

SPECIAL REPORTS

**ALASKA:
THE CALL
OF THE WILD**

**3PLS TAILOR
CUSTOM
SUPPLY CHAINS**

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THE MAGAZINE FOR DEMAND-DRIVEN ENTERPRISES

APRIL 2021

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THE AGE OF ACCELERATION

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Info **SNACKS**

BITE SIZED SUPPLY CHAIN/LOGISTICS INFORMATION

BOX SCORE

U.S. producers in 2020 made 407 billion square feet of corrugated product, from e-commerce delivery boxes to fruit crates. The 3.4% year-over-year rise



was equivalent to about 477 square miles of additional corrugated board, enough to cover New York City and then some.

— Fibre Box Association

United Cargo has been busy. Since the pandemic the air carrier has:

- Operated more than 11,000 cargo-only flights carrying more than 570 million pounds of freight.
- Transported more than 113 million pounds of medical and pharmaceutical products on both cargo-only and passenger flights.
- Moved approximately 10 million COVID-19 vaccines.



\$2B

FedEx's initial investment toward a new goal of achieving carbon-neutral operations globally by 2040. The net-zero emissions plan centers on three key components: vehicle electrification, sustainable energy, and carbon sequestration.

A HIRE POWER

New competition from warehousing has had a major impact on commercial trucking. While heavy and tractor trailer trucking has seen around 9 new job postings for every hire, warehousing sees 2 hires for every 1 job posting.

— Coyote Logistics and Emsi study



STREET SMARTS

The state of Pennsylvania is now classifying select robots as humans — at least when it comes to its traffic laws. The law, which went into effect earlier in 2021, stipulates that autonomous delivery robots can maneuver on sidewalks, pathways, and roadways in Pennsylvania. They can carry up to 550 pounds of cargo at speeds of up to 25 miles per hour on roadways but must cap their speed at 12 miles per hour in human — presumably — pedestrian areas.

85%

of Americans have made at least some change in the food they eat or how they prepare it because of the pandemic, leading to a tumultuous food supply chain.

— 2020 Food & Health Survey, International Food Information Council



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From hyperautomation to wearable devices that emit worker proximity alerts, fast-emerging technologies put supply chain professionals on the fast track to improved safety, visibility, flexibility, efficiency, and sustainability.

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IL editors select and spotlight the most innovative providers of logistics IT technology. By listing the solutions they offer and the industries they serve, this list



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Providing solutions that fit to a T, logistics providers are helping shippers increase visibility, flexibility, and accuracy. Offering seamless technology integrations and tailored transportation networks, these providers are well-suited supply chain partners.



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While waiting for the pandemic to blow over, skilled shippers developed effective transportation strategies that will protect them in times of future disruption, no matter the conditions.

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WEB_CITE CITY

This categorized guide to leading transportation, logistics, and technology websites streamlines your search for new partners.

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Kenco has a dog in the fight to be counted as one of Inbound Logistics' Top Ten 3PLs for 2021, and he's adorable. Much like Kenco itself, Kenny is out to win you over by being the best in class. For 70 years, we have proven time and again that we are worthy of being at the top because of our work ethic, integrity, innovative solutions, and thousands of hard-working employees that power our brand.

Vote again this year for Kenco as a Top 10 3PL. 2020 was a "ruff" year, but partner with Kenco and Kenny, and let's make 2021 a Top Dog year!



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While protecting his teammates and helping customers manage unprecedented, high-volume e-commerce operations, Mike Honious, president and chief executive officer at GEODIS, also managed to launch a new digital platform to help expand last-mile delivery options during the pandemic.

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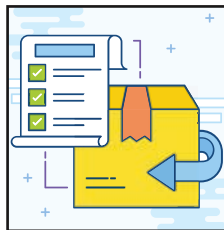
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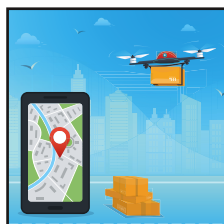
OVERCOMING THE RETURNS CHALLENGE

As parcel volumes soar, it's easy to overlook returns services. Considering that consumers are three times more likely to return an online purchase, it is vital to find ways to manage returns with greater efficiency and lower costs. bit.ly>ReturnsChallenge



BUILDING THE NEXT GENERATION OF WOMEN LEADERS

The logistics and e-commerce sectors are fast-growing and exciting fields that offer many career opportunities. Here's how to empower women just starting out in the sector to take control of their career paths and work toward becoming the next leaders in logistics. bit.ly/BuildSCLeaders



3 STEPS TO A CONTACTLESS SUPPLY CHAIN

For years, everyone involved in manufacturing, shipping, transportation, and deliveries has tried to align on an electronic bill of lading, which could enable contactless supply chains. While it might feel out of reach, these three steps could help digitize the pickup and delivery process. bit.ly/ContactlessSupplyChain

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CHECKING IN

GM & Kroger: Transformers



Keith Biondo, Publisher

The interconnection between advanced manufacturing, automation, and supply chain management had a boost in the past year. Part of that boost was due to the virus economy, but most was due to the genius and creativity of those seeking solutions to tough business challenges amplified by ever-evolving customer demands. Transformation.

Just as the silo-crashing impact that supply chain management practices has had on enterprise operations and supplier/customer connections, this confluence is tearing down silos between manufacturing and brand operations to the benefit of customers and profit & loss performance. Old-world business operations are being torn apart and reconfigured and will leave late adopters behind. The evolutionary pace has quickened with dramatic impact. Here are a couple of examples:

- In late 2020, General Motors debuted a new manufacturing facility dedicated to additive manufacturing, otherwise known as 3D printing. The facility is small by GM standards—only 15,000 square feet. But it looms large in future importance. This Additive Industrialization Center holds two dozen 3D printers capable of printing parts and components in plastic, polymer, and metal. GM engineers soon will have access to an entire operation they can use to speed vehicle development and cut costs when designing new vehicles.

Another benefit of the 3D printing operation is to reduce the cost and time to develop and prototype expensive “what-ifs”, which may not be tied to specific vehicle development but will raise knowledge and experience useful for future vehicles and products.

- On the branding side, supermarket giant Kroger is applying new technology in a futuristic warehouse using picking robots. The mission? To enhance its brand, Street persona, and operations. The new facility is called a “shed” and is the first of 20 automated warehouses allowing Kroger to build grocery orders containing 50 stock items in 6 minutes, versus 30 to 45 minutes when employees do the walking and the picking.

Kroger stunned analysts with a 92% e-commerce gain year over year, and it is staging “sheds” to maintain that trend. “We continue to be excited about the elevated experience that this will bring to our customers across the country as we continue to open additional facilities,” said Rodney McMullen, chairman and CEO of Kroger. The Street analysts agreed but their focus was a different kind of stock picking.

