimensions: people & KPIs, processes, technology & systems, and data. Assessing these variables enables organizations to drive toward a business model that is not only more profitable, but also sustainable.

Q What's next?

A If companies critically examine legacy business models, follow this three-step process, and leverage the 5R framework, they will arrive at a business model that will be both profitable and sustainable. This is not a radical change. It is a shift in thinking that challenges us to pivot business processes in order to build successful business environments that also reduce the stress on our natural environment.

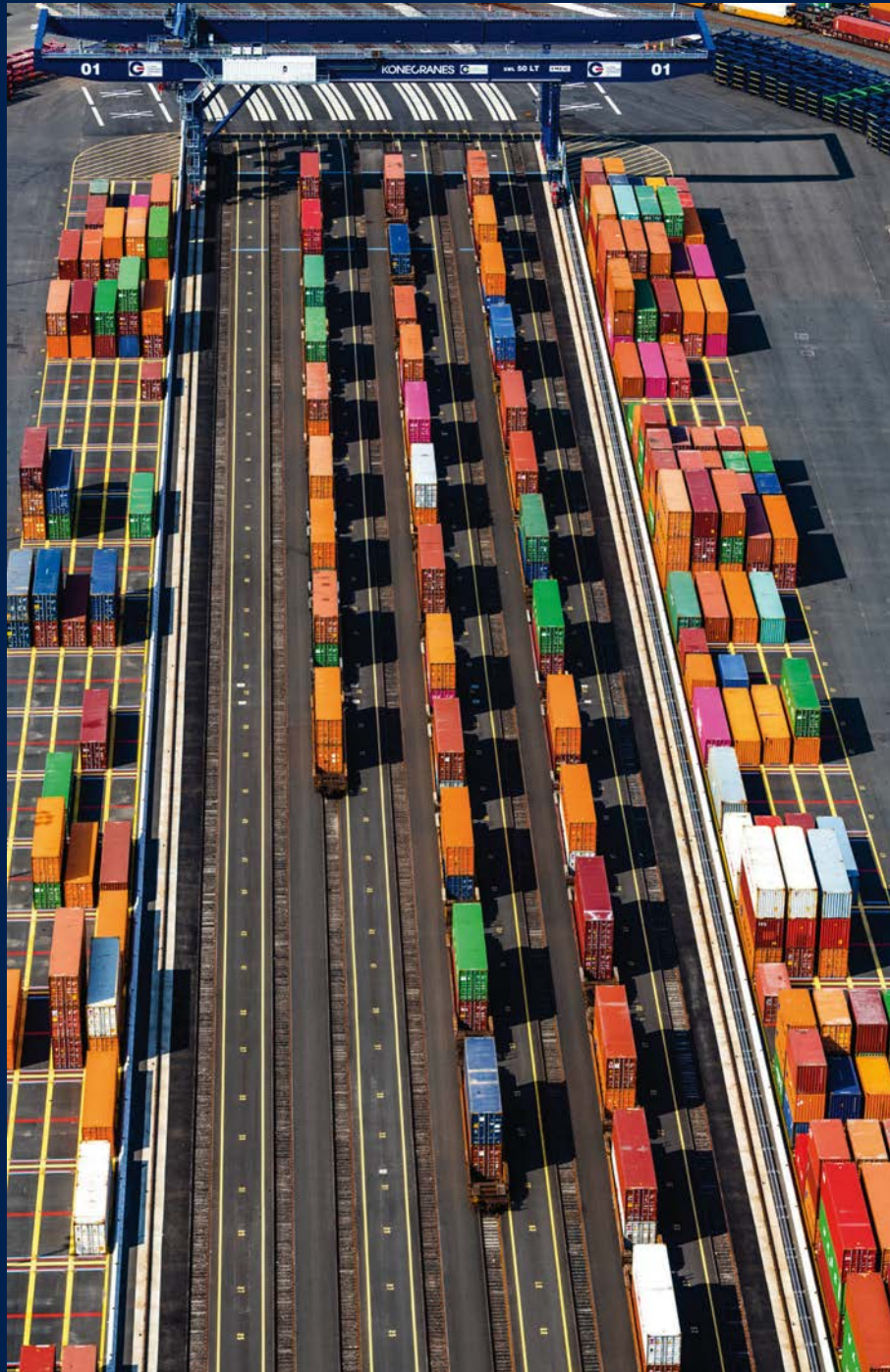


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[INSIGHT]

LEANSUPPLYCHAIN

by Paul A. Myerson

Instructor, Management and Decision Sciences, Monmouth University, and author of books on Lean and the Supply Chain for McGraw-Hill, Pearson, and Productivity Press
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Supply-Side Accuracy and Timeliness in Volatile Times

While improved demand accuracy in your supply chain is critical, it is equally important to have supply-side accuracy and timeliness, especially now. The disruption the pandemic caused for global supply chains is getting worse, creating shortages of consumer products and making it more expensive for companies to ship goods where they're needed.

Today's long and complex supply chains—with their increased uncertainty due to the pandemic, and environmental and other disruptions—has increased the importance of knowing exactly what inventory you have, and where it is, in real time (or as close to it as you can get).

Supply-side accuracy and timeliness refers to the what, where, and when of materials and documents:

What—inventory control, orders, transfers.

Where—physical location...plant, warehouse, in-transit or customer.

When—timeliness of information.

PEOPLE, PROCESS, TECHNOLOGY

Where should you look to measure and improve supply-side accuracy?

On a strategic level, it is helpful to think in terms of “people, process, and technology” when analyzing potential business improvements.

People. Besides identifying, screening, and hiring the best talent, this goes largely to the topic of training once people are onboarded; this pertains to supply chain partners as well. Proper training—and retraining—helps to ensure that staff are correctly taught and understand the company's inventory control practices and procedures.

Training should be a continuous process in your business operations. Providing ongoing professional development opportunities allows staff to refresh their skills, to retrain, or to update their competencies and experience. As the saying goes, “We are only as good as our people.”

Process. Supply chain management, with all its various activities, is the basis of a well-functioning business and requires error-resistant processes. If you don't use best practices such as cycle counting to know how much inventory you have in facilities throughout your

extended supply chain (including what inventory your carriers, suppliers, and your customers have), as well as accurate and timely paper and electronic order and other transactional documents, then you could be in real trouble.

Technology. Inventory and transportation management systems track the lifecycle and movement of stock as it comes and goes out of your business. Today's inventory and transportation management systems make it easier for you to track your inventory throughout the extended supply chain.

This gives the right people access to that inventory and enables you to have an accurate record of inventory movement throughout your supply chain, and get insight from inventory activity and history. Technology such as EDI, barcode scanning, and RFID helps to minimize errors and improve accuracy.

Having real-time inventory visibility up and down the supply chain gives you the additional benefit of anticipating issues before they become a crisis. A number of good cloud-based logistics execution platforms are designed just for this.

By focusing on supply-side accuracy and timeliness, you can cut down on unnecessary excess inventory and outages, and meet demand more precisely in this volatile environment. ■

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[INSIGHT]

CYBERSECURITY

by *Bindu Sundaresan*

Director, AT&T Cybersecurity

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Best Practices to Protect Supply Chains

With the rapid adoption of cloud computing and the Internet of Things (IoT), the supply chain has many new entry points and attack surfaces for cybercriminals to infiltrate. Implementing these best practices help manufacturers continue to innovate, create new products and services, and increase profitability, while maintaining a competitive edge.

1. Establish collaboration and education across the organization.

Security must be built into every process, product, and experience across the supply chain, which is why establishing collaboration between IT and business leaders is a vital first step.

Business leaders need to work with IT leaders to understand that protecting supply chain data is vital to business continuity. This collaboration starts with all business leaders having the knowledge and understanding of potential cyberattack scenarios.

Gone are the days of “this is an IT problem.” It’s every business leader’s problem to solve. With the security challenges of 2020, cybersecurity moved from a technical issue to a business enabler, a shift that will continue to build out this collaboration between IT and business leaders.

There is also growing recognition that IT and Operational Technology (OT) teams must converge in order to determine the balance of priorities between the two and

successfully protect the data that can be exploited on IoT devices. Visibility across all types of connected devices—OT, IT, and IoT devices—is important. Digital transformation and the need for business agility create increasing co-dependence between IT and OT. The main result, from a cybersecurity perspective, is a greatly expanded attack surface.

2. Develop an internal shared responsibility model. Employees, customers, and supply chain partners must understand that their physical and digital assets are all targets for cyberattacks. From there, they can understand their role and shared responsibility to help protect those assets.

A good use case to explain this shared responsibility model is through the roll-out of 5G technologies. 5G is revolutionary, but much like the early days of public cloud adoption, a shared security responsibility model is needed to help identify where the lines and responsibilities are from the network provider to the assets the business puts on the network and owns.

From a similar viewpoint, it’s important to define the lines and ownership between your security team’s responsibilities and those of your employees, partners, and customers, to help reduce the risk of introducing vulnerabilities into your supply chain—especially when connecting new IoT devices. Everyone working together to protect the business ultimately heightens the security of the supply chain as a whole.

3. Implement Zero Trust principles. Adversaries find IoT devices within the manufacturing industry an attractive entry point into the network. The data that can be exploited from one of these devices is extremely sensitive, threatening critical infrastructures along with consumer health and safety.

Companies that have implemented Zero Trust principles have adopted the idea that there is no trust granted to assets based solely on their physical or network location (i.e., local area networks versus the internet) or based on asset ownership—enterprise or personally owned.

Manufacturers implementing the Zero Trust framework can identify supply chain weaknesses across product creation, manufacturing, testing, and delivery—without the need for disruptions that ultimately can halt operations.

Through collaboration, a shared responsibility model, and Zero Trust principles, supply chains will strengthen as security improves. ■

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[INSIGHT]

E-COMMERCE

by *Brenda Stoner*

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Unlock Potential With Buy Anywhere, Deliver Anywhere

E-commerce sales have surged as a result of the pandemic, forever changing the way consumers shop and receive orders. As a result, shoppers demand faster and more convenient delivery options that get their orders in their hands when and where they want them.

Based on shoppers' continuously evolving needs, Buy Anywhere, Deliver Anywhere (BADA) capabilities enable organizations to offer the services that meet these demands, increasing customer satisfaction and the bottom line. This type of last-mile logistics service means that customers can receive their e-commerce order anywhere they would like an order delivered, making fulfillment a crucial part of the overall customer experience.

How do retailers overcome key supply chain challenges that come with offering BADA service?

The pandemic, Suez Canal blockage, tariff issues, and now material shortages, all contribute to the obstacles that retailers have to overcome. Transportation issues exasperate the problem, and the capacity to move available products quickly is not even close to being able to keep up with consumer demand.

There are also hurdles when inventory is local to a market but miles away from the closest sales and distribution center.

Another challenge is delivering big, heavy and high-value items. This is especially true because consumers ordering big and heavy items online not only expect the same delivery experience they get from small packages—fast, convenient and easy to track—but they also require an extra layer of added service such as in-home assembly or installation. Supply chains need an advanced way to respond to consumers' expectations.

BENEFITS OF BADA FULFILLMENT

To overcome these challenges, logistics and supply chain leaders can lean on BADA offerings to provide a best-in-class delivery experience with convenience, control, communication, and consistency.

A BADA model enabled by inventory visibility can track products throughout the supply chain and ensure items are available to fulfill customer orders. By understanding where their inventory is and how they can get it closer to customers, shippers and other business

professionals can position inventory in the most advantageous way to increase same-day sales and drive revenue.

Implementing BADA capabilities successfully requires a real-time view of inventory, especially at the store level where the exact number of items available can be accurately accounted for. A unified platform can provide this information immediately, helping organizations understand which items are available in proximity and how to route orders quickly to the customer. This can be done with a single integration to e-commerce or POS in-store, allowing for a BADA model that can help meet retailers' needs at scale.

Innovative technology helps to meet customers' requirements by providing business intelligence on what consumers are buying and how to get these items closest to their customers for delivery. With these tools, retailers like Target successfully position the right inventory as close as they can get it to each consumer, making fast delivery possible. By optimizing delivery and logistics, supply chains can quickly deliver items anywhere and anytime.

The retailers who figure out how to deliver their whole assortment of goods when and where their customers want it will come out as the real winners. ■



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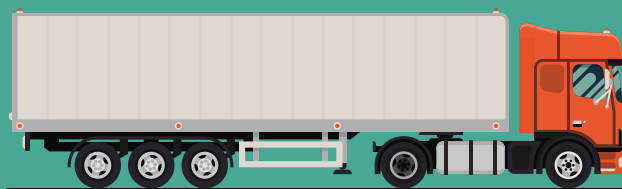
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TRAIN OR TRUCK? OCEAN OR AIR?

CHOOSING THE RIGHT MODE



Here's some practical advice for deciding how to ship your load, in normal and new normal times.

By Merrill Douglas

High-end circuit boards from Asia, critically needed for production in Michigan? Probably an air cargo shipment. Cardboard boxes from New Hampshire that ship to a factory in Colorado week after week? Domestic intermodal should be fine.

Sometimes it's obvious which transportation mode to choose, given the nature and value of a product, the urgency of the shipment, the distance to be covered, and the money you want to spend. But in other cases, there's more than one viable answer to the question of mode. That's when you have to evaluate the tradeoffs and set priorities to make the best choice.

In normal times, when a pandemic hasn't thrown global trade into chaos, shippers start the mode selection process by examining key factors about the shipment.

"The first question to ask is, 'What is the promise to the customer?'" says Frank Dreischarf, vice president of supply chain solutions at R2 Logistics, a third-party logistics (3PL) provider based in Dallas. For instance, if you've promised a customer 2,000 miles away that the shipment will arrive the next day, air is an appropriate solution.

Does the customer expect delivery at a precise time, or within a time window of several days? That could make a difference in mode choice, notes David Broering, president, non-asset logistics at logistics and transportation provider NFI Industries in Camden, New Jersey.

Maybe your promise involves dollars. "Are there economic factors you're trying to meet with respect to the total cost of transportation as part of the delivered cost of the goods that are more important than the delivery time?" Broering asks.

In general, shippers choose rail for overland transportation when cost is more important than speed, and they choose some form of truck when they need fast or time-definite delivery.

Urgency can also help determine what kind of trucking service is best.

"Full truckload is almost always faster than less-than-truckload (LTL)," says Dreischarf. "On shipments longer than

600 miles, team truck is typically faster than single drivers."

Factors beside cost and speed may also come into play. There's also size and weight.

"A 40,000-pound shipment can move either by truckload or intermodal; LTL is no longer an option," says Dreischarf. A 10,000-pound shipment can often go by LTL, but only if the product is dense enough.

"With 10,000 pounds of material that take up 30 feet of truck, LTL isn't viable," he says. But that load might be a candidate for volume LTL, a service that takes advantage of an LTL carrier's underutilized capacity.

A shipper might use intermodal to create rolling inventory, a tactic employed when relieving a crowded warehouse is more important than getting product quickly to another location.

"Companies that ship raw goods—grains, oil, paper—with continuous movement, have flexibility with delivery times, and know there's a decent amount of safety stock in place, can use intermodal to cost advantage, too," says Matthew Witten, director of carrier



Shippers generally choose truck transportation for fast or time-definite deliveries and rail when cost is more important than speed.

procurement at Scottsdale, Arizona-based 3PL GlobalTranz.

On the other hand, when you ship to an e-commerce merchant with a demand-driven supply chain, you need a faster mode. Weather might also play into the decision.

"In winter, intermodal lines sometimes get jammed," Witten says. "You might put a shipment on truckload just to insulate yourself from product arriving late."

International shippers often choose air when fast service is more crucial than cost, and ocean when the opposite is true. But ocean carriers also offer expedited and time-definite services, such as APL Logistics' OceanGuaranteed for less-than-containerload (LCL) shipments.

When considering expedited ocean service, a shipper should examine the details of a route to learn if that service meets the need. For instance, how many ports does the vessel call, and when?

"Where the port sits within a vessel rotation can impact five or six days of transit, which makes a significant difference," says Betsy Ducat, head of retail, North America, at APL Logistics Americas, based in Scottsdale, Arizona.

You also need to understand conditions at the destination port. "In some terminals—take Matson, for example—the flow-through is much more reliable," Ducat says. Cargo

shipped there will get on the road faster than from a more heavily used terminal.

Details like those could determine whether expedited ocean service offers the speed a shipper requires.

RULES FLY OUT THE WINDOW

Unfortunately, in today's transportation market, rules of thumb don't apply. Port closures in Asia, congestion in destination ports and rail terminals, labor shortages, tight truck and rail capacity, and soaring freight rates have narrowed shippers' options and changed the math behind mode selection.

"Traditional mode choice has been thrown out the window," says Craig Callahan, chief commercial officer at Werner Enterprises, a transportation and logistics company based in Omaha.

"It's about getting the capacity, understanding that your transit times are going to be extended regardless of mode of transport," says Ryan Carter, vice president, Americas operations at AIT Worldwide Logistics in Itasca, Illinois. "It's also understanding that your supply chain expenses are increasing exponentially."

For example, if you ship low-end goods from overseas today, with no urgent time constraints, you would probably still choose ocean transport. "But you may be willing to pay \$25,000

on an ocean vessel that historically was \$5,000," Carter says.

Widespread congestion has not only slowed most modes but also made them less predictable, says Broering. For instance, an intermodal shipment from the Port of Los Angeles to Philadelphia might sit in LA for a few days before it's loaded on the rails; then spend three to five days in Chicago waiting to be transferred to another train; and then sit a few more days in the rail yard in Philadelphia waiting for a dray carrier.

"The only mode that has not changed is truckload," Broering says. "Can you get a truck to come in and pick up the load? That's a question. It's based on rate, relationships, and other factors. But COVID has not materially affected the actual transit time."

For companies importing into the United States, another strike against intermodal rail is the fact that many steamship lines today terminate shipments at the ocean ports, rather than put containers on the rail to inland terminals. That's because the lines want to move those containers back to Asia as fast as possible, to accommodate high-ticket eastbound freight.

Given that obstacle, many importers transload cargo from ocean containers to truck trailers. "We also convert some of those transloads from what was sea freight into the United States to air freight, and then fly it across the country, depending on when the customer needs the products in the distribution center or to the final customer," says Carter.

One key to mode selection in this difficult market is to ask how crucial a shipment is. "For instance, will the shipment shut down a line?" says Dreischarf. "Is it a must-have or a nice-to-have?" Performing triage on shipments can reveal the best options.

"A customer often says, 'This shipment absolutely has to go,' until you put a price to it," Dreischarf says. "You find out quickly that what was an absolutely must-go situation becomes a 'Yeah, go ahead and ship it by ocean.'"

Still, customers with service promises to keep or production lines to feed may



Offerings such as APL's OceanGuaranteed, which provides day-definite guaranteed container service from Asia and Europe to North America, make ocean a viable option for expedited shipments.

The pandemic left shippers clamoring for cost-effective intermodal services.



have no choice but to pay more for a faster mode. “Money is still an object,” Dreischarf says. “But surety of supply is much more important now than lowest cost.”

One particularly interesting pair of tradeoffs in mode decisions today involves consumer values. Some APL Logistics customers generally eschew air freight, given the commitments they have made to environmental sustainability. Consumers care about those commitments. But consumers also want quick access to products, especially toward the end of the year.

“Everyone wants to make sure the holiday merchandise is getting in, and retailers that would traditionally not consider air freight are now considering it,” Ducat says.

INNOVATIONS FOR TOUGH TIMES

To keep freight moving in this challenging era, shippers and their service providers have developed a variety of creative mode-related solutions. Some of those involve replacing a single mode with multi-mode transportation.

APL Logistics has explored the use of sea-to-air services, using an ocean vessel to transport cargo a short distance to a major city and then transferring the shipment to an aircraft. This tactic moves the freight to a market with more airfreight options.

“Out of certain locations, this can be economically viable, compared to a 100% air freight play,” says Ducat.

In other cases, shippers may answer COVID-induced challenges with a counterintuitive mode choice. AIT sometimes finds a good alternative in China’s Silk Road rail service from Asia to Europe. “Many traditional supply chains don’t consider that as an option, because there may be a negative connotation to rail with regard to speed,” says Carter.

But when Chinese cargo airlines cancel flights due to COVID outbreaks, and as shippers face heavy congestion in ocean ports, that rail route could become a good choice, he says.

Or a carrier might apply a special strategy to speed up a one-mode

THE INTERMODAL OPTION: EASIER SAID THAN DONE

“It has never been more economically attractive to move freight on the rail if you can find the capacity,” says Craig Callahan, chief commercial officer at Werner Enterprises. Shippers have always viewed intermodal as a low-cost alternative to truck transportation. In an era of soaring truck rates, intermodal looks especially attractive.

But booking intermodal transportation is easier said than done. Like other modes in the COVID-19 era, rail has seen demand for service outpace supply and has also suffered from congestion on its networks.

Some observers blame Precision Scheduled Railroading (PSR), a strategy the Class I railroads have implemented in recent years. PSR seeks to improve service by operating fewer, longer trains on defined schedules. Instead, PSR has reduced the quality of intermodal service.

“Many intermodal yards have closed across the country,” says Frank Dreischarf, vice president of supply chain solutions at R2 Logistics. “Some railroads have stopped offering intermodal into certain markets.”

Not only have railroads reduced total bandwidth on their networks but, like companies in many industries, they’re struggling for labor, says David Broering, president, non-asset logistics at NFI Industries.

Of course, the railroads could not foresee how a pandemic and its economic fallout would leave shippers clamoring for access to cost-effective intermodal services. But now that the crisis is here, carriers have responded in recent months by reactivating some closed facilities.

For instance, in August 2021, the BNSF Railway reopened its Harvard Intermodal Facility in Marion, Arkansas, to expand capacity in the Memphis region. At around the same time, Norfolk Southern reopened its intermodal facility in Greencastle, Pennsylvania, closed since 2019, to help ease supply chain congestion.

Railroads have also added new facilities and services. Callahan points to the Twin Cities Intermodal Terminal, which Union Pacific opened in 2020 to support direct service between Minneapolis-St. Paul and Los Angeles. “The railroads are trying to make investments where they see traditional gaps in intermodal service offerings, and there’s also a large consumption area, either inbound or outbound,” he says.

Some shippers are also finding new uses for intermodal, for instance as an alternative to less-than-truckload (LTL) shipping for smaller loads. “Some intermodal providers look at potentially creating an LTL solution through the railroads,” says Matthew Witten, director of carrier procurement at third-party logistics provider GlobalTranz.

solution. Werner takes this approach at the U.S.-Mexico border, where a trade imbalance—with more northbound traffic than southbound—makes it hard to find enough equipment to take freight into the United States.

“We have a transload center in Laredo, Texas, so we can bring more freight to the border than we can handle with our own fleet,” says Callahan. Werner unloads the incoming trailer—freeing it to return to Mexico for more freight—and puts the shipment on another truck, owned by Werner or another company.

“That allows us to be more flexible and versatile,” he adds.

LOADER VESSELS ADD CAPACITY

To find more capacity for ocean shipments, AIT has taken advantage of extra loader vessels—smaller containerhips that steamship lines add to their rotations to alleviate the cargo backlog.

“The megaships may take 12,000 or 14,000 containers,” says Carter. “Now we can go to vessel operators that may have a 4,000-container capacity or less and contract them to run special services, maybe into Oakland instead of Long Beach or Los Angeles.” AIT might prepay to reserve space on some of those ships, or it might charter an entire vessel.

Some shippers split their shipments between modes. For instance, a large



Moving freight via rail is a cost-effective option, if capacity is available. Here, a crane loads a refrigerated truck trailer onto a flat car at a BNSF intermodal facility.

beverage company might move its fastest-selling items by truck while putting product that's less in demand on the rail. A small company with an occasional large shipment might divide things in a different way. “They might split that truckload into three LTL parts to get it moved if they're struggling to find a truckload carrier,” says Broering.

Some importers daunted by congestion at ocean ports are tempted to switch not the mode but the route—for instance, skipping Los Angeles and Long Beach for a port in the Pacific Northwest.

That might be a good solution, but only if the smaller port offers the right facilities. “Is there proper warehousing infrastructure if you need to transload your merchandise? Are there proper

options to expedite?” asks Ducat. “You have to consider everything, end to end.”

Companies trying to keep product moving in the face of high freight rates in all modes can take advantage of various options for mitigating costs. “Most revolve around building inherent flexibility throughout your supply chain,” says Dreischarf.

The first step a company should take is to honor the needs of its transportation partners—for example, by not taking six or seven hours to load or unload a truck. “Time is money to those folks, and that will be factored into the price of your freight,” Dreischarf says.

When you suddenly need team drivers rather than a single driver to fulfill a commitment, if you've made yourself a shipper of choice, you'll probably pay less for that service upgrade than if you're a less desirable shipper.

For shippers with special needs, such as just-in-time manufacturing, Werner sometimes provides custom-engineered situations to get better performance from the chosen mode. One example uses a Pony Express hand-off model.

“You design a network that relays the shipment from Point A to Point B through a series of relays that look a lot like truck, with a single driver, but execute more like expedited,” Callahan says. “It offers a good alternative to traditional team service.”

With no end to the shipping capacity crisis on the visible horizon, alternatives, flexibility, and innovative thinking are vital, whatever modes shippers employ. ■



Widespread congestion at U.S. ports has slowed most modes and made them less predictable, driving shippers to consider switching not only modes but also routes.



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BRIGHT SPOTS

from Coast to Coast

To address the multiple challenges of rising container volume, larger ships, and the need for more sustainable operations, many ports are embarking on substantial capital improvement projects. Here's what's on deck.

By Karen Kroll

It has been a tumultuous time for many ports. Between mid-2020 and mid-2021, the volume of twenty-foot equivalent units (TEUs) handled at North American ports jumped 29%, says Jason Price, director, research, with real estate firm Cushman & Wakefield.

Even when comparing the first half of 2021 to the second half of 2019—the last six-month period before COVID shuttered most economies—port volume rose by 13.4%.

Along with fluctuating cargo volumes, many ports must accommodate ever-larger container ships. Between about 2008 and 2018, both the average and maximum size of container ships doubled, the International Transport Forum reports. The largest container ships now boast carrying capacities of about 20,000 TEUs.

These changes have contributed to delays at some ports. As of mid-September 2021, for instance, a record 56 ships were waiting to berth off the coast of California.

Even as volumes rise and ships get bigger, a growing number of ports—particularly those on the U.S. West Coast—are focused on identifying cleaner fuels and reducing carbon emissions from their operations, says Matt Godden, president and chief executive officer with Centerline Logistics in Seattle.

“The pandemic, e-commerce, bigger ships, and shifts in shipping are all prompting major changes,” says Jeff Massengill, PE, ports and maritime director with HDR Inc., a design and engineering firm. Global climate change and greening initiatives also are prompting port leaders to plan for a more sustainable future.

To address the multiple challenges of rising container volumes, larger ships, and the need for more sustainable operations, many ports are embarking on substantial capital improvement projects. Here are just a few.



NORTHWEST SEAPORT ALLIANCE A GREEN LIGHT

The fifth-largest container gateway in North America, the Northwest Seaport Alliance (NWSA) manages container, breakbulk, auto, and some bulk terminals in Seattle and Tacoma, Washington.

The NWSA has had a busy few years. In 2019, it opened the Husky Terminal in the Tacoma Harbor. With eight super-post-Panamax cranes and other pier reconfiguration projects, the terminal can serve two 18,000-TEU container ships.

Additionally, the completion of Lot F, an off-terminal entry gate and truck queuing area for Husky Terminal, adds lanes

and RFID reader technology for trucks. This “helps to reduce street congestion and improve overall terminal efficiency,” says spokesperson Melanie Stambaugh.

Together with its private partners, the NWSA has committed more than \$500 million to modernize Terminal 5 in Seattle, Stambaugh says. When complete, the modernized terminal will feature 185 acres of terminal capacity, on-dock rail, and 1,500 reefer plugs, among other features.

The NWSA also is adding shore power and other green technologies. The modernization of Terminal 5, for instance, includes installing shore power infrastructure, which allows a vessel to plug into electricity while at berth, cutting air emissions.

“By equipping our terminals to handle ultra-large container ships, cargo movement can increase while we reduce the impact to the surrounding Puget Sound habitat,” Stambaugh adds.





PORT OF LONG BEACH BIG SHIP READY

The Middle Harbor Terminal Redevelopment Project at the Port of Long Beach in California is a 10-year, \$1.49-billion construction program. It combines two aging shipping terminals into one advanced, green container terminal.

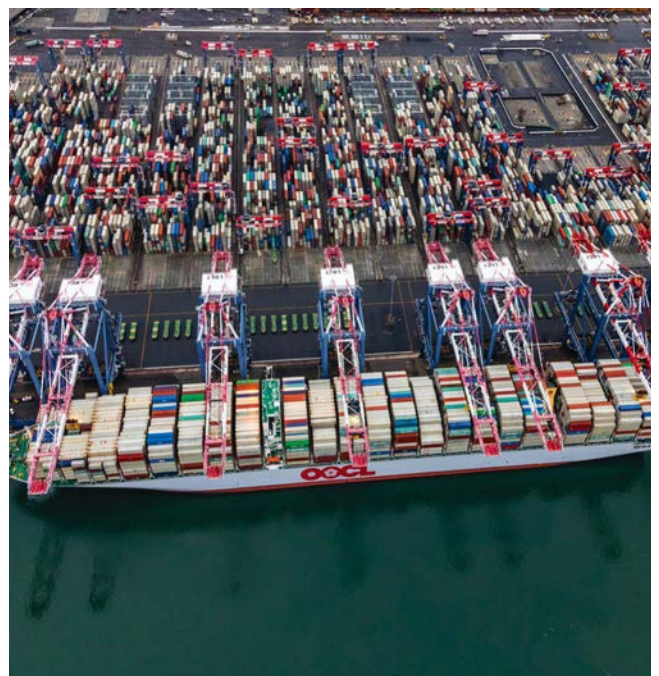
The new Long Beach Container Terminal was completed in summer 2021 and boasts an annual capacity of 3.3 million TEUs. With 14 ship-to-shore gantry cranes, the terminal can welcome three ships at once. The port is “big-ship ready,” says Rick Cameron, deputy executive director, and can accommodate 22,000-TEU ships.

In addition, the new terminal’s on-dock rail yard is designed to handle 1.1 million TEUs annually. This will help reduce truck traffic.

The rail yard enhancement at Pier B, a \$870-million project, will expand rail capacity and help streamline on-dock rail operations in the terminals. “We’re committed to providing the infrastructure needed to continue ensuring the gateway is cost-effective,” Cameron says.

At the same time, the port strives to remain a friend of the community, and meet its environmental goals. For instance, with its electric-powered cargo-handling equipment, the Middle Harbor terminal is one of the world’s cleanest, Cameron says.

The updated, 4,200-foot-long wharf offers shoreside electricity that ships can use while berthed, enabling them to shut down their diesel engines and cut emissions. The goal is to balance commerce with safeguarding the environment. While not easy, “we’re making sure we’re doing the things we need to,” Cameron says.



PORT OF GULFPORT A BLUE ECONOMY

The Port of Gulfport Restoration Program (PGRP), initiated after Hurricane Katrina in 2005 and completed in 2019, doubled the footprint at the Port of Gulfport to nearly 300 acres, says spokesperson Kimberly Aguillard. It also added new tenant facilities, and a 300,000-square-foot warehouse for dry and chilled storage, with blast freezer storage capacity. Three ship-to-shore gantry cranes were added as well.