Your own transformational toolset is at hand in this edition of *Inbound Logistics*. It is packed with real-world technology for everyday business leaders seeking to drive enterprise advancement. You are not just adapting and adopting these technological improvements for your own company; you are also setting the example for others to follow and playing a crucial role in business process evolution empowering demand-driven enterprises.

Keith Biondo

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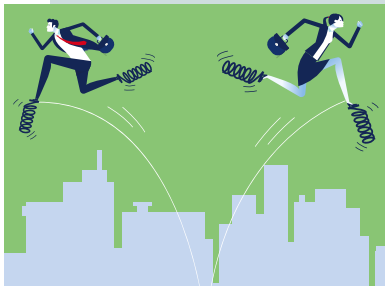
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What's the supply chain buzzword of 2021?



AGILITY

Companies must be nimble in their approach to logistics and warehousing operations. Corporations that embrace agility can quickly maneuver and clear roadblocks when disruptions arise.

—Grant Koch

*Solutions & Innovation Director
BDP International*

Over the past 12 months, we have seen disruptions within an already challenging global logistics supply chain. Traditional seasonal patterns and trade flows have been upended. Adding to the complexity are congestions at seaports and inland locations. Offering agility to trading partners is critical to future success.

—Michael Britton

Managing Director, Sealand Americas

Post COVID-19, routes and transport modes have shifted or even vanished completely. To mitigate the constant changes, shippers have to create agile supply chains that can react quickly to current market conditions.

—Florian Langenmay

*Head of Business Development USA
DACHSER Americas Air & Sea Logistics Corp.*

Agility requires a fundamental shift from the historical focus on chasing accuracy and optimizing individual functions. Increased agility enables companies to sense and respond in concert across the end-to-end network.

—Jay Muelhoefer

CMO, Kinaxis

ELASTIC LOGISTICS

This means a company's supply chain can scale based on demand. Shippers that implement digital logistics processes, along with new technologies, can expand and shrink supply chain activities as needed.

—Oren Zaslansky

CEO, Flock Freight

SCALE

In 2021, direct-to-consumer e-commerce companies will scale quickly whether they planned on it or not. They'll need to rise to the occasion so as not to be crushed under their own success. Scalable solutions for fulfillment, technology, and marketing that won't break when sharp growth happens will be critical.

—Esther Kestenbaum

President, Ruby Has

SUSTAINABILITY

Everyone now needs to think about how to automate environmental reporting in their supply chain in order to make reporting feasible without adding people or putting out non-auditable numbers.

—William Fox

Chief Product Officer, Data Gumbo

INFLATION

Economic indicators show interest rates are rising and bonds are almost as attractive as dividend rates from major stocks. If that happens, we'll see gas, commodities, and labor costs all go up. That's good news for supply chains because we can be a source of cost reduction and savings.

—David Landau

Chief Product Officer, BluJay Solutions

PIVOT

The pandemic, by sowing chaos and amplifying the bullwhip effect, brought more to the fore that shippers and carriers have to get better visibility on what's happening and be ready to pivot to alternatives.

—Michael Zimmerman

*Partner, Americas Lead
Kearney*

MIDDLE MILE

As last-mile challenges receive all the attention with the rapid growth of e-commerce, the middle mile is beginning to draw the focus. Middle mile is the execution of deliveries from warehouses or distribution centers to brick-and-mortar facilities.

—Sean Mueller

*VP, Business Development
Symbia Logistics*

FLEXIBILITY

Supply chains globally saw immense and rapid change in 2020, causing demand shifts, disrupted operations, inventory management challenges, and overall financial pressures, bringing about unforeseen chaos. Supply chain leaders are adapting to the new reality by creating a flexible yet resilient strategy that can proactively and rapidly adapt to change to minimize the impacts due to disruption and future-proof their supply chains for adaptability.

—**Nate Rosier**
SVP, Consulting, enVista

CAPACITY

Everyone wants capacity. Everyone needs capacity. But with the shortage the industry has experienced in most of 2020 and into 2021, most companies have failed to find the magic formula to attract and retain capacity. Something to consider—drivers are loyal to companies that treat them well, not just financially, but through giving them the respect, communication, and excellent service they deserve.

—**Roy Rosell**
Product Marketing Manager
NEXT Trucking

POST-COVID BOOM

As in, planning for the post-COVID boom, capitalizing on the post-COVID boom, and scaling for the post-COVID boom.

—**Patrick Maley**
Chief Marketing Officer/EVP Product
Strategy and Marketing
BluJay Solutions

DELAYED, DELAYED, DELAYED

The situation at the West Coast ports is the result of staggering ripple effects starting with consumer demand to scarcity of ocean liners and shipping containers in Asia and extends to backlogs in unloading and moving full containers. Then pile on a lack of workers in ground operations to wait times on getting product onto shelves.

—**Tom Pelliccio**
EVP International
Pilot Freight Services

RESILIENCE

For critical products, we need supply chains that are resilient to disruptions, or able to return quickly to normal operations. Detailed supply chain mapping and analytical stress testing can indicate weak points and potential solutions to mitigate disruptions.

—**Julie L. Swann, PhD**
A. Doug Allison Distinguished Professor & Department Head
Fitts Industrial and Systems Engineering
North Carolina State University

Achieving true supply chain resiliency involves evaluating your level of dependency on suppliers, transportation, and manufacturing, as well as scenario and demand planning for unexpected shifts. Being resilient means having the ability to shift and rapidly replan as needed.

—**Scott Deakins**
COO, Deacom

Visibility and real-time risk monitoring have always been important, but the inclination to invest in these critical tools was limited. For the 2021 landscape, supply chain resilience is at the forefront of managing risk and being better positioned to handle—and even gain advantage from—disruptions.

—**Kaushik Sarda**
Sr. Director, Supply Chain Solutions, Americold

Supply chain resilience will prove to be the secret ingredient of successful global organizations in 2021, as they learn to quickly anticipate, adjust, and respond to the growing number of unexpected events that arise around the world.

—**Lauren Clark-Bakewell**
Chief Product Officer, Finance & Risk, Dun & Bradstreet

CONTROL

Supply chains were forced into survival mode as our normal cornerstones like efficiency, optimization, and sustainability were not always an option. As businesses adapt

post-pandemic, success will be had by those that identify and implement cost, service, and growth controls up and down their supply chain.

—**Mike Glover**
VP E-commerce Fulfillment
LEGACY Supply Chain

Have a great answer to a good question?

Be sure to participate next month. We want to know:

What fictional character or historical figure would you put in charge of global vaccine logistics and distribution?

We'll publish some answers.
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Quick TIP

Create shared data flows to exchange information faster and quickly manage exceptions whenever or wherever they occur to keep the physical flow of goods moving efficiently.

—Chris Kirchner

CEO and Co-Founder, Ssync.io



Re. 11 Supply Chain Predictions for 2021

bit.ly/11_SC_predictions

As the shift in demand continues to omnichannel and e-commerce, our supply chain strategies must also include the ability to proactively know when any disruption in global supply will cause a delay or shortage in On-Time, In-Full (OTIF) during the first mile to meet our manufacturing and distribution requirements while also meeting customer demand.

Visibility technology solutions in 2021 will provide the ability to not only predict when there will be a disruption in the first mile, but then trigger actionable insights to shift sourcing requirements, enable inventory rebalancing in the network, or optimize product allocation in real time.

Mark Holmes

Supply Chain Practice Leader, UST

Digitization is not going anywhere; it's only going to accelerate. Here is how the digital supply chain will become more prominent and accelerate at a speed we've never seen before:

Increase automation. More and more supply chains will be considering easy-to-deploy robotic solutions and adopting IoT and sensors for efficiency and to better track materials.

Enhance data and analytics. As companies are still addressing COVID-19 challenges, they're looking at solutions that offer visibility and flexibility, and advanced data and analytics can improve supply forecast accuracy.

Integrate platforms. B2B trading platforms like Alibaba.com host a wealth of supplier options and increasingly have the functionality we've come to expect on B2C platforms, which can help diversify supply chains and build resiliency for future shocks.

Incorporate blockchain. This allows for more transparent and accurate end-to-end tracking in the supply chain, which will ultimately help manage the supply chain more effectively and efficiently.

Curt Anderson
Founder, B2Btail

Re. Checking In, February 2021: Buddy, Can You Spare a Can?

bit.ly/Feb2021_CheckingIn

Great editorial. I have read about U.S. farmers trying to move apples or hay overseas with no containers available because the ocean carriers want to get them back to move high-ticket items back to the United States. I hope your editorial will be forwarded to some politicians who might do something for American farmers.

Bob Eck

Fast TAKES

On the Suez Canal blockage

Unforeseen, disruptive events like this are part and parcel of today's modern world. The problem is the fragility and vulnerability of supply chains. The ability of the cargo ships behind *Ever Given* to forecast outcomes is key; the right decisions need to be made by scenario modeling the drivers in real time.

Ian Stone
CEO, Vuelta

This was a vivid example of a bottleneck—one of two terms everyone learns in supply chain management. The second is bullwhip effect, which in this case means consumers will face certain shortages of products in the near-term and will be paying more for them in the mid-term.

Rich Thompson
Global Head, Supply Chain & Logistics Solutions, JLL

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10 TIPS

Improving the Customer Experience

Your customer experience represents the primary touchpoint between your revenue and customers, so the experience you offer can make all the difference between short-lived success and true market longevity.

1 UNDERSTAND THAT GOOD CUSTOMER SERVICE IS A CONTINUOUS LEARNING PROCESS.

Pay attention to your customers' experience by asking where you can improve. Collect the feedback and create a monthly training and development course for your team. Include some basic customer service tips on active listening and conflict resolution to drive home the comprehensive customer experience.

2 ROLL OUT THE WHITE-GLOVE TREATMENT.

Think about this statistic—seven in 10 U.S. consumers say they've spent more money to do business with a company that delivers great service. There is no better way to make a customer feel like a priority than old-fashioned hospitality. The Ritz-Carlton Hotel, for example, empowers its employees to spend up to \$2,000 to solve customer problems without any manager approval. This no-questions-asked mentality makes the customer a priority and keeps employees focused on their goal: delight the customer.

3 USE TECHNOLOGY TO YOUR ADVANTAGE.

When it comes to using technology to enhance the customer experience,

the sky is the limit. Think about how technology can simplify your customers' day-to-day transactions and give them peace of mind. A great example is a customer portal—a centralized location for your customers to see pricing and order status, and pay invoices in real time. This transparency helps create a true partnership by building trust between you and your customers.

4 HELP YOUR CUSTOMERS HELP THEMSELVES.

Create content and resources for your customers. Set yourself up as the subject matter expert to give your customers the confidence to always come to you for answers. The end goal of creating this content is to educate the reader on how your work benefits their day-to-day life.

5 BE ACCESSIBLE TO CUSTOMERS.

The best ability is availability. If your customer contacts you, it's usually because they have a problem and think you're the person to fix it. If they can't find you, they'll find someone else to solve their problem.

6 ARGUING NEVER LEADS TO ANYTHING GOOD.

The last thing you want to do is argue with an already frustrated customer. Instead, try to get a clear understanding of why your customer is frustrated and work together to find the right solution.

7 BE ADAPTABLE IN NEW SITUATIONS.

"Customer service is like a box of chocolates; you never know what situation you're going to get." In customer service, your days are never the same because people and

their personalities aren't the same. Always be prepared for new situations to pop up and adapt quickly.

8 ADMIT YOU DON'T ALWAYS HAVE ANSWERS.

While it may be embarrassing when a customer knows more than your service representative, getting flustered while trying to hide a lack of knowledge could cause you to lose business. Instead, encourage your reps to admit when they don't know something and offer to find the answer.

9 REMEMBER THAT CUSTOMER SERVICE IS EVERYONE'S JOB.

"Your most unhappy customers are your greatest source of learning," according to Bill Gates. Every company must put their best efforts at each level to achieve a higher customer satisfaction. Support should always be cross-departmental.

10 STICK TO YOUR WORD.

It's OK to take a short-term loss in hopes that you can win the customer's trust for the long-term gain. With trust, customers will view your transactions as a partnership and will see you as an essential extension of their business.

SOURCE: TIM GRIFFIN, DIRECTOR OF MARKETING & MEDIA, C.L. SERVICES, INC.



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Confections

SEASONAL CANDY CLAIMS ABOUT 25% OF THE CANDY AND CONFECTIONERY MARKET'S ANNUAL SALES. —PMMI Business Intelligence



WHERE ARE MY PEEPS?

Peeps looked to new partnerships and product expansion to alleviate its warehouse operations challenges and stay resilient during the pandemic.

Just Born Quality Confections, the Pennsylvania factory that produces the marshmallow treats, was forced to temporarily shut in March 2020 as the virus spread. The company opted to forgo making the ghost-shaped treats for Halloween, tree shapes for Christmas, as well as heart shapes for Valentine's Day to focus on meeting the overwhelming Easter demand.

The facility resumed operations in time for the spring rush, with limited production and new protocols in place to protect employees. It also launched two unique flavors: Hot Tamale and Fruit Loops.

The company took some pressure off its operations by working its way into different grocery aisles, collaborating with brands on new Peeps-flavored products including Lofthouse sugar cookies, Kellogg's cereal, and even International Delights coffee creamer.

CHOCOLATE SUPPLY CHAIN: BEAN TO BAR NONE

Consumers are more conscious about the ingredients in the chocolate they buy due to vegan diets, lactose allergies, climate concerns, and ethical spending. This increased the demand for premium products and a bean-to-bar approach to manufacturing, says Fortune Business Insights data. These trends are affecting the chocolate supply chain, the report says:

High-quality ingredients: Bean-to-bar production is gaining interest and driving growth in the cocoa and chocolate market. In this process, the chocolate maker controls every step from cacao bean to chocolate bar. One of the main differences between bean-to-bar and mass-produced chocolates is the quality and purity of the ingredients.