In February 2020, the U.S. Department of Transportation’s Maritime Administration awarded the port, located on Mississippi’s Gulf Coast, a grant of \$15.7 million for the Port of Gulfport Access Project, which will improve the roadway infrastructure that feeds into the port and enhance intermodal connectivity, boosting efficiency. The project also includes a bridge over U.S. Highway 90, and implementation of an Intelligent Transportation System (ITS).

Through a partnership with the University of Southern Mississippi, the port has developed a roadmap that will build new capacity for Mississippi’s Blue Economy. (“Blue economy” refers to the sustainable use of ocean resources for economic growth, including maritime transport, improved livelihoods, and the health of the ocean ecosystem.) This includes a \$30 million investment to construct the Roger F. Wicker Center for Ocean Enterprise, which broke ground in November 2019, Aguillard says.

The Center will facilitate investments in high-end engineering and advanced technology development. It’s expected to be complete in April 2022.

THE MISSISSIPPI STATE PORT
AUTHORITY HAS ENTERED INTO A
LEASE AGREEMENT WITH OCEAN
AERO INC. TO CONSTRUCT, TEST,
AND DEMONSTRATE AUTONOMOUS
UNDERWATER AND SURFACE
VEHICLES AT THE PORT OF GULFPORT.



PORT MANATEE

SUPPORTING FUTURE GROWTH NEEDS

Port Manatee, a deepwater seaport located at the entrance to Tampa Bay, “is positioning itself to become a home port for a small Asian container service within the next two years,” says Charles D. Tillotson, chief commercial officer. The ideal service would require a quick connection to the U.S. Florida and I-75 and I-95 corridor markets, particularly a container service that continues to the U.S. Gulf, to ports like Houston or New Orleans, or transships to and from Mexico, he adds.

To that end, the port is building a container yard and gate infrastructure capacity to support future terminal and gate growth needs, with a vision of capturing a third container carrier in the expanded container yard, says Carlos Buqueras, executive director.

Port Manatee also is completing Phase II of its container yard expansion, adding 9.3 acres to the existing 10-acre facility, representing a \$13-million investment. The container yard expansion project adds contiguous acreage of storage space to the 40-foot deepwater berths and facilitates higher production to load and unload container vessels, Tillotson says.

Expansion of the port’s north gate will increase outbound lanes from two to four. The project also includes a technology upgrade, including the implementation of state-of-the-art badge readers for port-issued and TWIC (transportation worker identification card) badges.

“This project upgrade improves the port’s security stature for ingress and egress while simultaneously easing turn-times for our customers’ trucking partners,” Tillotson says.

PORT MANATEE RECEIVED A FEDERAL GRANT TO BOLSTER PROTECTION AGAINST CYBERTHREATS AND UPGRADE ITS WIRELESS SECURITY NETWORK.

PORT OF MONTREAL

OPTIMIZING AND EXPANDING

Over the past 10 years, cargo volume at the Port of Montreal, located on the St. Lawrence River, has increased by about 15%. That includes a jump in trade with Asia, from about 3% of traffic in 2008 to close to 30% of container volume at the port today, says Mélanie Nadeau, vice president, public affairs and community relations.

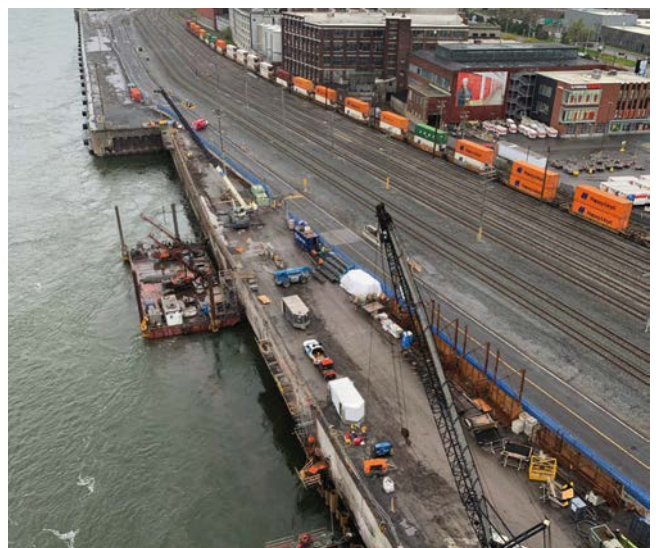
“With two-thirds of Canada’s population located in Quebec and Ontario, BCOs (beneficial cargo owners) quickly realized the benefit and advantages of using the Port of Montreal for trade with Asia, and they continue to include and grow the Montreal portion in their strategies,” Nadeau says.

A number of improvements enable the port to handle this growth. In December 2020, the Port of Montreal completed construction on the Viau Container Terminal. This boosted the port’s container-handling capacity by 350,000 TEUs. The project also included the installation of two gantry cranes, with heights of 95.5 meters each (about 104 yards).

The port also is optimizing facilities at the Bickerdike Terminal, which was built in 1896. Improvements include redeveloping truck access, repairing the railway network, and upgrading electrical capacity.

Also underway is the largest expansion project in the Port of Montreal’s history—the expansion in Contrecoeur, about 45 kilometers (28 miles) northeast of Montreal. “We are developing a container terminal there that will eventually have a capacity of 1.15 million TEU containers,” Nadeau says.

Among other features, the terminal will include two berths, a container-handling area, and an intermodal marshalling yard connected to the main rail network. Work is expected to conclude in 2025.





SOUTH CAROLINA PORTS AUTHORITY GOING DEEP

As of mid-2021, the East Coast ports' share of imports hit a record 45%, according to Cushman & Wakefield's North American Ports Report, Mid-Year 2021.

In recent years, leadership at South Carolina Ports Authority, which owns and operates the Port of Charleston, Port of Georgetown, Inland Port Greer, and Inland Port Dillon, has invested more than \$2 billion to enhance capacity and handle the influx of retail goods and cargo volumes, says Liz Crumley, communications manager.

For instance, the launch of operations at Hugh K. Leatherman Terminal in March 2021 marked the first greenfield port container terminal in the United States in more than a decade. Phase 1 of Leatherman Terminal, a \$1-billion investment, added 700,000 TEUs of capacity and a 1,400-foot berth to the Port of Charleston and the East Coast port market.

The terminal can handle 20,000-TEU vessels and boasts five ship-to-shore cranes with 169 feet of lift-height above the wharf deck, as well as 25 hybrid rubber-tired gantry cranes. At full buildout, the three-berth terminal's annual throughput capacity will hit 2.4 million TEUs.

Work also continues on modernizing Wando Welch Terminal, also at the Port of Charleston, so it can handle record cargo volumes and mega container ships. The full renovation will yield 15 ship-to-shore cranes with 155 feet of lift height above the wharf deck, 65 rubber-tired gantry cranes, and a more efficient terminal, among other features.

The Charleston Harbor Deepening Project is on track to hit a depth of 52 feet by 2022. This will make it the deepest port on the East Coast.

**IMPORT VOLUMES CONTINUE TO
SET RECORDS DURING THE PANDEMIC.
SC PORTS HANDLED 114,671 IMPORT
CONTAINERS IN AUGUST 2021, UP
18% YEAR-OVER-YEAR.**

LOOKING AHEAD

Even as cargo volumes stabilize somewhat, many ports will continue to confront challenges. A key one is adapting to a changing climate. "We're beginning to see more emphasis on planning for future sea level rises," Massengill says. Given that ports depend on waterborne traffic, many are beginning to assess these risks and adopt mitigation measures, he adds.

The bipartisan federal infrastructure bill, as outlined in July 2021, included about \$17 billion for port infrastructure. If approved, it will direct significant funds to projects that include consideration for sea level rise, sustainability, zero emissions technology, and benefits to disadvantaged communities. "This could be a key opportunity for many ports to make needed upgrades and modernization efforts," Massengill says. ■

THE INLAND PORTS ALTERNATIVE

The terms "inland port" or "dry port" may seem like oxymorons. Don't ports, by their nature, need to be near water?

Not exactly. Inland or dry ports refer to the rail infrastructure from a seaport to an inland location, with a goal of relieving port congestion, says Michelle Comerford, project director, and industrial and supply chain practice leader with Biggins Lacy Shapiro & Company, a location economics consulting firm. The idea is to "remove the bottleneck at the water's edge," she adds. As a result, inland ports can be located miles from any body of water.

As container traffic has swelled, finding road networks to get products in and out of ports has become increasingly challenging, Comerford says. In addition, the land near seaports tends to be both limited and costly.

Inland ports allow shippers to access the services of a port without being right next to it. Inland ports also allow companies to locate their products closer to their markets, Comerford says.

For example, Inland Port Greer, which is owned and operated by the South Carolina Ports Authority, extends the Port of Charleston's reach 212 miles inland via rail. About 95 million consumers are within a day's truck trip of the facility.

Inland ports are used around the world, says Jean-Paul Rodrigue, a professor in the department of global studies and geography at Hofstra University. "They make complete sense," he says. "When people can build one, they do."

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3PLs DRIVE LOGISTICS IT SOLUTIONS

MASSIVE SHIFTS IN CONSUMER EXPECTATIONS AND E-COMMERCE ACCELERATION SIGNAL A NEW DIRECTION AND NEW CHALLENGES. SHIPPERS ARE TURNING TO 3PLs' TECHNOLOGY EXPERTISE TO MEET SERVICE EXPECTATIONS IN AN EVER-CHANGING MARKETPLACE.

Until recently, technology enablers and the applications themselves defined the market for logistics information technology. That's changing, as an "explosion of expectations" regarding supply chain visibility, agility, and other capabilities are impacting logistics information solutions, says Steve Ostendorf, senior manager with Deloitte Consulting.

The result? In addition to more familiar applications, like warehouse and transportation management systems and visibility tools, the logistics information universe now includes cloud technology and advanced software development and integration tools. "Exciting developments in blockchain, machine learning, and data science in general place these technologies squarely within the logistics space," Ostendorf says.



Along with the technology shifts occurring, shippers' reasons for implementing logistics solutions continue to evolve. Behind many changes is the disruptive nature of companies like Uber and particularly Amazon, with its "game-changing delivery options" and ability to use data to enhance customer experiences, says Sean Maharaj, supply chain expert and managing director with AArete, a management consultancy.

Many shippers today are deploying logistics information technology solutions to improve operating efficiency and supply chain visibility, says Bob Gormas, vice president, managed solutions, with MGN Logistics, Inc., a provider of managed transportation solutions.

Given carrier capacity constraints across all shipping modes, increased fuel surcharges, and new carrier accessorial fees, shippers are finding it essential to leverage technology solutions that provide the insight they need to better manage every facet of their supply chain.

In addition, the growth in e-commerce during the pandemic made it more difficult for shippers to efficiently manage inventory and meet customer demand. "Cost increases at every level of the supply chain have only amplified the challenges shippers face," Gormas adds.

CHALLENGES SHIFT INTO OVERDRIVE

Indeed, the top four challenges identified by shippers responding to the *Inbound Logistics* 2021 3PL Market Research Report are: managing transportation costs, finding and retaining qualified labor, and managing e-commerce transactions and inventory.

The growth in e-commerce and direct-to-consumer (DTC) delivery is increasing the volume of shipments at many consumer products companies, says Scott Shaw, senior consultant and supply chain industry lead with Clarkston Consulting. Instead of shipping a single truckload of product to a retailer, many companies now ship the equivalent of a truckload, but divided



Based in Easton, Pennsylvania, the MGN Logistics team provides technology tools to help shippers align logistics processes and costs with their most critical business objectives.

into individual shipments and headed to multiple consumers' homes.

"This requires more precise inventory visibility within your warehouse, more efficient pick/pack/ship processes, more frequent carrier pickups, and visibility of the shipment up to the time the consumer receives it," Shaw says.

Solutions like warehouse management systems (WMS), transportation management systems (TMS), robotics, and business intelligence tools, which can improve the planning and execution of physical logistics and provide end-to-end visibility, enable companies to succeed in DTC markets.

TURNING TO 3PLs

As shippers strive to succeed in a changing, competitive world, many rely on their third-party logistics (3PL) providers and the technical solutions they offer. Nearly three-quarters (73%) of shippers responding to the *Inbound Logistics* report state they purchase logistics technology solutions such as TMS and WMS from their third-party logistics providers.

Along with boosting the technology they deploy with their shipping clients, 3PLs are increasing the levels of automation within their own facilities, says Cal Petty, vice president, supply chain consulting services, with Tompkins Solutions, a subsidiary of Tompkins International.

As labor supply shortages compel 3PLs to get more creative in the way they operate, while rising labor costs compel

them, either independently or in conjunction with their clients, to look for ways to reduce costs, many use robots to efficiently perform a range of tasks.

In addition, autonomous and sorting robot technologies and integrations have matured, leading to an increasing number of proven business cases. "This has dramatically increased the interest and adoption of these solutions within the 3PL market," notes Petty.

REVVING UP VISIBILITY AND TRACEABILITY

As logistics technology continues to advance, it's producing solutions that are able to deliver greater visibility and control. For instance, the Internet of Things (IoT) allows for the reporting and monitoring of storage conditions. Artificial intelligence and robotics enable autonomous warehouse storage and retrieval solutions.

"Pairing IoT, artificial intelligence, and mobile and cloud computing allows traceability of individual shipments even as trucks carry them across the country," Shaw says.

While they currently attract a fair amount of attention, blockchain and drones remain "in their early phases," says Evan Armstrong, president of research firm Armstrong & Associates.

Logistics providers will continue to monitor and incorporate new technology as it makes sense for their operations and their clients. As they do, they'll continue to provide value and meet shippers' needs.



MGN LOGISTICS: EMPOWERING SHIPPERS

MGN Logistics, based in Easton, Pennsylvania, is a pioneer in transportation management and logistics. Its sophisticated, cloud-based transportation management system (TMS) offers “robust reporting that empowers shippers, offering them actionable business intelligence to enhance planning, improve processes, and reduce costs,” says Bob Gormas, vice president, managed solutions. For several years, *Inc.* has recognized MGN Logistics as one of the fastest-growing private companies in the United States.

Along with its traditional transportation management solution, MGN continues to invest in technology. Its Managed Transportation Solution (MTS), the product of more than 15 years of insight and experience, provides shippers complete transparency into their transportation spend.

The software also delivers, in a single portal, real-time tracking of every shipment throughout the supply chain, as well as key performance indicators (KPIs) and forecast trends. “Savvy shippers understand that data intelligence, like that provided by MGN, allows for critical decision-making,” Gormas says.

And by leveraging MGN’s expertise in international logistics, shippers can seamlessly integrate their domestic and global shipping transactions, he adds.

As important, the investment MGN Logistics has made in its transportation technology has simplified implementations. “Our highly secure, cloud-based system eliminates high-cost, on-site software installations,” Gormas says.

Instead, MGN partners with clients to understand their transportation challenges and ensure the solution is operational upon completion of the carriers’ electronic integration.

Moreover, while shippers sometimes assume deploying sophisticated technology must be costly and time-consuming, the cloud-based systems offered by MGN Logistics “allow for simplified,

GETTING IT RIGHT

Whether logistics providers implement technology for their customers, or shippers do it themselves, several steps can ensure the solutions they’ve chosen will help them meet their goals.

A first step—even before considering various solutions—is to identify your needs, “Where are the gaps? And how can technology help you meet the gaps?” says Anna Reinke, president and CEO of the Transportation Intermediaries Association. Because many solutions are customized, testing and training are also key.

Any technology should be thoughtfully chosen. Many shippers are looking for easily deployable, managed transportation solutions that provide simplified data reporting, while also empowering them to quickly understand each of their business elements.

Communication remains “the cornerstone to successful implementations,” says Bob Gormas of MGN Logistics, Inc. All involved need to understand their roles, needs, and expectations.

cost-effective, secure engagements,” Gormas says.

Because MGN’s solutions are scalable and customizable, they can benefit all sizes and types of shippers. MGN’s transportation services include less-than-truckload (LTL), truckload, parcel, intermodal to rail, and international air and ocean freight.