Ethical sourcing: Consumers are paying more attention to the agro-climatic aspect of production and ethically produced beans. Sustainability issues, climate change, and unethical sourcing are driving the growth of the bean-to-bar chocolate market.

Health and wellness: A greater focus on health and wellness in the general global population is increasing the demand for high-quality ingredients. With consumers increasingly concerned about the impact of food on their health, the quality of cocoa is becoming a growing topic of conversation, therefore providing an opportunity for market growth.

THE GLOBAL COCOA AND CHOCOLATE MARKET SIZE WAS \$44.35 BILLION IN 2019 AND IS PROJECTED TO REACH \$61.34 BILLION BY 2027. —Fortune Business Insights Report

SKITTLES TASTES THE RAINBOW, TURNS IT GREEN

Skittles will be the first of Mars Wrigley's products to get environmentally friendly packaging starting in late 2021 or early 2022. The candy manufacturer teamed up with biotech company Danimer Scientific to develop the new, compostable packaging technology for some of its popular products in an effort to improve the environmental impact of small, flexible packaging.

The biodegradable packaging is created through a fermentation process using plant oils. The material breaks down at a reliable rate in industrial composting processes as well as at-home composting. Mars Wrigley aims to achieve 100% reusable, recyclable, or compostable packaging by 2025.





CANDY CRUSHING IT

Large global candymakers—especially those focused on e-commerce, the grocery segment, and entering new markets—found a sweet spot during the pandemic, reports CandyIndustry.com. Highlights from the report include:

- **Germany's Haribo** is breaking ground on its first U.S. candy factory, investing \$300 million in the project.
- **Italy's Ferrero Group** continues to grow. The company is building its first chocolate plant in North America, a \$75-million expansion set to open in spring 2021.
- **Bazooka Candy Brands** saw a 2% growth in year-end sales for 2020. Its e-commerce business grew significantly during the pandemic.
- **Argentina confections company Arcor** launched an e-commerce platform during the pandemic, which has been growing since May 2020.
- **Russian candy company Slavyanka's** sales suffered during the pandemic due to border restrictions and lower export sales, but is recovering through the launch of reduced-sugar products and snack bars to increase sales.
- **Nestlé** saw a 12% drop in its confectionery division for the first nine months of 2020 versus 2019, but e-commerce increased by 47%.
- **1-800-FLOWERS.COM** increased sales by \$185 million to a projected \$810 million due to online shopping surges and candy sales expansion.

DEMAND FOR BETTER-FOR-YOU SNACKS IS INCREASING, WITH 44% OF CONSUMERS EATING HEALTHIER DURING THE PANDEMIC. —FMI/The Hartman Group Report



HERSHEY TURNS OVER A NEW LEAF

For the first time, Hershey plans to manufacture vegan and dairy-free products, as well as zero-sugar treats and portion-controlled chocolate, to meet growing consumer demand for “better-for-you” snacks. During the pandemic, Americans are consuming more plant-based foods, and plant-based meat sales are soaring.

The brand has already rolled out some better-for-you products, such as Organic Reese's Peanut Butter Cups in both dark and milk chocolate varieties. Hershey

also partnered with sweetener company ASR Group on an equity investment in Bonumose, a startup creating plant-based food ingredients such as rare and natural sugars, to improve the taste of zero- and reduced-sugar chocolate.

Hershey's plant-based strategy comes on the heels of Nestlé confirming that vegan KitKats will be available in the U.K. later in 2021. The Swiss brand produces KitKats abroad, while Hershey sells them in the United States as part of a longstanding licensing agreement.



ONE FINES UPGRADE

Chicago-based Ferrara Candy automated packaging operations for its Trolli Sour Brite Worms and Black Forest Gummy Bears—two of its best-selling products—at its Bellwood, Illinois, facility. The upgrade increases efficiency by bringing Ferrara's primary and secondary packaging under one roof, says a PMMI report.

After four scale and bagger systems produced efficient primary packaging, the company implemented compact case packers. The scale has a fines-removal system that minimizes the excess sugar that collects at the bottom of each bag of candy. Fines can make the package look less attractive and interfere with the seal, which needs to close as cleanly as possible, PMMI says.

Phase one involved installing the combination weighers, each paired with a low-drop vertical form/fill/seal bagger, as well as mezzanine-level conveyor connections that take the freshly made candy to the weighers. Phase two addressed secondary packaging. Four automatic case packers were installed as well as four spiral conveyors, which take finished cases up to the mezzanine level and then to palletizing.

Before these upgrades, the candies were bulk-packed and shipped to another Ferrara facility for packaging due to lack of space in the Bellwood facility. However, the team selected automated equipment that fit where it needed to fit in the plant with some reconfiguring.

Each case packer completes 23 to 25 cases per minute, key for keeping up with the upstream candy-making system, which produces 127 pounds of gummy worms every minute, the report says.

LEADERSHIP

Conversations with the Captains of Industry

Overseeing the Shift to E-Commerce



Mike Honious
President and CEO,
GEODIS in Americas

In the midst of a global pandemic, managing peak-plus volumes, deploying automation technology, and overseeing the largest marketing initiative in GEODIS's history is all in a day's work for Mike Honious.

by Merrill Douglas

When GEODIS in Americas named Mike Honious its president and CEO, the company was deep in the middle of a major transition. It was October 2020, and COVID-19 had launched a tidal wave of industry changes due to surges in online shopping. As a third-party logistics (3PL) firm, GEODIS was helping many companies shift from an emphasis on brick-and-mortar sales to e-commerce through its suite of e-commerce solutions established prior to the pandemic.

E-commerce soared to peak-season levels as early as April and never slowed down. "I knew that we'd be in 'peak-plus' volumes when our traditional busy season actually arrived," he adds.

Besides supporting customers through these changes, Honious is guiding GEODIS in Americas through important marketing and technology initiatives. We caught up with him to learn more.

IL: How did you become a supply chain professional?

As an industrial engineering technology major at the University of Dayton, I focused on manufacturing and dreamed of one day becoming a plant manager. Then I heard about an opportunity to interview with Gap Inc.

I come from rural Indiana and knew very little about Gap Inc. However, my future mother-in-law told me it was a strong company with a bright future. My now-wife took me to a Gap store, and the rest is history. I joined Gap Inc.'s logistics team and worked for the company for 15 years in various management capacities before joining GEODIS in Americas in 2005.

IL: What's one experience from early in your career that helped to shape you as a leader?

Two years into my engineering career at Gap Inc., I was working on a project called forklift utilization to evaluate how to optimize forklift travel in a warehouse. Believe it or not, that turned into a warehouse management system (WMS) project. It was the early 1990s and predates the widespread knowledge and adoption of WMS within the supply chain.