FUELING PARCEL SPEND INSIGHT

A key component of MGN’s recent growth has been parcel invoice auditing and management. Through its acquisition of a leading parcel software company, MGN seamlessly provides small package shippers with robust reporting visibility and insight into their parcel spend.

Additionally, their parcel auditing prevents overspend and helps ensure carrier accountability on service guarantees.

Along with state-of-the-art technology, “shippers are looking for an expert partner that is engaged directly in helping them optimize their day-to-day transportation decision-making,” Gormas says.

MGN’s tactical operations team understands each client’s needs and actively works to ensure their ongoing success. In addition, MGN continuously collaborates with its clients to help them proactively manage potential operational

challenges stemming from acquisitions, distribution and commodity changes, seasonal adjustments, and other changes.

MGN recently partnered with a private equity group that needed to improve its transportation management function, as frequent acquisitions of new companies had increased transportation spending across its portfolio. “The challenge was to gain laser-focused visibility and leverage the combined spend to reduce costs,” Gormas says.

A comprehensive analysis of each company’s shipping operation helped the group restructure its carrier utilization and leverage volumetric spend, Gormas says.

The result? Contract optimization for LTL and truckload shipments netted savings of more than \$900,000 across the firm. Parcel spending was cut by more than 15%, saving another \$1.6 million. A 10% drop in international shipping costs saved another additional \$990,000.

In addition, administrative time spent on transportation activities declined, even as visibility increased. And because these improvements are scalable, new acquisitions can be seamlessly integrated into the processes, Gormas says.

MGN Logistics offers the expertise, partnership, and solutions that enable its customers to optimize logistics costs and service and excel in an ever-changing marketplace. ■



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GEORGIA PORTS AUTHORITY



Construction continues on the Mason Mega Rail project at the GPA's Garden City Terminal. When complete, the new facility will double rail lift capacity at the Port of Savannah.

**From access to ports
and infrastructure,
readily available workers,
and proximity to millions
of consumers, logistics
sites deliver and build on
advantages. Here's how
organizations support
their continued success.**

As everyone in the business of manufacturing or distributing products knows, the “perfect” site for logistics purposes—whether manufacturing, warehousing, or distribution facilities—depends on the company asking the question. That said, the logistics landscape in the United States is rich with locations featuring assets that are ideally suited for moving products from Point A to Point Z.

Determining which of those points on the map is best for a specific company requires careful analysis and study of the organization’s needs. Here is a good place to begin: “Think about where your customers are.”

That’s one key piece of advice from Donnie F. Williams, Jr., PhD, executive director of the Supply Chain Management Research Center (SCMRC), part of the Sam M. Walton College of Business at the University of Arkansas.

The professor’s advice seems simple and straightforward enough, but some mistakenly may believe customer proximity has become less important in a technological age where everyone is everywhere—virtually, at least.

However, the essentials of what constitutes a great logistics site today are the same as they always have been,

Williams says. While technology has changed some of the dynamics of the delivery relationship, the emergence of e-commerce has only increased the need for producers to be as close as possible to their end customers in order to meet demands for accelerated delivery times.

“You want to be as close to your customers as you can be,” he says, whether those customers are manufacturing plants, retail stores, or consumers’ homes.

CORE STRENGTHS

In addition to customer proximity, Williams and his colleagues at the SCMRC also emphasize the traditional importance of agility, infrastructure access, supportive government policies and services, and availability of workforce talent in the recipe for logistics site-selection success.

“Many elements determine why supply chain clusters develop in some places and not others,” writes Ronald Gordon, PhD, in a paper for the SCMRC. “Geography, government policy, and education all factor into the equation. But it also helps to have a bit of luck—the sort of luck that brings risk-taking visionaries together in the same place at the same time.”

That happy confluence of spirit and resources occurred in Northwest Arkansas, home of the SCMRC and the university, where visionaries like Tyson Foods’ John W. Tyson, Walmart’s Sam M. Walton, and J.B. and Janelle Hunt, the founders of J.B. Hunt, decided to stake their claims decades ago.

ATTRACTING TALENT

Similarly, leading logistics providers, utility executives, commercial real-estate brokers, and site-selection experts have joined forces with forward-thinking government officials and manufacturers to create great logistics sites and services in disparate areas all across the country. Some of those locations easily come to mind, while others are relatively hidden gems in the logistics universe.

What all of these areas have in common, Williams says, is closeness to high-population centers (and the ability to access them quickly), qualified workers and executives, and community leaders who recognize the imperative of making their communities places where outstanding workers and executives desire to be.

“You have to be a place that can attract talent,” Williams says, “a place where talent wants to live.” In seeking their ideal logistics site, he says, companies must ask: “Are we in an area where we have access to talent?”

Such places become “forever homes” to a management and labor pool populated by individuals who will turn down jobs elsewhere in order to stay.

“From an economic development perspective, this is critical,” Williams says, adding that it is likewise vital for the community to create a welcoming environment for businesses through



GEORGIA PORTS AUTHORITY/EMILY GOLDMAN

Providing access to water assets that facilitate moving products quickly and efficiently to their destinations is key to becoming a great logistics site. Pictured, Wallenius Wilhelmsen’s Tirranna departs Colonel’s Island Terminal at the Port of Brunswick in Georgia.

WE FOCUS ON THE DETAILS.



Natalie Tyler-Martin — VP, Regional Asset Manager, Atlanta

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ElectriCities developed the Smart Sites program, also known as S2, to help member communities prepare shovel-ready sites for economic development. The program streamlines the process for companies and consultants, minimizing their risk.

incentives and continual efforts to improve and enhance the region's logistics infrastructure.

"In the end you can't move forward without the community agreeing that it wants you there," he says.

Such sites may not always be "right in the center" of things, Williams says, but they must provide access to high-quality labor at a reasonable cost as well as to road, rail, air, and water assets that facilitate moving products quickly and efficiently to their destinations.

"Anchor companies" are often trailblazers in regions that become logistics clusters through "coopetition"—where several companies serving varied industries cooperate in efforts to increase the region's strengths, fueling innovation and education that will attract even more talent, thereby contributing to the advantages of the logistics environment.

These are the places that "people don't want to leave," Williams says.

"It's hard to get talent," he notes, adding that the SCMRC's long history of collecting data has taught researchers that the "big lesson" of logistics success is that the quality of talent is foremost.

In numerous studies, he says, "without fail" company executives repeatedly state the same attribute as the primary factor in their logistics success: "My people."

It often has been said that without truck drivers, the nation's cupboards would be empty. But equally vital is where the drivers' journeys begin, as well as the people creating the products, loading the trucks, and sending the drivers on their way. The place the trip starts, therefore, is just as essential as where it ends.

Here is a look at some of the country's great logistics sites and the organizations that support them.

ElectriCities: North Carolina Powerhouse

When it comes to finding solutions to logistics challenges, there is nothing quite like the power of power.

One particularly powerful solutions provider is ElectriCities of North Carolina, a not-for-profit membership organization of municipally owned electric utilities.

ElectriCities is prominent among the reasons North Carolina is an enviable logistics locale. The organization advocates for public power communities at the state and federal levels, and provides a number of administrative, technical, legal, and legislative services to support its members.

"We serve all areas of North

Carolina," explains Brenda Daniels, the organization's manager of economic development. "We have 51 total power agency members with 32 in the east and 19 in the west.

"We also have associate members in North Carolina as well as South Carolina and Virginia," she adds, "comprising approximately 90 members in all."

Daniels echoes the mantra of savvy logistics experts who cite the quality of

**EACH BUSINESS IS
DIFFERENT, BUT THEY
ALL WANT THE SAME
THING: WORKFORCE.
WE ALWAYS WANT TO
MAKE SURE COMPANIES,
WHETHER THEY ARE NEW
OR EXPANDING, GET THE
WORKERS THEY NEED.**

—Brenda Daniels, Manager, Economic
Development, ElectriCities



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available talent as a primary factor in the formula necessary for a region to qualify as a logistics superstar. “Each business is different, but they all want the same thing: workforce,” she says. “We always want to make sure companies, whether they are new or expanding, get the workers they need.”

In addition to connecting talent with employers, ElectriCities actively contributes to the process of attracting businesses to the region it serves.

“We continue to work with our cities and towns, county developers, and the Department of Commerce and Economic Development Partnership of North Carolina to recruit business,” Daniels says. “Having the logistics assets in the state is certainly a plus when talking with companies looking at our state.”

Those assets include an interstate road system—including I-95 north to south, and I-40 east to west—that reaches all parts of the United States, as well as the forthcoming Carolina Connector (CCX) linking the CSX Rail Terminal in Rocky Mount, North Carolina, to the entire Midwest.

Rocky Mount is an ideal spot for CSX’s newest intermodal terminal, as the facility will provide regional industries with convenient access to rail, helping connect products to consumers nationwide. Shippers will benefit from Rocky Mount’s strategic location on the CSX mainline and proximity to the Triangle region’s major consumption market.

The Triangle region gets its name from Research Triangle Park (RTP) and three Tier 1 research universities—Duke University, North Carolina State University, and University of North Carolina Chapel Hill—located only minutes apart. Lying in the heart of North Carolina, the Triangle region encompasses several counties that are home to a variety of towns and small cities with a diverse range of available housing.

Meanwhile, RTP is one of the most prominent high-tech research and development centers in the United States. Covering more than 7,000 acres, it is the largest research park in the United States and is home to some 200

companies employing 50,000 workers and 10,000 contractors.

Also helping the region soar as a logistics sweet spot is Raleigh-Durham International Airport, which has direct flights to 38 domestic and international cities on 352 daily flights. Among other approaches, ElectriCities capitalizes on these advantages through services that provided a net value of more than \$460 million to its members last year.

NC Ports: Continual Investment

One key ingredient necessary to qualify a region as a great logistics site is its ability to evolve and grow in order to meet ever-changing needs in the logistics marketplace.

In that regard, North Carolina is a standout for the forward-thinking mindset of regional leaders who are unwilling to simply rest on the area’s intrinsic geographical advantages, such as its congestion-free maritime ports under the jurisdiction of the North Carolina State Ports Authority (NC Ports).

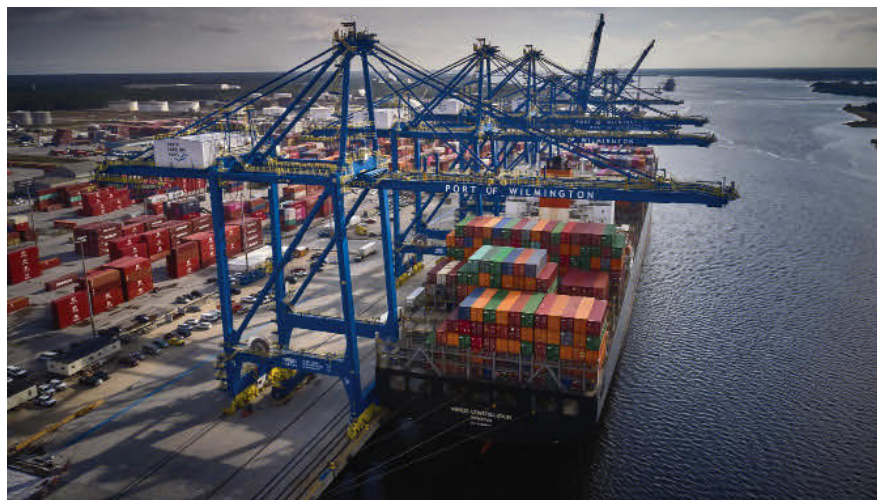
“Proximity to infrastructure is key when considering relocation or expansion of business,” says Brian Clark, executive director of NC Ports.

“NC Ports continues to invest in infrastructure projects to ensure they remain congestion-free as they continue

**PROXIMITY TO
INFRASTRUCTURE IS
KEY WHEN CONSIDERING
RELOCATION OR
EXPANSION OF
BUSINESS. NC PORTS
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PROJECTS TO ENSURE
THEY REMAIN
CONGESTION-FREE AS
THEY CONTINUE WITH
THEIR STRONG GROWTH.**

—Brian Clark, Executive Director,
NC Ports

with their strong growth,” he adds. “With the highest productivity and best truck turn times in the country, NC Ports continues to support commerce in North Carolina and maintain a viable option for companies needing a customized high-velocity solution across all industry verticals.”



North Carolina’s ports are among the most market-accessible on the U.S. East Coast. Within 1,000 miles of North Carolina’s borders are more than 170 million U.S. and Canadian consumers and nearly 60% of total U.S. retail sales.

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North Carolina's ports are among the most market-accessible on the U.S. East Coast. Within 1,000 miles of North Carolina's borders are more than 170 million U.S. and Canadian consumers, more than 65 of the country's top 100 metropolitan areas, and nearly 60% of total U.S. retail sales.

NC Ports' close proximity to available industrial real estate as well as 65% of existing and emerging markets, makes the ports organization an ideal partner when selecting an area for location. Cooperation with its partners contributes mightily to the ports'—and the region's—success.

"What makes NC Ports unique is our ability to develop joint solutions with customers including beneficial cargo owners and logistics providers," Clark says.

All of this builds on the assets already in place in the state. In addition to its major interstates and rail assets, North Carolina is home to two deep-water ports at Wilmington and Morehead City, making the region an ideal location for companies across several industry verticals. These include automotive, advanced manufacturing, aerospace, furniture, apparel and textile, agriculture (dry, refrigerated, frozen), food processing, plastics/chemicals, and biotech/life sciences.

Proximity to consumers/end users and availability of industrial development sites both near the ports and across the state provide companies with the ability to shorten their build-to-operation timetables.

North Carolina's infrastructure also allows for effective movement of raw materials to support manufacturing as well as finished products. This is especially important in light of recent strains on the supply chain, as companies seek alternative locations for operations to minimize supply chain variables.

Moreover, NC Ports—an enterprise agency of the North Carolina Department of Transportation—is involved in joint recruitment and business-expansion programs across multiple industry sectors within the



GEORGIA PORTS AUTHORITY/JEREMY POLSTON

The CMA CGM Brazil, the largest vessel ever to call the U.S. East Coast, docks at GPA's Garden City Terminal. The Port of Savannah, with 1,345 acres and 36 ship-to-shore cranes, is equipped to handle export and import cargo related to vessels in the 15,000-TEU class.

state. The organization's list of business development vertical leads represents more than 150 years of collective logistics experience that assist in analyzing correct asset utilization and identifying cost-effective, optimal supply chain efficiencies while catering to the needs of current and prospective customers.

**THE GPA'S EXPANSION
STRATEGY WILL NOT ONLY
MAINTAIN SAVANNAH'S
POSITION AS THE HUB
PORT OF THE U.S.
SOUTHEAST, BUT
STRENGTHEN ITS ABILITY
TO DRIVE ECONOMIC
GROWTH AND PRIVATE
INVESTMENT FOR
COMMUNITIES ACROSS
GEORGIA.**

—Joel Wooten, Chairman of the Board,
Georgia Ports Authority

Georgia Ports Authority: Access to Savannah

Prominent on the long list of assets keeping Georgia on the minds of logistics professionals are the state's multiple ports represented by the Georgia Ports Authority (GPA). And prominent on the list of the GPA's ports is the highly advantageous Port of Savannah.

Savannah provides fast access to 45% of U.S. consumers and manufacturers. The port's location, only six miles from I-16 (East/West) and I-95 (North/South), means key cities and manufacturing points throughout the U.S. Southeast may be reached within a one- to two-day drive. Because the terminal is situated west of Savannah, trucks are not hindered by city traffic.

The state of Georgia features the nation's third busiest gateway for container trade at the Port of Savannah. Superior interstate access and daily departures by CSX and Norfolk Southern put inland destinations such as Atlanta, Birmingham, Charlotte, Memphis, and Orlando within easy reach.

At 1,367 acres and nearly 10,000 feet of contiguous berth space, the Port of Savannah's Garden City Terminal is the Western Hemisphere's largest single-operator container terminal. The size of



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**NORTH
CAROLINA
PORTS**



the facility, along with on-terminal rail and the port's proximity to Interstates 95 and 16, enables the free flow of cargo beyond the terminal gates.

Additionally, the Port of Savannah sits at the center of the largest concentration of warehouse and distribution center space in the Mid- and South Atlantic. When it comes to room to grow, Savannah has an industrial market of nearly 80 million square feet, with almost 12 million square feet under construction. Beyond that, there is enough land permitted for private development for another 100 million square feet of industrial space within 30 miles of the port.

Savannah's location as the most westerly major port on the U.S. East Coast, centrally located within the Southeast, means the GPA provides unmatched speed to market, with shorter overland routes to major inland destinations. No other port community in the nation provides more targeted workforce training or more room to grow than Savannah. With multiple universities in the region and the state's Quick Start program, industries can rely on Georgia for well-trained employees at every level.

With 36 weekly container services, the Port of Savannah offers more global connections than any other port on the U.S. East Coast besides New York-New Jersey.

The Georgia Ports Authority works closely with the state Department of Transportation, which builds off-terminal infrastructure that benefits cargo movement, such as truck routes, roads, bridges, and interstate improvements. GPA agents work with the Georgia Department of Economic Development as well as local authorities to match the needs of distribution center operators with sites around the state.

The GPA also advises logistics operators considering Georgia locations on potential tax incentives linked to job creation.

On the horizon, the GPA looks to ongoing infrastructure expansion projects including deepening of the Savannah Harbor, a project of the U.S. Army Corps of Engineers, which is now more than 90% complete; the Mason Mega Rail project, which will increase Savannah's annual rail lift capacity to 2 million TEUs this year; Berth 1 improvements at Garden City Terminal, with completion expected in 2023; and eight new ship-to-shore cranes that will bring Garden City Terminal's total fleet to 38 in 2023.

Two other major projects are in the planning phase: Garden City Terminal West expansion, with groundbreaking set for spring 2022; and Northeast Georgia Inland Port, where earthwork activities are anticipated to begin in early 2022. Completion is expected in mid to late 2024.

Hoosier Energy: Business Hotspot

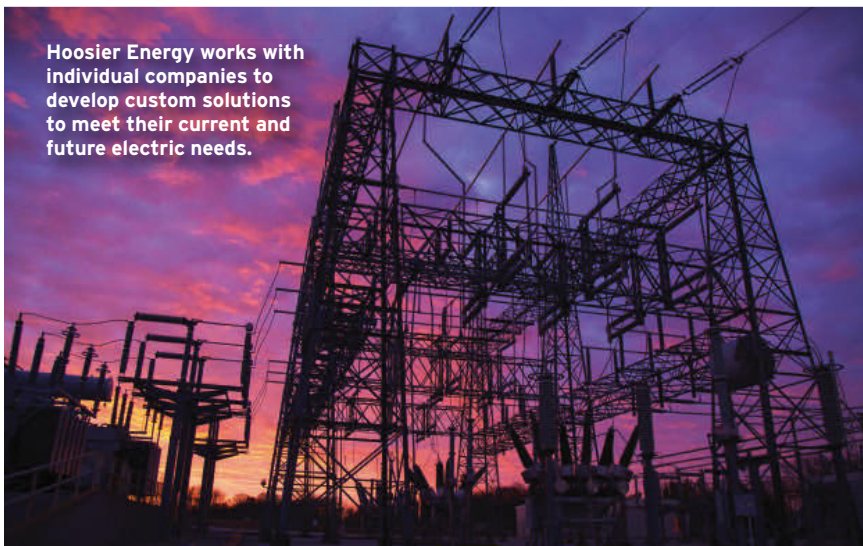
In Hoosier Country, Hoosier Energy can be an ideal partner in the search for the perfect existing facility or shovel-ready site for logistics-savvy businesses. The region features great locations with access to highways, runways, rail, and ports. Hoosier Energy adds to these assets with its ability to create competitive rates for new and expanding businesses.

"Our rate structures allow us rate flexibility to quickly and efficiently make decisions related to large projects with tight timelines," explains Harold Gutzwiller, Hoosier Energy's manager, economic development. "This flexibility includes the development of special contracts for specific projects that meet a company's corporate carbon goals including providing up to 100% of their energy needs through renewable resources."

Hoosier Energy is owned by 18 Rural Electric Member Cooperatives (REMCs) serving 59 counties in the region. Territories served by the

HOOSIER ENERGY WORKS WITH AND SUPPORTS STATE, REGIONAL, AND LOCAL ECONOMIC DEVELOPMENT ORGANIZATIONS IN IDENTIFYING AND DEVELOPING NEW POTENTIAL SITES NEAR LOGISTICS ASSETS.

—Harold Gutzwiller,
Manager, Economic Development,
Hoosier Energy



Hoosier Energy works with individual companies to develop custom solutions to meet their current and future electric needs.



LOGISTICS

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**HOOSIER
ENERGY**

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member/owner REMCs are crisscrossed by five interstates—I-70, I-65, I-64, I-69, and I-74—with direct access to the FedEx hub in Indianapolis and the UPS hub in Louisville. The Hoosier Energy region contains the median center of the U.S. population and also includes access to inland ports.

Additionally, Gutzwiller points out, Indiana has more connecting highways than any other state and has 41 freight railroads, enabling logistics firms to move effortlessly throughout the region and beyond.

Talent availability is a key advantage as well. Nine Indiana truck-driving schools ready the next wave of workers, while the current driver pool supply ably meets the region's growing demand.

All of this translates into a robust logistics marketplace, Gutzwiller says, and Hoosier Energy is focused on increasing the region's competitiveness.

"Hoosier Energy works with individual companies to develop custom solutions to meet their current and future electric needs should they be facility or transportation related," Gutzwiller says. "As electric vehicles become increasingly important, we work with the consumer to identify the most appropriate way for them to meet their transportation goals."

Economic development efforts are clearly working. Specialty discount store company Five Below will open a 1-million-square-foot distribution center along the I-74 corridor next year. The e-commerce center is expected to employ more than 470 people by 2025.

Already, Indiana ranks fifth in tons of goods shipped outbound by truck. More than 120,000 truck drivers reside within a roughly 100-mile radius of Hoosier Energy's headquarters in south central Indiana.

"Hoosier Energy works with and supports state, regional, and local economic development organizations in identifying and developing new potential sites near logistics assets," Gutzwiller says. "Indiana has an abundance of these assets, including federal and state highways, Class 1 and short-line rail lines, ports and air freight infrastructure."

Gutzwiller reports that Hoosier Energy is going through a major power production transition with the planned retirement of its 1,000 megawatt coal-fired Merom Generating Station in 2023. Closing this facility will dramatically change the cooperative's energy portfolio and decrease its carbon footprint by an estimated 80%, replacing coal with renewable energy resources, purchased power, and a variety of natural gas generation.

GLOBAL DEMAND IS MOUNTING TO MOVE PRODUCTS MORE QUICKLY. CHOOSING THE RIGHT LOCATION CAN RESULT IN IMMENSE TRANSPORTATION SAVINGS AND A MORE EFFICIENT SUPPLY CHAIN OPERATION.

—Brian McKiernan, Senior Vice President, Development, CenterPoint Properties

CenterPoint Properties: Chicagoland Gem

Generating excitement among logistics professionals in the Chicagoland region is the 6,400-acre master-planned CenterPoint Intermodal Center (CIC) in Joliet and Elwood, Illinois, some 40 miles southwest of Chicago.

Opened for business in August 2010, the CIC is a project of CenterPoint



HOUBOLT ROAD EXTENSION JV

CenterPoint Properties has embarked on a major public-private project to upgrade the infrastructure around the CenterPoint Intermodal Center (CIC) in Joliet and Elwood, Illinois. A centerpiece is the Houbolt Road Extension project, a 1.5-mile-long highway extension—including a 0.4-mile-long bridge (rendering, pictured)—which will serve as the third entrance into the CIC.

Properties, which acquires, develops, and manages 64 million square feet of strategically located industrial real estate in America's top port markets. In addition to Chicago, where the company has its headquarters, CenterPoint operates in New York/Northern New Jersey, Savannah/Charleston, South Florida, Houston, Los Angeles, Oakland, and Seattle.

Anchored by the 835-acre Union Pacific Joliet Intermodal Terminal and the 770-acre BNSF Logistics Park Chicago, the CIC is at the crossroads of east-west I-80 and north-south I-55 with intermodal rail services to and from every major U.S. West Coast port, as well as Houston. The intermodal interline services of Norfolk Southern and CSX link the center for unfettered rail access to the entire nation.

"As we saw with the pandemic and related recession, macro global events tend to drive more shippers and third-party logistics providers to look at enhanced supply chain efficiencies and savings as they aim to reduce their total landed costs," explains Brian McKiernan, CenterPoint Properties' senior vice president of development, who is leading the leasing efforts of newly constructed facilities at the CIC.

"As companies become more cost-focused, we'll see even more tenants

seeking to benefit from a lower total landed cost," McKiernan says, citing rail's economic benefits, such as allowing shippers to move goods

locating warehousing in intermodal hubs like the CIC offers users even more significant benefits, including slashing drayage costs by an average of 25%.

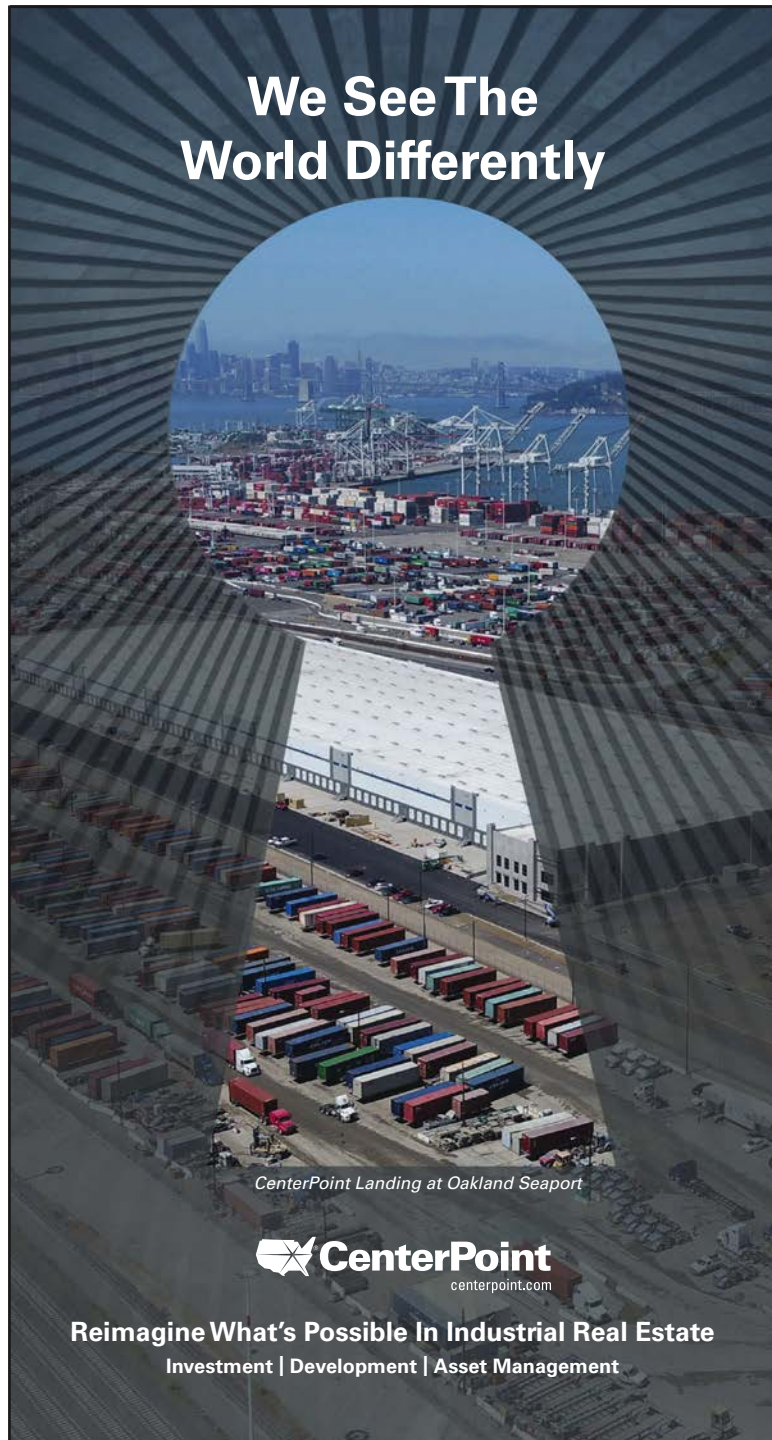
"The regional and national interstate access is a big draw for tenants at CIC-Joliet," McKiernan says. "The center's strategic location also gives tenants access to the area's more than 8 million people, another critical feature our logistics, e-commerce, and retail tenants need. Beyond that, the rail service is the bread and butter of our development."

"Global demand is mounting to move products more quickly," he adds. "Choosing the right location can result in immense transportation savings and a more efficient supply chain operation."

The CIC has more than three-dozen tenants. Its two intermodal terminals complete some three million TEU movements per year.


"Over the past few years, we already were seeing an increase in demand for logistics hub infrastructure," McKiernan says, adding that the pandemic and recent economic concerns are fueling even more demand.

Testimony to the CIC's prominence among the nation's great logistics sites is the fact that as many as 20,000 trucks pass through the center daily.



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24/7, and the environmental benefits of taking trucks off roads. According to the Association of American Railroads,

In March 2021, CenterPoint and United Bridge Partners embarked on a major public-private project to upgrade the infrastructure around the CIC. The centerpiece of the private portion of the Houbolt Road Extension project is a 1.5-mile-long highway extension—including a 0.4-mile-long bridge—which will serve as the third entrance into the CIC.

The publicly funded portion of the project will consist of a \$32-million investment by the State of Illinois and the City of Joliet to construct a new diverging diamond interchange at I-80 and Houbolt Road and reconstruct Houbolt Road from I-80 to U.S. Route 6.

Duke Realty: Westward Ho

Accelerated e-commerce growth and expanded restock inventory requirements have been driving companies' needs for more modern warehouse and distribution space. Developers are having to consider several factors when starting new projects. Tenants want warehouses in communities with a robust labor pool and proximity to population centers and ports, all while maintaining reasonable project costs.

**GIVEN THE STRENGTH
OF THE INDUSTRIAL
SECTOR AND VOLUME
OF NEW PROJECTS
UNDER DEVELOPMENT,
IT'S MORE IMPORTANT
THAN EVER TO WORK
COLLABORATIVELY
TO GAIN A BETTER
UNDERSTANDING OF
WHAT'S IMPORTANT
TO THE LOCAL
STAKEHOLDERS AND
COMMUNITY.**

—Chris Burns, Executive Vice
President, Central and Western
Regions, Duke Realty

“Finding quality labor for warehouse workers and more highly skilled robotics and heavy equipment operators is a challenge right now in Southern California,” says Chris Burns, executive vice president,

Central and Western regions, for Duke Realty, a leading owner, developer, and manager of real estate in 19 markets throughout the United States.

Like the other regions Duke Realty serves, Southern California has all the advantages of location. “Southern California’s geography is uniquely positioned as the gateway to Asia, where products are made inexpensively and shipped to the United States for consumption,” Burns says.

Still, the company is constantly on the search for the region’s next big thing. “We are always looking for existing buildings, trailer yards, and development sites that are well located and can meet the needs of today’s users,” Burns says, adding that Duke Realty has more than 17 million square feet in its Southern California portfolio.

Duke Realty’s portfolio has grown more than 70% largely through development. “We currently have 11 buildings under construction in Southern California that range in size from 40,000 square feet to more than 1.2 million square feet located between five and 50 miles from the ports of Los Angeles and Long Beach,” he points out.