The project taught me what it takes to implement new technology and gave me a realistic understanding of timelines. Everybody wants to move fast. When you're doing something for the first time, however, you have to work hard to understand everything the project will require and ensure you have the right resources in place to be successful. The lessons I learned during that project still hold true and help me today.

IL: When you became president and CEO, what were your main goals for the company?

My first goal was to continue our efforts to protect our teammates during the pandemic, including setting up our warehouses for social distancing and deploying the necessary personal protective equipment. My second goal was to help customers manage the shift to high-volume e-commerce operations.

To reach that second goal, among many other factors, we had to navigate capacity issues within small-parcel networks. No single company can handle all the volume consumers generate these days. To gain greater flexibility, we launched a new digital platform called City Delivery to improve and expand last-mile delivery options. This allows us to focus on where each product needs to go and the best way to get it there.

IL: Which projects get most of your attention these days?

We're in the middle of the largest marketing initiative in the history of the company, the "GEODIS Is" campaign. It's focused on e-logistics, which is what we call our suite of e-commerce services. The campaign seeks to educate brands that a successful business requires a successful supply chain, and to let them know how we can help.

Additionally, we were already deploying automation technology such as robotics before the pandemic. We've accelerated that in several areas, especially around labor, as that is especially scarce right now in our industry. I'm concentrating on how we further integrate robotics into our warehousing and inventory management systems to make them modular for rapid deployment.

We're also always focusing on new technology that allows for the capture of more sophisticated data to ensure that we can provide our customers end-to-end visibility into their supply chains, to offer greater business agility and resilience.

IL: How do you nurture talent at GEODIS in Americas?

We focus on fine-tuning our leadership with training customized for the individual. We have a series of executive coaching programs and have designed leadership classes that allow individuals to take the training that fits their needs. We leverage the 360-degree feedback tools, which are very popular. As a large organization of more than 13,000 employees in the

Guess Who's Coming to Dinner

Ask Mike Honious to name the business leader with whom he'd most like to sit down for dinner and conversation, and he proposes three very different dining partners.

"The first is Sheryl Sandberg of Facebook," Honious says. "She has been chief operating officer there since 2008. I was COO at GEODIS in Americas for about eight years before I became CEO. It would be interesting to talk about our challenges and accomplishments in our respective roles and how to push a company forward."

For his second dinner, Honious would join Dwayne Tucker, CEO of LEAD Public Schools, a charter school system in Nashville. As a member of LEAD's board, Honious has gained great respect for Tucker's work.

"Within a public school system, his organization has a graduation rate of more than 90%," he says. "The way he engages his teachers, his staff, and the students amazes me. There's a lot to learn from him."

The final dinner would be with Shawn Curran, COO at Gap Inc. "He took a chance and hired me when I was new to the industry, fresh out of college," Honious says. "I worked for him for about two years, and he allowed me to explore other areas within the company and ultimately grow as a professional. He was an important mentor and it would be great to reminisce about the decisions he made, what's important to him, and how he got to where he is today."

Americas, we have many leaders. Everyone is unique, and it's important to provide the right training for each one.

It's also essential we provide leaders and their teams the right data to help them tailor supply chain solutions to the needs of each customer.

IL: How do you like to spend time outside of work?

I like to spend my free time outdoors. I live on a lake in Middle Tennessee, and I love to spend time with my wife and two sons on our boat. I also love to volunteer and have coached youth baseball, basketball, and hockey. I also like to visit craft breweries. I'm intrigued by the way they've taken on the big brewers and disrupted the industry. Plus, it's always nice to enjoy a beer every once in a while. ■

[IN FOCUS]

NOTED

The Supply Chain in Brief

> GOOD WORKS



PLS Logistics Services, a third-party logistics provider, raised more than \$5,000 to benefit the Greater Pittsburgh Community Food Bank by hosting a virtual fund drive, providing more than 26,900 meals to those in need in the community. Local PLS employees also volunteered at two food bank distribution locations (*pictured*).

Energy manufacturing and logistics company **Phillips 66** recognized the dedication of Kansas City-area teachers by donating \$66,000 to provide critical supplies for their classrooms, including virtual learning materials, books, gym equipment, and art supplies.

Brussels Airlines, a subsidiary of Lufthansa Group, is helping UNICEF deliver COVID-19 vaccines, essential medicines, and medical devices to 16 countries in Sub-Saharan Africa. The airline has transported 130,000 vaccines to The Gambia, Sierra Leone, and Liberia. Two shipments with sterilized and disposable syringes were delivered to Côte d'Ivoire.

> SHOVEL READY

PhilaPort is constructing a \$42-million warehouse in South Philadelphia. The port's new facility is located one mile from the Packer Avenue Marine Terminal. The state is paying for the project under Gov. Tom Wolf's multi-year port development plan, an investment of more than \$300 million in cranes and infrastructure.



Blackline Cold Storage is building a new 298,000-square-foot cold storage facility at the Port of Houston in the TGS Cedar Port Industrial Park. The site will have multiple segregated temperature zones, 48-foot ceilings, up to 50 truck doors, and rail connectivity.

m&a

■ **Iptor**, a distribution and supply chain management services provider, acquired **The Mesa Group**, an information technology services provider for the distribution, light manufacturing, and retail industries.

■ Supply chain technology company **Descartes Systems Group** acquired **QuestaWeb**, a provider of foreign trade zone and customs compliance solutions.

■ International shipping and container transportation company **Hapag-Lloyd** acquired **Nile Dutch**, a provider of container shipping services to and from West Africa.

■ **Noble Supply & Logistics**, a global supply chain management provider, acquired **Tactical & Survival Specialties**, a provider of special operations equipment.

■ Global transportation and logistics company **Kuehne+Nagel** entered an agreement to acquire **Apex**, a transpacific and intra-Asia freight forwarder.

> RECOGNITION

• Third-party logistics provider **Sunset Transportation** was named a **Certified Women-Owned Business** by the Women's Business Enterprise National Council. The certification provides authentication to businesses that are at least 51% owned, operated, and controlled by a woman or women.

• **ArcBest** was awarded a **Bronze sustainability rating** from EcoVadis, which monitors, rates, and benchmarks the quality of a company's sustainability performance. The Bronze rating recognizes sustainability performance in the top half of all companies rated across the world.

> SEALED DEALS

• **SEKO Logistics** was named the official logistics partner for professional Scottish soccer club **Rangers F.C.** The club became Scottish Premiership champions in March 2021, spurring high demand for its retail products. Working with the club's retail partner Castore, SEKO fulfilled hundreds of thousands of orders and completed deliveries to supporters in 89 countries.



• **Gebrüder Weiss** is handling e-fulfillment in Germany, Austria, and Switzerland for the **Mibelle Group**, which produces personal care, beauty, and nutrition retail brands. Gebrüder Weiss handles the logistics and IT processes for online orders with myGW, a digital customer portal that enables access to essential data for all supply chain parties from the supplier to the end customer.

• British lifestyle brand **Barbour** selected **Metapack** to handle its e-commerce operations. Metapack's delivery portal automates shipping and returns, and expands delivery options for consumers. Its delivery manager enables Barbour to select the right delivery service for each order, and quickly generate carrier-compliant labels and customs documents for all shipments.

> GREEN SEEDS

Renewable energy company **Enviva** and **Mitsui O.S.K. Lines**, a global marine transport group, signed an agreement to develop an environmentally friendly bulk carrier, which is designed with a hard sail that harnesses wind energy. The companies plan to reduce greenhouse gas emissions during ocean transportation of sustainable wood pellets.



Scientists at Australia's **RMIT University** are repurposing disposable face masks to build roads, incorporating them in a material called recycled concrete aggregate. If the material is used to build a two-way roadway just one kilometer in length, it would divert about 3 million used masks from ending up in landfills.

BMW introduced sustainable transportation into its Mini plant in the U.K. Its transport provider, Imperial Logistics, deployed a new fleet of 18 trucks powered by liquefied natural gas that transport engines and other parts from suppliers. They reduced carbon and nitrogen emissions by approximately 20% compared to a diesel fleet.

> UP THE CHAIN



Intelligent Audit, a multimodal freight auditing and payment platform, appointed **Hannah Testani** as its chief executive officer. Testani previously served as chief operating officer for nearly 12 years, and was a driving force behind the company's 70% year-over-year revenue growth in 2020.

The Shippers Group, a national provider of third-party warehousing, contract packaging,



e-commerce, and transportation services, named **Graham Swank** chief executive officer. Swank has 35 years with The Shippers Group, including 13 years as chief

operating officer, and has been instrumental in overseeing the company's growth.

Lisa Petersen was named chief operating officer at **Vintners Logistics**, a logistics, warehousing, and transportation solutions provider for the wine industry. She brings more than 25 years of industry experience and 15 years of executive management to Vintners. Most recently, Petersen served as director of intermodal services for Independent Dispatch, where she was responsible for transportation and logistics operations.

[IN FOCUS]

TAKEAWAYS

Shaping the Future of the Global Supply Chain

Truckers Ride Out Automation

Autonomous vehicles will impact an estimated 300,000 to 500,000 trucking jobs, predicts a USDOT report. However, truckers today are unlikely to lose their jobs due to automation, and younger truckers will likely be trained for the future, says Finch Fulton, vice president of policy and strategy for Locomotion. He explains:

- **The transition hasn't started.** Leaders of many autonomous trucking companies warn against the hype around autonomous vehicles. Some claim we may reach the end of the decade before the technology and regulations allow trucks to deploy.
- **Trucker shortage.** With 2 million long-haul drivers in the United States and a shortage of more than 60,000 truckers, automation would help address the shortage rather than replace truckers. The shortage is expected to increase to 160,000 by 2028.
- **Human-centric models.** Truckers handle many tasks that have no automated solutions, such as inspections, maintenance, and unexpected repairs. Human-centric models incorporate humans into the mix as they progress toward automation.
- **Age of the average trucker.** About 61% of new truck drivers are older than 40 and 33% are older than 50. Each year, about 10% retire or leave. That means many won't be impacted by self-driving trucks. Those changing careers could be trained for manager, warehousing, or autonomous vehicle operator positions.
- **Cost.** Trucking companies want to get as much value out of their fleets as possible, and won't be ready to replace their entire fleet even if the technology was ready. Additionally, only major shippers would be able to invest. Mom-and-pop operations won't spend millions to update their fleets in the beginning.



DIGGING UP VERTICAL FARMING SOLUTIONS

Vertical farming—in which indoor spaces are used to grow food—is forecast to increase globally, but such operations can only grow a limited number of crops to make a profit. A new automated solution, created by Swisslog, can help the industry overcome these barriers to growth with better flexibility, reduced costs, and closer proximity to consumers in urban areas.

Automating vertical farming also has the potential to transform abandoned urban buildings into growing facilities, reduce pollution, and eliminate food deserts. The technology can be installed in a wide range of spaces, such as abandoned warehouses in urban areas and unused space in office buildings, as well as purpose-built spaces.

Swisslog's SynQ management software supports an automated flow in plant production. The technology lowers the cost of labor for harvesting, planting, and logistics; reduces energy use by optimizing lighting systems; and lowers transportation costs by enabling vertical farming to be closer to the point of sale.

The solution enables custom configurations based on growing process, crop type, and space availability. One approach uses a shuttle system with a modular design, in which automated shuttles move around shelving units inside an enclosure or facility. Each shelving unit can hold multiple plant trays, depending on plant height, and the shelving units can be rearranged based on each plant's needs.

TAKEAWAYS

LEGACY at the Crossroads of America

As e-commerce continues to dominate the retail landscape, many logistics services providers are evolving their solutions to meet this new demand. One example is LEGACY Supply Chain, a Franklin, Indiana-based third-party logistics provider focused on e-commerce fulfillment in the United States and Canada.

LEGACY recently acquired a new facility in Indianapolis, and continues to flex to meet new customer demands created by the pandemic. *Inbound Logistics* met (remotely) with Mike Glodziak, president and chief executive officer, and Kyle Krug, director of marketing and communications, to discuss how the market and LEGACY's operations are accelerating.

"We expanded to Indiana to grow our e-commerce footprint and for the location," Glodziak says. "We piggy-backed on the state motto: 'The Crossroads of America.' That's us, and that's where we need to be."

LEGACY's team, service offerings, clients, and geography have evolved in the past 10 years, and it recently

updated its branding to match. "We're a mid-size player, so we have to be nimble and flexible," Krug says. "That's what our new branding communicates."

In addition to new branding and a new headquarters, LEGACY acquired a 720,000-square-foot automated e-commerce facility in Indiana to serve mid-sized e-commerce companies. The facility is equipped with conveyor systems and multi-tiered racking and pick modules.

Recruiting people was key to serving customers experiencing dramatic growth during the pandemic, as well as those that pivoted to make essential products overnight.

"Because of the pandemic, supply chain has made the evening news for the past 365 days; that's helped with recruitment," Glodziak says. "Many millennials are joining our company because they see that opportunity. Supply chain is the block and tackle of this economy, and it's not going away. It's an exciting career path."

LEGACY also introduced new protocols, including temperature screening in all buildings and new work methods to accommodate social distancing. "We haven't at any point shut down our supply chain through the pandemic, and we're proud of that record," Glodziak adds.

TIME-CRITICAL SHIPMENTS SPEED UP



Calculating the optimal route for time-critical shipments used to take a nail-biting 30 minutes or longer. Thanks to a new routing solution, created by technology company Airspace, shippers can calculate the best path for transporting goods to their destination at the lowest cost and risk. The platform spits out results in less than one second—a game-changer for time-critical shipments, such as

transporting organs for transplants. The solution provides greater transparency, as customers can monitor progress in real time.