About 15 miles east of downtown Los Angeles in Irwindale, Duke Realty



Duke Realty is developing its first Smart Building, about 15 miles east of downtown Los Angeles in Irwindale. This 528,000-square-foot speculative project to be delivered in 2022 will integrate technologies such as improved air filtration systems, integrated solar panels, and battery storage to supplement tenants' energy needs.

is developing its first Smart Building, a 528,000-square-foot speculative project to be delivered in 2022.

"This is a first-of-its-kind project for Duke Realty," Burns confirms. "We are integrating a number of technologies such as improved air filtration systems, integrated solar panels, and battery storage to supplement tenants' energy needs and increase sustainability reporting."

In addition to labor and location, transportation access, infrastructure, and costs are essential elements in the definition of a great logistics site. "We are actively expanding our footprint in highly desirable locations that our clients are targeting," Burns says.

He further explains that transportation and labor continue to be primary cost drivers, "so we are focused on locations that can best optimize these for our clients."

According to Burns, Duke Realty plans for its developments and anticipates client needs. "We buy materials in advance, if possible, to mitigate supply shortages," he says. "We are always looking for quality land opportunities that we can put into development in a timely manner so we have product ready when clients are in need."

Because California's strong manufacturing and agricultural industries require the ability to efficiently export goods, and the nation's recent

increase in online retail activity requires efficiency in importing, the company looks for development opportunities where infrastructure is optimal—locations

To ensure the economic and environmental impacts are considered and the needs of tenants, cities, and communities are examined, Duke Realty

works collaboratively with regional and local resources, including government and service providers.

"It has always been important to establish and foster positive relationships with the leaders in the municipalities where we own assets," Burns says. "Given the strength of the industrial sector and volume of new projects under development, it's more important than ever to work collaboratively to gain a better understanding of what's important to the local stakeholders and community."

Today's competitive market requires that developers keep tenants' needs for strategically located space in mind. Companies want readily available workers, easy access to ports, major thoroughfares and airports, and proximity to millions of consumers. The challenge for developers right now is keeping development costs down, but planning can help contain those costs.

When all is said and done, the logistics sites that qualify as truly great are the locations that make the most of the resources they have today, and constantly

build on those assets—economically and efficiently—in order to best serve the needs of tomorrow.

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IT TOOLKIT

ERP Makes the Grass Greener

THE CUSTOMER

Established in 1970, Lawn Equipment Parts Company (LEPCO) is a family-owned-and-operated wholesale distributor of outdoor power equipment, parts, and accessories. Originally, LEPCO operated as an aftermarket parts distributor to independent lawn equipment dealers. Today, it handles six major brands of power equipment and continues to supply aftermarket parts to 1,300 dealers in the northeast region.

THE PROVIDER

VAI is an independent mid-market ERP software developer that automates critical business functions for the distribution, manufacturing, retail, and service sectors. VAI's solutions leverage business intelligence, analytics, mobility, and cloud technology to help customers make informed business decisions and empower mobile workforces.

by Karen Kroll

Since its founding more than five decades ago, Lawn Equipment Parts Company (LEPCO), a family-owned wholesale distributor of outdoor power equipment, parts, and accessories, has grown to handle six brands of power equipment and aftermarket parts for more than 1,300 dealers in the northeastern United States. LEPCO is based in Marietta, Pennsylvania.

When its enterprise resource planning (ERP) solution could no longer effectively handle its range of products, nor the multiple delivery channels it offers its clients, management began searching for a more robust replacement.

Among other features, the new solution needed to offer forecasting and analytic capabilities, an advanced mobile application, and the ability to assemble a single source of data across the company. Its search led LEPCO to VAI, a provider of ERP solutions focused on mid-market companies.

LEPCO offers more than 60,000 active stock-keeping units (SKUs); when repair parts are included, the number of SKUs jumps to more than 285,000. Its product lines range from tiny nuts and bolts to beefy lawn tractors.

While many consumers focus on lawn care equipment primarily in the summer, LEPCO offers products for all seasons, says Chris Reinhold, director of operations. In the fall, that equipment includes chain saws and leaf blowers; winter sales are heavier on snow blowers, while spring and summer

are prime times for aerators and other lawn equipment.

"There's constant variation and peaks and valleys with products from multiple manufacturers," Reinhold says. A robust, modern ERP system was essential to managing the breadth and depth of LEPCO's product lines.

The ability to meet the varying needs of LEPCO's approximately 2,100 customers also was crucial, Reinhold says. The company is known for its customer service, and much of its business comes from repeat clients.

MORE THAN A BACK OFFICE SYSTEM

As a result, management needed "more than just a back-office operating system," says Rob Kintner, LEPCO's controller and director of human resources. Instead, management needed an ERP solution that would help the company reach its goals.

As it became clear LEPCO would need to find a new ERP system, it initiated a request for proposal process. Management listed the multiple criteria by which it would assess potential

CASEBOOK STUDY

Yard Gains

THE CHALLENGE

LEPCO needed to replace its outdated ERP system. The new solution had to incorporate several attributes, including mobile and analytic capabilities, the ability to handle thousands of SKUs and multiple distribution channels, and the ability to provide a single source of data throughout the organization.

THE SOLUTION

Through an RFP process, LEPCO partnered with VAI to implement its S2K ERP solution.

RESULTS

Among other benefits, LEPCO's user experience has been enhanced with the opportunity for future growth. LEPCO has been able to customize S2K programming to meet the needs of its suppliers and customers and maintain the quality service that distinguishes it from competitors.

NEXT STEPS

Enhance and activate more features of the system, including the Smart Center portals.

vendors. The winning solution needed to offer forecasting and predictive analytics, a robust mobile application, and other advanced features. As important, LEPCO needed one source of data across its enterprise. The solution's ability to facilitate quality customer service was also critical.

For LEPCO, quality service means, among other attributes, providing customers with multiple purchasing choices. "When customers want to buy, they buy how they want to buy," Reinhold says. LEPCO doesn't dictate the purchasing method to customers.

In addition to customers purchasing through dealers, LEPCO will, on behalf of its customers, drop ship to end users. It



Based in Marietta, Pennsylvania, LEPCO provides products and services to independent dealers in the northeast United States.

needed a system that could handle various types of sales.

Along with sales of new equipment, LEPCO provides repair parts. It also offers marketing materials to help its business customers establish appealing showrooms. In addition, LEPCO employees will assist when a customer is, for instance, preparing a bid to offer its services. It was important that the new ERP and website be able to facilitate these various functions.

MARRYING THE PRODUCTS

In addition, LEPCO's warehouse is organized so that different products—say, small nuts and bolts—are located in areas separate from lawn tractors and other larger equipment. The products are picked separately and then married at the end, as the orders are getting ready to be shipped out, says Frank Maggio, VAI project director. The ERP system had to accommodate this process.

VAI's S2K solution met these requirements. It "provides us with a comprehensive ERP system that has fully integrated applications, including business analytics and intelligence, CRM, e-commerce and mobile," Kintner says.

VAI, based in Ronkonkoma, New York, has been providing cloud-based ERP solutions to a range of industries for decades. "We're experienced and bring deep

knowledge," says Kevin Beasley, chief information officer. Its solutions are geared to mid-market organizations, with a focus on the distribution, manufacturing, retail, and service sectors, among others.

Several attributes are key to VAI's offerings. Its solutions are built on standards-based technologies like HTML5 and can run on a range of platforms.

While LEPCO is using an on-premise solution, customers choosing a cloud-based system don't need to run their own system infrastructure. VAI also provides its cloud customers with a fully redundant data center.

In addition, VAI's ERP solutions incorporate artificial intelligence capabilities, allowing for more advanced forecasting and predictive analytics, Beasley says.

VAI's integrated ERP solution utilizes a single, central database, so clients no longer must manage disparate databases or assemble multiple spreadsheets to gain the information they need to guide their decision-making. The result is more accurate, consistent, and timely information, as all applications have access to the same, real-time data. "It's tightly integrated together," Beasley says.

A single database also streamlines operations. Organizations can update their records once and be confident the new information will be reflected across the organization. They no longer have to

spend time making duplicate entries or copying files from one system to another. Finally, VAI's unlimited user license option means clients can add users without paying additional software licensing and maintenance fees.

PART-TIME, ON-SITE, AND REMOTE

LEPCO's implementation of VAI's S2K solution started in 2018, and the solution went live in 2019. Multiple LEPCO employees consistently worked part-time on the file conversion, programming, and implementation. "We're a certain size, but not big enough to dedicate an entire group to ERP implementation," Reinhold says.

VAI also had programmers working both on-site and remotely. The goal for all was to ensure the system could, from the start, maintain the service levels that differentiate LEPCO from its competitors.

Both the VAI and the older ERP system ran in parallel for about one month. "As important as it was to update the ERP, nobody wanted to lose any data during the transition," Reinhold says.

Management also needed the switch to occur after one of its peak selling seasons. This would allow more time to make any adjustments needed before sales again increased.

In November 2019, LEPCO shifted to

VAI's S2K solution. "We functioned as a partnership and got it done in about one year," Beasley says.

Since the launch, LEPCO has been leveraging S2K to run multiple functions, including e-commerce, shipping, and inventory. "Our focus since our go-live has been to stabilize S2K and maintain the highest level of service," Kintner says.

Moreover, LEPCO's user experience has improved significantly, when compared to its previous ERP software, Kintner says. That's largely a result of point-and-click functionality, rather than "the old green screen menu-driven operation," he adds.

LEPCO also has leveraged S2K's technology to gain efficiencies by developing the ability to upload and process data, such as billings, warranties, rebates, incentives, and vendor invoices, through the system. "A successful distribution model demands greater efficiencies and reliance upon technology to execute operations, versus hiring additional employees to process volume-related transactions," Kintner says.

More recently, LEPCO has been transitioning to the next phase of its ERP optimization, and focusing on specific modules of the system, including order entry, warehouse operations, and

e-commerce. The goal is to more efficiently handle inventory availability, as well as backorders and allocations.

"These are key areas of our business where we excel and determine our customers' experience," Kintner says, noting that S2K provides the ability to customize programming so LEPCO can meet the needs of its suppliers and customers, while maintaining stellar service levels.

LEPCO also has been focused on building greater intelligence within various modules, including order entry, and accounts payable and receivable. The goal of these efforts is to identify issues and opportunities and continually improve service levels, Kintner says. This also includes monitoring power system performance, in case an issue arises, such as a trial balance that's out of balance, or challenges in posting.

FOCUS ON E-COMMERCE

Another significant focus is e-commerce functionality. LEPCO continues to enhance its accounting- and billing-related functionality for dealers and customers. It has also built greater transparency for dealers to check the availability of inventory online.

Recently, LEPCO launched an S2K Smart Center for its employees, with a cleaner portal for each role. For example, accounts payable includes only KPIs associated with that role. "We look forward to continuing to see VAI develop the Smart Center portal as the front-end entry point of the ERP system and all its applications," Kintner says.

As critical as the software is, Kintner notes that the people and support within VAI have been significant to the success of LEPCO's ERP implementation. "The service and organizational support of an ERP software provider seem to be significantly overlooked in the marketplace," he says. Instead, the focus is on the software, rather than the people supporting it.

"VAI's partnership is important, and it has been a valuable part of our integration into S2K," Kintner says. "We look forward to continuing to build our long-term partnership." ■

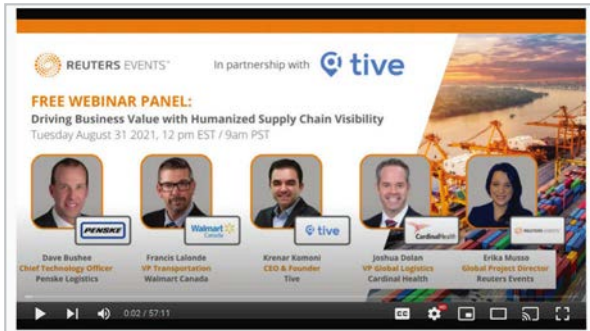


LEPCO, an outdoor power equipment and parts distributor, handles six major brands, including Exmark mowers. To keep up with customer expectations for rapid order fulfillment, the company implemented a powerful and responsive ERP system.

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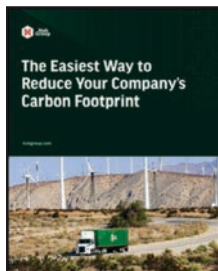
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SUSTAINABILITY & BUILDING A GREEN SUPPLY CHAIN

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Transportation emits 1.9 billion tons of carbon per year on average in the United States, and about 23% comes from medium- and heavy-duty freight trucks. With continued expansion of global markets, many scientists believe freight trucking emissions could skyrocket in the coming years. Learn how the industry is shifting to renewable resources and how you can stay ahead of the trend.

bit.ly/CLSept21SCI



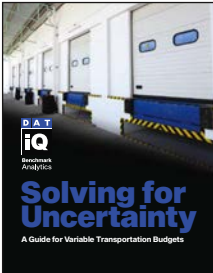
JOANN STORES CASE STUDY

Offered by Acuitive Solutions

JoAnn Stores has miles of fabric and millions of buttons, and with that comes nearly as many shipping challenges. With 5,000 ocean container shipments annually from Asia and the Middle East, the craft retailer was in urgent need of a smart, automated prepayment audit solution. Read how ocean freight auditing helped improve transparency and provide seamless utility.

bit.ly/AcuitiveSept21SCI

WHITEPAPERS



SOLVING FOR UNCERTAINTY: A GUIDE TO VARIABLE TRANSPORTATION BUDGETS

Offered by DAT Freight & Analytics

Procuring truckload capacity is unique compared to other commodities, and the recent spikes in shipping costs bring extra attention to budgets. Given all the uncertainties, how can you successfully execute a transportation budget? Read this free whitepaper to find strategies for balancing predictability and flexibility in your transport spending.

bit.ly/DATSept21Eb



OVER-THE-ROAD FREIGHT MANAGEMENT TRENDS

Offered by GlobalTranz

Over-the-road (OTR) transportation continues to challenge supply chains with capacity, labor shortages, increasing fuel prices, and unpredictable buying patterns. Knowing what's happening in the market will help your team and business thrive through disruption. This free whitepaper covers the state of the OTR trucking market, ensuring cargo security during peak season, and best practices for improving OTR transportation.

bit.ly/GlobalTranzSept21WP



FIVE POINT WAREHOUSE TUNE-UP

Offered by 3PL Central

From growing customer expectations to fiercer competition, warehouses must be able to meet challenges head on to drive more revenue and serve growing demands. This free whitepaper outlines the top five tips critical for success and profitability. These tips will help make warehouse operations more efficient, your staff more valuable, and your warehouse capable of seizing new opportunities.

bit.ly/3PLCentralSept21Eb

PODCAST



Frank Dreischarf

HOW A PROPERLY EXECUTED TMS CAN AFFECT YOUR SUPPLY CHAIN SPEND

GUEST: Frank Dreischarf

Vice President of Supply Chain Solutions, R2 Logistics

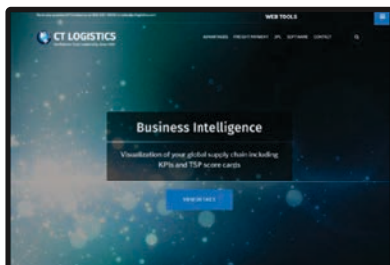
Every supply chain needs a good transportation management system (TMS) to move product—but defining a “good TMS” means something different for every company. Frank Dreischarf of R2 Logistics discusses how ineffective TMS execution could be hindering your operations.

bit.ly/R2Sept21Pod

Listen on:  Apple  Google  Alexa  Spotify

IN THIS SECTION: 3PL

3PL

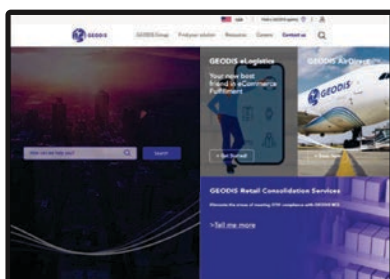
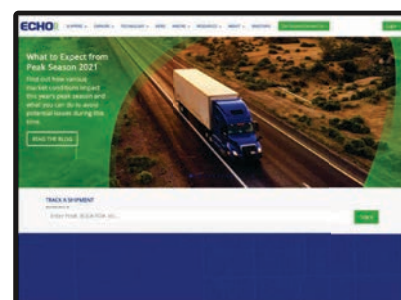


CT LOGISTICS • www.ctlogistics.com

Since 1923, organizations have leveraged CT Logistics to provide global freight audit & payment and transportation management solutions. Partner with CT to design and implement customized supply chain and rate management solutions. CT's Business Intelligence platform provides global spend visibility and data analysis using SOCII and ISO 9001:2015 certified processes. Services also include: Shipment Execution, Bid Management, Shipment Planning and Execution Software, and Professional Services for consulting and advising.