Using distributed sensors, the router generates an expectation of where the order should be at any given time. If a flight is canceled, for example, the technology immediately establishes a new plan. The technology considers ground travel as well, accounting for traffic to and from nearby airports and the final destination.

UNMATCHED

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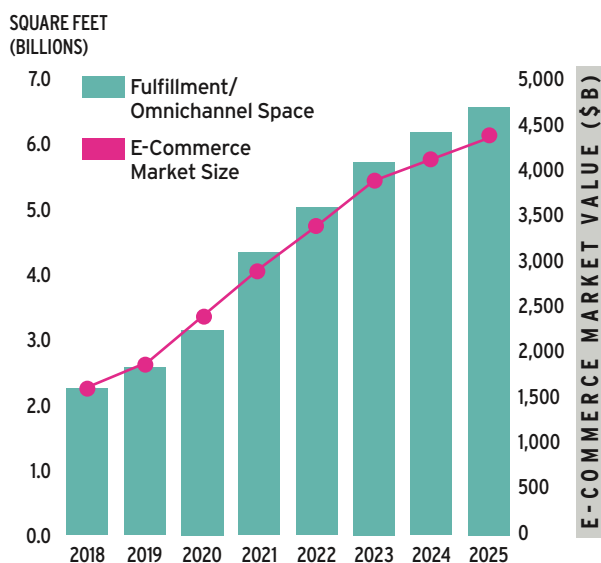
TAKEAWAYS

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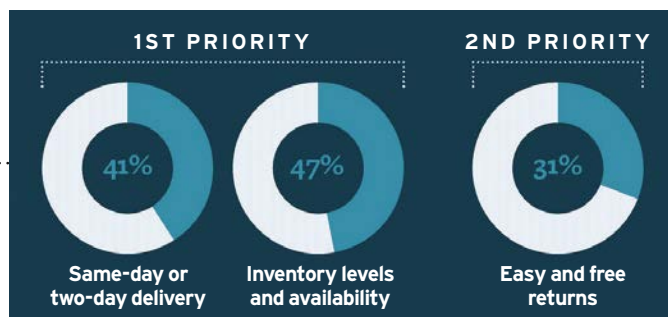
While many industrial sectors are still reeling from the pandemic, warehouse and fulfillment centers will experience double-digit growth in the next five years, says an Interact Analysis report, as e-commerce continues to surge. The report predicts:

- Fulfillment warehousing space, driven by the general merchandise sector, will top 6 billion square feet in 2025.
- Warehousing and fulfillment staffing will increase by 50% by 2025.
- The boom in e-commerce will see 28,500 new warehouses in service by 2025.
- U.S. e-commerce accounted for 4.5% of total retail sales in 2011, rose to 10% in late 2019, then to 15% in less than one year during the pandemic.
- Amazon reported its highest ever quarterly sales in February 2021, surpassing \$100 billion.
- Walmart's online business was up 79% in the quarter ending October 2020. Target's online sales boomed by 154% in the same period.
- China, the United States, Japan, India, and Germany will make up more than 50% of the warehouse building stock of 180,000 units by 2025.
- Warehouse automation will surge, but only in more developed regions.

GLOBAL DEMAND FOR FULFILLMENT SPACE
RISES WITH E-COMMERCE GROWTH



SOURCE: INTERACT ANALYSIS



Sorting Out E-Commerce Priorities

E-commerce capabilities and technology have been vital to shippers' success during the pandemic, finds a report from Kenco. Of the supply chain professionals responding to the survey, 90% say visibility technology is a "priority." Other highlights from the report reveal:

- 24% of respondents say e-commerce is extremely important and their top priority, and 41% say it's very important.
- 41% say same-day or two-day delivery is their first priority when ranking e-commerce capabilities in order of importance (see chart).
- 43% rate visibility technology as a "high priority." Expect telematics, track and trace, and monitoring to rise in popularity.
- 20% to 25% is the range in which most mid-sized businesses are willing to spend on innovation, while large companies fall in the 10% to 20% range.
- 41% say predictive analytics are a "priority," and 28% say they're a "high priority." This signals the rise of advanced analytics and the importance of the data these solutions rely on.
- 21% say that innovative technologies like robotics and automation are a "high priority," with another 34% saying they're a "priority," indicating a rising trend in the industry.

GEN Z SHIFTS OPERATIONS INTO HYPERDRIVE

The transition to an autonomous supply chain is underway as Gen Z enters the workforce. Leaders should look to hire Gen Zers and consider these steps when digitizing, says a Gartner report:

- **Automation:** Identify and automate all repetitive, non-value-added tasks, like procure-to-pay and customer claim management. Robotic process automation is the primary technology for this.
- **Augmentation:** In 2025-2030, hyperautomation

technologies, such as machine learning, will enter mainstream adoption. Gen Zers will progress into leadership positions, and awareness and acceptance of these technologies will speed up.

- **Autonomy:** The final destination is supply chain autonomy, in which all low-value activities are automated. This involves minimal direct human involvement, which suits Gen Zers' expectations. Employees will focus on strategy, innovation, customer experience, and preventing AI data bias.

NEW GOOGLE MAPS FEATURE GETS A GREEN LIGHT

Google Maps can not only help truckers and passenger vehicles find the quickest route from point A to point B, but now it also gets them there greener. Google has introduced a series of new features including eco-friendly routes that provide Google Maps users with more fuel-efficient navigation. The app determines fuel consumption for every route, and then suggests the most efficient option based on factors such as road incline and traffic congestion.

This will be the default route calculation mode going forward, but users can still switch to the fastest route in their settings. The feature will launch in the United States later in 2021 for both Android and iOS.

Google Maps will also launch a new weather layer, allowing users to see real-time weather information. The app will show the forecast for each area, making it easier to plan routes accordingly. This feature will be released on Android and iOS in 2021 based on data provided by The Weather Company, AirNow.gov, and the Central Pollution Board.



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Key Questions to Ask When Considering Predictive Analytics

By Scott Friesen
SVP Strategic Analytics
Echo Global Logistics



The transportation industry is currently adopting advanced technologies and techniques at a rapid pace. There has been an explosion of firms touting innovative and data-driven insights and a lot of companies offering tools to support predictive analytics, such as artificial intelligence (AI) or machine learning (ML) technology.

On the one hand, this is very exciting as the widespread use of predictive analytics will play a key role in the advancement of the industry. On the other hand, this technology can be daunting for someone who knows freight and logistics, but doesn't have a background in mathematics, statistics, or computer science.

To guide you, here are some key questions for a company that is pitching you predictive analytics, machine learning, or artificial intelligence solutions:

• Does your prediction accuracy include true negatives? Or only true positives?