ECHO GLOBAL LOGISTICS • www.echo.com

Echo Global Logistics, Inc. (Nasdaq: ECHO) is a provider of technology-enabled transportation and supply chain management services. Echo maintains a proprietary, Web-based technology platform that compiles and analyzes data from its network of more than 50,000 transportation providers to serve its clients' needs. Offering freight brokerage and managed transportation services across all major modes, Echo works to simplify the critical tasks involved in transportation management.

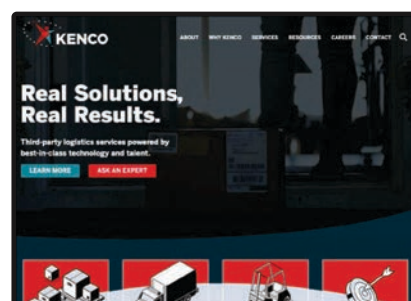


GEODIS • www.geodis.com

With 5,500 people and a global network, GEODIS is one of the world's largest freight management companies, serving customers with integrated supply chain solutions that deliver cargo by sea and air. The company's expertise, value-added services, and e-services enable you to streamline the flow of goods. We also make your supply chain more transparent and easier to manage. A self-reliant network of offices, and air and ocean hubs in more than 50 countries, ensures that your cargo flows efficiently and consistently across the world.

KENCO • www.kencogroup.com

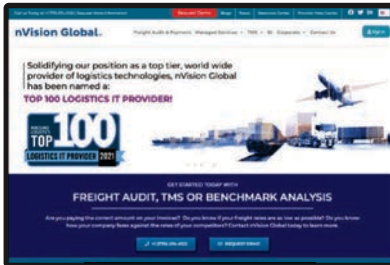
Adding value to your bottom line? That's the mission of Kenco. For more than 50 years, Kenco has guided some of the most demanding supply chains in the world. Kenco's convergence approach can help you streamline your supply chain and bring a greater return on assets and investments. Kenco invites you to visit this website so that you might get to know its services. Then, contact Kenco so that you might truly understand its unique strategic advantages.



IN THIS SECTION:

3PL - Intermodal

3PL

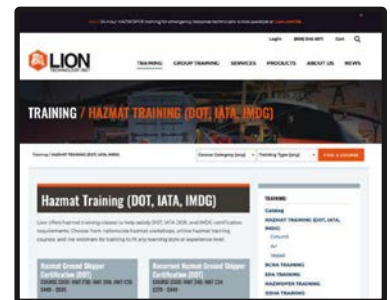
nVISION GLOBAL • www.nvisionglobal.com

nVision Global is an industry leader in providing configurable logistics services and solutions for customers around the world, enabling them to optimize their supply chain and gain access to critical data. We offer a full suite of logistics services and solutions that allow for end to end shipment and supply chain management and visibility. Our solutions include a global, multi-modal TMS application, international freight audit and payment, loss & damage/overcharge/service failure claims management, as well as industry-leading logistics analysis solutions.

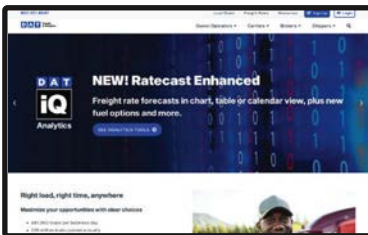
EDUCATION

LION TECHNOLOGY • www.lion.com/hmt

Now your employees can be trained online to meet DOT's regulatory requirements with Lion Technology's unique hazmat training. Over 50 online programs allow you to pick and choose the right curriculum for each employee – from loading dock workers, packagers, forklift operators, and clerical assistants to those shipping consumer commodities and materials of trade. Effective and affordable, training is tailored to the needs and pace of each employee. Expert instructors and a wealth of printed materials back up the program so no question goes unanswered. To register or to try a free training program visit www.lion.com/hmt.



FREIGHT MARKETPLACE



DAT SOLUTIONS • www.dat.com

DAT operates the largest truckload freight marketplace in North America. Transportation brokers, carriers, news organizations, and industry analysts rely on DAT for market trends and data insights derived from 249 million freight matches and a database of \$110 billion of market transactions. The DAT freight marketplace enables shippers to find the right load at the right place, any time; get capacity they can count on; and tap into the clearest view of the freight markets.

INTERMODAL

ALLIANCE SHIPPERS INC. • www.alliance.com

Delivering The Perfect Shipment® from pick up to destination. With operating facilities in the United States, Canada and Mexico, Alliance Shippers Inc. combines excellent customer care with state-of-the-art rail, highway, ocean and air transportation solutions. Additional services include warehousing, distribution, customs clearance, equipment/driver leasing and expedited transportation. For cost-effective logistic solutions tailored to your company's exact needs, contact Alliance Shippers Inc.



IN THIS SECTION: Intermodal

INTERMODAL



HUB GROUP • www.hubgroup.com

For 50 years and counting, Hub Group has serviced customers across multiple industries with innovative solutions and a commitment to service. We provide transportation and logistics management solutions that combine our own assets, strategic relationships and cutting edge technology to support each of our customers' needs. As *Inbound Logistics'* #2 ranked 3PL in 2020, our reputation is built on stability, helping us deliver long-term value to our customers while continuing to add to our suite of supply chain solutions available to customers.

THE LOGISTIX COMPANY • www.thelogistixco.com

The Logistix Company (TLC) has years of experience in logistics, which enabled it to build a private fleet of carriers servicing freight transport across the nation and around the globe. From a single shipment to managing shipping for your entire supply chain, when TLC takes charge of your shipping needs, its focus is on closely monitoring your shipments from pickup to delivery. The company's private fleet of carriers enables it to provide customers the resources to deliver freight to where and when you need it, safely, efficiently, and cost-effectively.

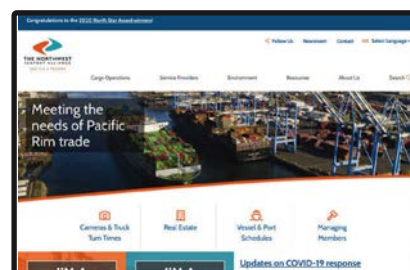


LYNDEN • www.lynden.com

Over land, on the water, in the air—or in any combination—Lynden has been helping customers solve transportation problems for almost a century. Operating in such challenging areas as Alaska, Western Canada and Russia, as well as other areas around the globe, Lynden has built a reputation of superior service to diverse industries.

NORTHWEST SEAPORT ALLIANCE • www.nwseaportalliance.com

The Northwest Seaport Alliance brings together two of the nation's premier harbors to form a single, integrated gateway. Located in the Pacific Northwest, we offer shorter Asia transits and are the first and last ports of call for many transpacific services. Our combined terminals, carriers and ports of call provide flexibility to suit unique supply chain needs. And our commitment to provide cost-effective, innovative shipping solutions is unparalleled.



IN THIS SECTION:
Intermodal - Ocean

INTERMODAL

**ODYSSEY LOGISTICS & TECHNOLOGY • www.odysseylogistics.com**

Odyssey Logistics & Technology Corporation (Odyssey) combines deep industry expertise with leading technology to provide multimodal logistics management services to the chemical industry and other process manufacturers. Odyssey enables clients to outsource any part of their logistics processes to achieve savings through reduced transportation and infrastructure costs, measurable customer service and process improvements, and improved data quality and management. Odyssey is a leader in intermodal with expertise in liquid food, chemicals, and metals transport.

LOGISTICS IT

ACUITIVE SOLUTIONS • www.acuitivesolutions.com

Acuitive's global transportation management software is built to fix inefficient and inflexible process. Its cloud-based TMS solution replaces email and spreadsheets with rules-based workflows that allow your supply chain partners to collaborate and manage shipments in real time and without your direct involvement. Rate, route, and audit your air and ocean shipments faster, with fewer people.

**SMC³ • www.smc3.com**

SMC³—the leading provider of freight transportation technology data and solutions—delivers the only integrated suite of intelligent technology data solutions geared toward the less than truckload and truckload industries. As a leader in both transportation software innovation and supply chain education, more than 5,000 North American shippers, carriers, logistics service providers and freight-payment companies rely on SMC³'s sophisticated LTL base rates, content, and expert bidding tools to make the best business decisions, achieve higher returns on their transportation investments, and meet the dynamic demands of the market.

OCEAN

COSCO SHIPPING LINES (NORTH AMERICA) INC. • na.coscoshipping.com

COSCO Shipping brings the highest quality of ocean cargo transportation services to every corner of the globe, with one of the largest, newest 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.



IN THIS SECTION:

Ocean - Ports

OCEAN



EVERGREEN SHIPPING AGENCY • www.evergreen-shipping.us

Evergreen Shipping Agency (America) Corp. is the North America general agent for Evergreen Line, one of the world's leading ocean carriers. Serving U.S. importers and exporters since 1974, Evergreen Shipping Agency (America) Corp. offers one of the largest intermodal networks in the United States, including worldwide ocean shipping and inland transportation services. Together with its principals, EGA continues to offer unmatched international transportation service.

PORTS

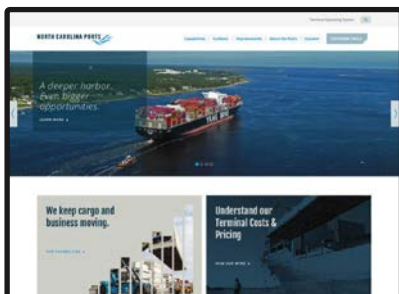
GEORGIA PORTS AUTHORITY • www.gaports.com

The Georgia Ports Authority (GPA) includes the Port of Savannah, the Port of Brunswick, the Bainbridge Inland Barge Terminal, and the Columbus Inland Barge Terminal. Its home page offers history and background about the Ports Authority, a port directory, shipping directory, GPA statistics, maps, photos, and more.



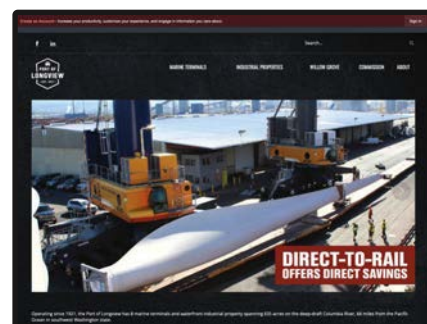
NORTH CAROLINA PORTS • ncports.com

North Carolina Ports offers port locations in Wilmington and Morehead City, along with a rail hub at Charlotte Inland Port. Our customer-focused approach means shippers receive excellent communication and customized service. Our customers experience the fastest turn times on the East Coast. And our expanding storage capabilities allow us to accommodate more customers than ever.



PORT OF LONGVIEW • www.portoflongview.com

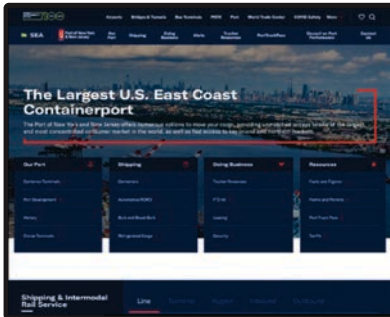
Operating since 1921, the Port of Longview has 8 marine terminals and waterfront industrial property spanning 835 acres on the deep-draft Columbia River, 66 miles from the Pacific Ocean in Southwest Washington state. International trade has grown since 1921, and the types of cargos the port handles have diversified. Cargo handling specialties include all types of bulk cargos and breakbulk commodities such as fertilizers, grain, heavy-lift cargo, lumber, minerals, paper, steel and wind energy.



IN THIS SECTION:

Ports - Site Selection

PORTS

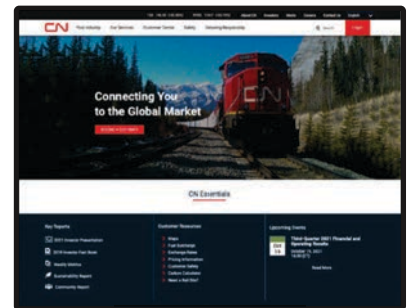
PORT OF NEW YORK & NEW JERSEY • www.panynj.gov/port

The Port of New York and New Jersey is the largest port on the East Coast and gateway to one of the most concentrated and affluent consumer markets in North America. With access to more than 134 million consumers within 250 miles of the Port—our network of terminals, rail and roadways ensure that cargo moves efficiently, cost effectively and in a way that is environmentally sustainable.

RAIL

CANADIAN NATIONAL RAILWAY (CN) • www.cn.ca

CN's network of logistics parks are strategically located at the heart of North America to connect your business to world markets. Located in, or adjacent to, its intermodal rail yards, CN provides you with seamless and efficient transportation and easy access to major highways. CN provides access to all key logistics services—rail, intermodal, warehousing, distribution, CargoFlo liquid and dry bulk transload, and Autoport distribution facilities—in one location. As your supply chain partner, CN can help you find your new distribution home.



REVERSE LOGISTICS

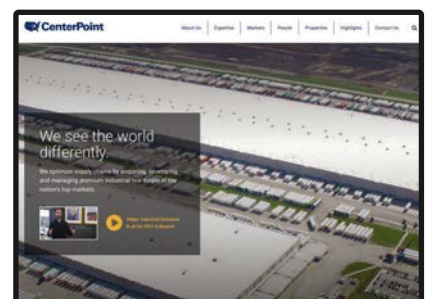
INGRAM MICRO COMMERCE & LIFECYCLE SERVICES
www.ingrammicroservices.com

By working with Ingram Micro, you'll have access to a highly tenured reverse logistics teams across the globe. You'll have the ability to customize your returns process, assess aftermarket sales channels, determine disposition processes, or you can leverage our team to provide guidance on the best way to approach your returns management process. From return shipping costs to the second or third life of your product, returns should not be keeping you up at night.

SITE SELECTION

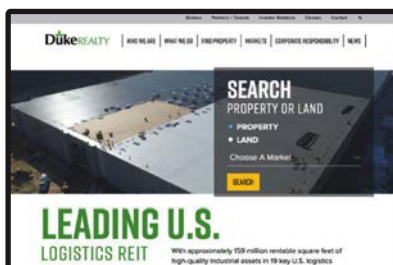
CENTERPOINT PROPERTIES • www.centerpoint.com

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.



IN THIS SECTION: Site Selection

SITE SELECTION



DUKE REALTY • www.dukerealty.com

Duke Realty Corporation owns and operates approximately 156 million rentable square feet of industrial properties in 20 major U.S. logistics markets. Duke Realty is publicly traded on the NYSE under the symbol DRE and is listed on the S&P 500 Index. The company maintains a Baa1 rating from Moody's Investor Service and a BBB+ rating from Standard & Poor's Financial Services.

ELECTRICITIES OF NORTH CAROLINA • www.electricities.com

This membership organization includes public power communities in North Carolina, South Carolina and Virginia. ElectriCities also provides management services to the state's two municipal power agencies — North Carolina Municipal Power Agency Number 1 and North Carolina Eastern Municipal Power Agency. ElectriCities serves the needs of public power communities through collective strength, wisdom, and action — while promoting more success for its citizens. For more information, contact Brenda Daniels at (800) 768-7697, ext. 6363



HOOSIER ENERGY • www.hoosierenergy.com

Hoosier Energy is a generation and transmission cooperative providing electric power to 17 member electric distribution cooperatives in central and southern Indiana and one member cooperative in Illinois. Based in Bloomington, Ind., Hoosier Energy operates coal, natural gas, and renewable energy power plants and delivers power through a 1,450-mile transmission network. Hoosier Energy is a Touchstone Energy Cooperative, one member of a nationwide alliance of electric co-ops providing high standards of service according to four core values: integrity, accountability, innovation, and commitment to community.

PHARR-REYNOSA INTERNATIONAL BRIDGE • bridge.pharr-tx.gov

The Pharr-Reynosa International Bridge serves as one of the most important ports of entry for the U.S.-Mexico border. It handles both commercial and passenger-operated vehicles and crosses about 175,000 vehicles monthly. The Pharr International Bridge is also the only commercial bridge crossing in Hidalgo County, and is the number two bridge in the country for crossing of fruits and vegetables. The Pharr International Bridge connects US Hwy. 281/I-69W to the City of Reynosa, Tamaulipas, the fastest growing city in Mexico.



IN THIS SECTION:

Site Selection - Transportation Mgmt/Freight Mgmt

SITE SELECTION

WATSON LAND COMPANY • www.watsonlandcompany.com

Watson Land Company is a developer, owner, and manager of industrial properties throughout southern California. With a legacy spanning more than two centuries, Watson's dedication to customers is based on delivering functional, high-quality buildings within masterplanned centers, coupled with unmatched customer service. Watson Land Company's long-standing tradition of integrity, innovation, and fiscal responsibility has made it one of the region's most respected names in commercial real estate, and one of the largest industrial developers in the nation.

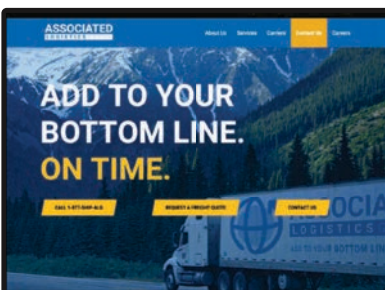
TMS

MGN LOGISTICS • www.mgnlogistics.com

MGN Logistics Inc.(MGN), is a leading provider of IT solutions for the freight management and transportation industry. Headquartered in Pennsylvania, with offices in Boston, Orlando, Chicago, New Jersey and Dominican Republic, the company has been providing sophisticated transportation related technology to Fortune 1000 companies since 2000. Offering advanced cloud-based freight management software, best-in-class freight audit and payment services, as well as enhanced analytics and benchmarking, MGN Logistics has quietly been the engine behind some of the country's largest brokerages and web-based 3PLs. With their product offerings now available to small and mid-sized companies, find out why the largest brokerages in the country have entrusted their freight management solutions to MGN Logistics.



TRANSPORTATION

ASSOCIATED LOGISTICS GROUP • associatedlogistics.com

No project or demand is too small or complicated for Associated Logistics Group to tackle. No matter your freight needs—less-than-truckload, full truckload, intermodal, heavy haul or a custom solution—ALG has a solution for you. The company pairs you up with a dedicated agent that is right for you, and they will always be available when you need them.

TRANSPORTATION MGMT/FREIGHT MGMT

SYFAN LOGISTICS • www.syfanlogistics.com

Since 1984, Syfan has provided customers with a competitive advantage through superior transportation and logistics services. Syfan consistently strives to meet and exceed customer expectations of service through timely communication and quality information. Leveraging its rich experience and dedicated team, Syfan's commitment is to provide you with on-time pickup and delivery—every time.



[IN FOCUS]

INBRIEF

New Services and Solutions

> TECHNOLOGY



> Arvato Supply Chain Solutions

deployed the AutoStore order fulfillment system in a new facility in Dortmund, Germany, to support international customers in the fashion industry. The system has a capacity of approximately 180,000 bins and 280 robots, automating processing, storage, and picking of incoming goods.

> DAT Freight & Analytics

introduced *Loadsure*, a pay-as-you-go digital insurance solution for shippers, brokers, and motor carriers on the DAT network, a marketplace for spot truckload freight. DAT customers can add or expand coverage to insure a load directly from DAT's load boards.

> **Imaginnovate** rolled out final-mile software *Fleet Enable* to automate the scheduling of white-glove shipments to last-mile customers. The cloud-hosted software generates cost-efficient routing for

drivers, as well as streamlines dispatch, billing, invoicing driver settlements, and customer management.

> **Nuvocargo**, a digital platform for U.S./Mexico trade, unveiled a billing dashboard that provides a transparent statement of accounts. The new dashboard allows shipper clients to manage their cross-border shipments in real-time from a single platform and helps consolidate charges and invoices for shipments.

> Shipping and receiving personnel can interact with multiple drivers instantly with Dok-Chat Logistics Communication Software from **Rite-Hite**. The cloud-based system minimizes face-to-face interactions and improves shipping and receiving efficiency with real-time messaging.

> **Sync.io** introduced a booking and allocation management solution to accelerate ocean carrier booking processes. The new offering streamlines ocean booking execution, matches vendor demand to carrier supply, and provides a view of carrier performance.

> **C.H. Robinson** launched Market Rate IQ, a tool that shows companies how their spot rates compare to



> **Maersk** and **Canadian Pacific** opened a transload facility in Vancouver, Canada, to offer customers the ability to transload international containers into domestic 53-foot trailers and achieve cost savings for domestic distribution. The 117,000-square-foot, 103-door Pacific Transload Express facility was completed in August 2021 and supports fast-moving consumer goods as well as automotive parts.

a third-party benchmark. Created by its technology incubator, C.H. Robinson Labs, Market Rate IQ incorporates DAT's *RateView* and shows shippers which factors in their U.S. spot pricing are market-driven and which they can control.

> **Global Technology Systems (GTS)** now offers a program to manage replacement batteries for uninterruptible power supplies for devices such as chargers, barcode scanners, and mobile printers. By tagging and tracking each GTS battery, the company alerts companies when it's time for

a replacement and can ship the battery to customers.

> SERVICES

> Shippers and carriers can avail of **Home Depot's** flatbed capacity under its partnership with freight technology company **Loadsmart**. The new platform, called *Flatbed Messenger*, pairs capacity and price to a shipment, combining Loadsmart's algorithms with dedicated capacity from Home Depot to help other shippers find flatbed space at lower rates.

> **The Port of Wilmington**

completed the first phase of its electrification project, opening a new container yard with five all-electric rubber-tired gantry cranes. The new Kone Cranes feature precise micro motions for direct loading and unloading of containers.

> Automation provider **Dematic** partnered with **Groupe Robert** on a new distribution center in Quebec, Canada, that will support high-density storage and fulfillment of fresh and frozen products. Expected to be completed by February 2023, the facility will feature storage capacity for 60,000 pallets.

> **WIN** relaunched as **Centerboard**, with the aim of providing neutral, shipper-centric transportation and supply chain management offerings, giving shippers more control over their supply chain. Centerboard is rolling out new features for its existing offering, which will now operate as WIN, by Centerboard.

> **Alabama Motor Express** (AMX) opened a terminal in Jackson, Georgia, giving shippers in the greater Atlanta area access to its trailer pool, local drivers, and support.

> **Alibaba.com** introduced Dropshipping Solutions to support e-commerce businesses. Its new dropshipping services give e-tailers access to thousands of vetted global suppliers

and more than one million products at wholesale prices through the Alibaba.com Dropshipping Center.

> **Aeronet Worldwide** opened South Texas and Mexico transborder operations, based in San Antonio, to provide logistics services for maquiladoras—factories from global companies manufacturing in Mexico.

> **Ryder** and autonomous technology developer **Embark Trucks** entered a partnership to launch a network of up to 100 Embark transfer points. Freight from driverless long-haul trucks will move to driver-enabled trucks for first- and last-mile delivery at the transfer points, where Ryder will provide yard operations, maintenance, and fleet management.



> **Cleverpod's** CP01, an electric three-wheeler for express delivery, features customizable cargo space. It has a cabin that can protect vulnerable goods from moisture or shock and a climate control system for operator comfort. It offers a range of sensors, a multimedia interface, and an onboard virtual assistant to support last-mile delivery applications.

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uline.com

CALENDAR

Logistics Events 2021-2022

Connect with industry peers, join thought-provoking discussions, and discover the future of supply chain.

NOV 9, 2021
CAMBRIDGE, MA

Crossroads 2021

bit.ly/MITSupplyChain

Discover how emerging innovations intersect with supply chain management. This event connects experts from MIT with MIT CTL, a global supply chain education and research organization, for a day of learning. Attendees can go to this hybrid event on the MIT campus or stream it remotely.

NOV 16-17, 2021

Smart Ports: Piers of the Future

smartports.tv

The world's largest ports—Antwerp, Barcelona, Busan,

Hamburg, Los Angeles, Montreal, and Rotterdam—share their plans to address sustainability and digital transformation. This virtual event will be live-streamed from the Smart City Expo World Congress event.

JAN 24-26, 2022
ATLANTA, GA

JumpStart 2022

smc3jumpstart.com

Join in-depth panel discussions focused on supply chain trends, transportation regulations, emerging technologies, and infrastructure. The lineup is tailored to provide carriers, shippers, 3PLs, and other professionals with a full picture of the multimodal supply chain.



FEB 7-9, 2022
LAS VEGAS, NV

RLA Conference & Expo

bit.ly/RLAConf

This annual conference is designed to bring reverse logistics professionals together to exchange ideas and attend powerful keynote

speakers, content-driven panel discussions, roundtables focused on topics such as circularity and the last mile, and case studies, as well as ample networking opportunities throughout.

MAR 8-10, 2022
MIAMI, FL

Air Cargo Americas

bit.ly/AirCargoEvent

Executives from the aviation and logistics sectors exchange views and best practices to enhance the growth of the cargo industry, covering topics such as security, responding to market changes, and controlling costs while streamlining customer service.

These in-person events were scheduled to proceed as of press time.

United States Postal Service Statement of Ownership, Management and Circulation

(Required by 39 USC 3685)

- Publication Title:** Inbound Logistics
- Publication No.:** 703-9903
- Filing Date:** October 2021
- Issue Frequency:** Monthly
- Number of Issues Published Annually:** 12
- Annual Subscription Price:** Request
- Complete Mailing Address of Known Office of Publication:**
Five Penn Plaza, New York, NY 10001
- Complete Mailing Address of Headquarters or General Business Office of Publisher:** Five Penn Plaza, New York, NY 10001
- Full Names and Complete Mailing Addresses of:**
Publisher—Keith Biondo, Five Penn Plaza, New York, NY 10001
Editor—Felecia Stratton, Five Penn Plaza, New York, NY 10001
- Owner:** Thomas Publishing Company LLC
Five Penn Plaza, New York, NY 10001
C.T. Holst-Knudsen, Five Penn Plaza, New York, NY 10001
J. Andrade, Five Penn Plaza, New York, NY 10001

15. Extent & Nature of Circulation	Average No. Copies Each Issue of Circulation During Preceding 12 Months	Average No. Copies of Single Issue Published Nearest to Filing Date
a) Total No. Copies	40,764	41,137
b) Paid and/or Requested Circulation	37,497	37,411
c) Total Paid and/or Requested Circulation	37,503	37,417

d) 1. Free Distribution by Mail	1,435	1,410
e) 4. Free Distribution Outside the Mail	0	0
f) Total Free Distribution	1,435	1,410
g) Total Distribution	38,938	38,827
h) 1. Copies not Distributed	1,826	2,310
2. Return from News Agents	—	—
i) Total	40,764	41,137
Percent Paid and/or Requested Circulation	96.31%	96.37%

- Signature and Title of Editor, Publisher, Business Manager or Owner:** Keith Biondo, Publisher

Combined Statement of Digital and Print Circulation

- Publication Title:** Inbound Logistics

	Average No. Digital Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
Printed Circulation as reported on PS Form 3526, Line 15C	37,503	37,417
Digital Circulation	23,076	22,688
Total Circulation	60,579	60,105

- Signature and Title of Editor, Publisher, Business Manager or Owner:** Keith Biondo, Publisher

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NO TIME TO DIGRESS

// spies the pinpoint precision and exacting calculations needed to pull off the shooting of the latest installment of the James Bond franchise, *No Time to Die*.

Fall Release

No Time to Die was released in cinemas on October 8, 2021 in the United States from MGM via their United Artists Releasing banner and on September 30 in the UK through Universal Pictures International.



LIGHTS, CAMERA, ACTION!

For an ambitious action sequence where James Bond is rescued from the ocean, CMA CGM amended its shipping schedule to make sure the *No Time to Die* crew could fly a seaplane under cranes at CMA CGM-operated Kingston Container Terminal in Jamaica.

Filming at the busy terminal—a transshipment hub for the CMA CGM Group in the Caribbean, located at the exit of the Panama Canal and the crossroads of the North/South and East/West lines—was no easy feat. It involved mobilizing the vessels CMA CGM *Fort Saint Georges* (2,260 TEUs) and CMA CGM *Fort De France* (3,504 TEUs) and more than 1,000 containers. In addition, a dozen crew, including the ship master, took part in the filming.

An international CMA CGM team supported the project as well. The team members hailed from the head office in Marseille and CMA CGM-operated terminals in Kingston and Dunkirk.

AGENT ON THE MISSION

Whether by road, air, or sea, DHL moved the equipment needed to keep the cameras rolling for the past five James Bond films. Supporting the Secret Service agent on his mission, the logistics provider also activated its express network for urgent or last-minute shipments, staying ahead of ever-changing international regulations for cargo.

For the latest film, DHL moved film equipment between Norway, Jamaica, Italy, and across the UK, ensuring the production's two filming units had the right equipment at the right time and place.

As part of the partnership, DHL also transported eight original film vehicles from Norwich, Norfolk, in the UK across the Atlantic to Los Angeles. The main attraction of an exhibition at the Petersen Automotive Museum, the vehicles include five Aston Martins, two BMWs, and one Lotus Esprit S1, known to fans as Wet Nellie from *The Spy Who Loved Me*.

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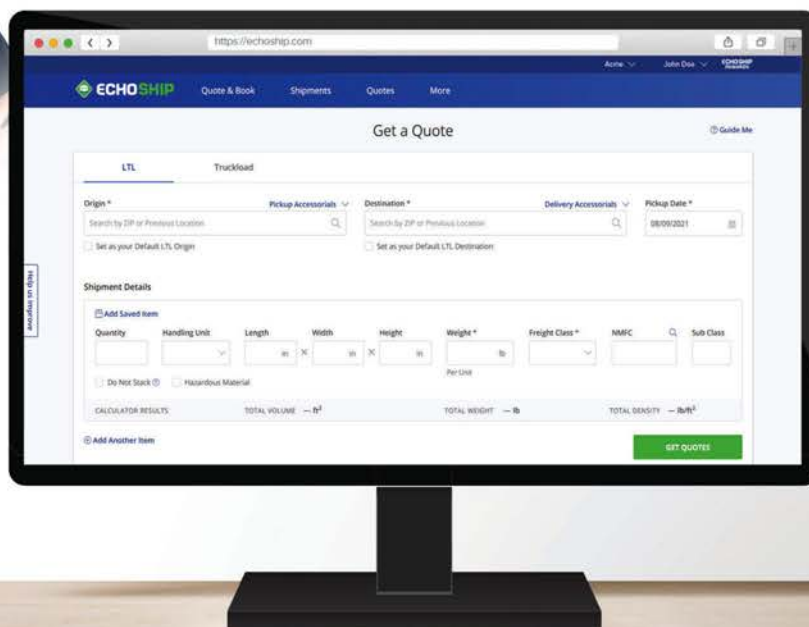
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