This is the most important question to ask a firm that is predicting something that could be categorized as a yes or a no. For example, will the load in transit deliver on time? Lots of companies make claims about the accuracy of their predictions, such as “our algorithms are 86% accurate.” Unfortunately, this doesn’t actually tell you much because there are two ways to be right and two ways to be wrong.

For example, when a load is predicted to be on time and it does arrive on time, this is called a true positive and is the most likely source of an oversimplified claim of accuracy. In order to separate random results from useful predictions, we also have to be able to predict the true negatives.

So if a firm predicted that every load would be on time and 86% of the loads arrive on time, this would mean that a true positive was produced 86% of the time with a true negative rate of 0%. In this example, 14% of the loads were not on time, but since the firm’s algorithm predicted that all loads would arrive on time, it did not correctly predict true negatives. A perfect score would accurately predict 86% of the loads on time and 14% not on time. At a minimum, the firm should be able to tell you their ability to predict true positives and true negatives. Even better, they could produce a prediction table like this:

	ACTUAL ON TIME	ACTUAL LATE	TOTAL
PREDICTED ON TIME	774 loads	42 loads	816 loads
PREDICTED LATE	86 loads	98 loads	184 loads
TOTAL	860 loads	140 loads	1,000 loads
	90% true positive	70% true negative	
	10% false positive	30% false negative	

• Do your predictions include an out-of-sample measurement?

In general, predictive models use historic data to predict what will happen in the future. In order to measure how well a model performs, it is critical to test the model using data that was not used to create the model. This is called using out-of-sample data to measure accuracy. Predictive algorithms that are measured without using an out-of-sample approach will almost universally produce inflated results.

For example, let’s say the model is predicting TL costs in the spot market, and we’re measuring how well the model predicted last week’s spot rates. If last week’s data is included in the data set used by the model, the model is getting to see what it’s predicting within the data it is using. Essentially, the model is “cheating” by getting to see the data that it is supposed to predict. To get a realistic sense of how well the model will perform, it should always be measured using out-of-sample data.

• If the firm is measuring something with continuous values like costs, and they present a percent accuracy value, is that value the mean percentage error (MPE) or the mean absolute percentage error (MAPE)?

The last of the three questions may be the most technical but should feel intuitive. Let’s say the firm is predicting truck-load spot rates and says their average error is 1.5%. Sounds pretty good, right? But is it? They are probably reporting their mean percentage error (MPE). This takes all the predictions, compares them to the actuals, converts them into a percentage, and then calculates the average or “mean.”

For example, let’s say we have two loads that cost \$1,000. If the model shot too high by \$500 on one load and then too low by \$500 on the next, we would have a positive 50% error and a negative 50% error, which averages to zero. But would you be happy with the \$500 error on each load?

You need an additional measure called the mean absolute percentage error (MAPE). This is similar to the MPE, but it doesn’t allow the positive and negative values to cancel each other out. For MAPE, an error is an error regardless of direction. This is a tougher error measure and, in the example above, our MAPE would be 50%.

To fully understand how accurate a model is, you need both values. MPE provides a sense of how centered the model’s predictions are, and MAPE indicates how spread out the errors are. It’s critical to see both values from a firm you’re thinking of working with, not just one.

With the advancement of predictive analytics and other

tools, now is an exciting time in the logistics industry. Armed with these questions, you should be one step closer to becoming a savvy consumer of these tools and techniques, and the experts at Echo are always here to help you along the way.

Whether you are a shipper or carrier, Echo’s proprietary technology leverages the latest in AI, machine learning, and advanced load matching algorithms to create the most flexible and robust transportation management system (TMS) available today. Echo’s industry-leading technology which is built on our cutting-edge architecture supports rapid deployment of new capabilities and integrates with shipper, carrier, and third-party systems.

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How Short-Term Bids Can Produce Long-Term Benefits



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Mini-bids act as a supplemental strategy, providing short-term revisions to rein in costs and shore up routing guides. You need accurate data to execute a successful mini-bid strategy.

What's the best way to repair a broken routing guide? In these days of COVID-19, the question comes up often, with widespread market disruptions and network imbalances leaving many supply chain experts scrambling for solutions.

At a recent roundtable discussion, members of the Freight Market Intelligence Consortium—a group of leading shippers who rely on analytics from DAT iQ—discussed the rising adoption of mini-bids.

While not designed to eliminate the annual procurement process, mini-bids act as a supplemental strategy, providing short-term revisions to rein in costs and shore up failing routing guides. It's an approach that's been used for decades, but now with access to cutting-edge freight analytics, the strategy is becoming more and more common.

In general, there are four trigger events for a mini-bid.

1. Network Expansion

Whether you're introducing a new product that requires new inbound lanes or adding new regional markets that require new outbound lanes, expanding your network requires contract rates for new lanes that weren't in scope at the time of your annual procurement cycle.

2. Distressed, Failing Carriers

When markets become volatile, some carriers may fail to meet expected service levels. And when volatility continues for an extended period, some carriers may be forced to close operations.

In either scenario, you need new options for the lanes those carriers serviced, and targeted mini-bid events are an approach to getting back on track and/or testing new service providers.

3. Tight Capacity

When capacity is tight and spot rates exceed contract rates, carriers may turn down shipments or ask for higher rates. In some cases, a carrier could be seeking these rates for a short period as a way to reposition equipment to a different region.

In these scenarios, the carrier's actions may indirectly initiate a mini-bid process that ultimately helps you strengthen your long-term relationship.

Tight market conditions that lead to routing guide failures and spot-market premiums can cause you to spend budget at an unsustainable pace. Mini-bids can help contain costs in these conditions. You can even anticipate seasonal spikes and plan a mini-bid proactively.

4. Soft Markets

When capacity is plentiful, spot rates might drop well below your contract rates. A wide gap might initiate a mini-bid to lower your rates and align more closely to the market. However, you may want to honor these contract rates as a bargaining chip for future scenarios when the tables turn and the carrier is tempted to refuse contract rates.

Regardless of what triggers the event, you need the most accurate and reliable data to execute a successful mini-bid strategy. That includes up-to-date insights into daily changing truckload rates, plus the ability to benchmark your network's performance against the overall market.

With that 360°-view, your operations will have the agility and insights to respond to markets in real time, empowering your transportation teams to make clear and confident decisions.



Filling the Supply Chain Education Gap with LTL Education Courses



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LTL is not an industry of broad brush strokes; supply chain professionals need a pointillistic understanding of the logistics of LTL in order to excel in the industry.

If there's one immutable truth in the world of logistics, it's this: LTL is an inherently complex form of transportation. Tariffs, rates, DIM weights, transit times – it's enough to confuse even seasoned logistics professionals.

The solution to this knowledge gap has historically been on-the-job training or university supply chain education, but for a variety of reasons there is now a pressing need for third-party, remote LTL training that prepares logistics workers for transportation success.

Global Scope Can Overlook Local Intricacies

In the past, professionals looking to move into a supply chain career learned about the basics of supply chain from universities. However, many of these college supply chain programs are now global in scope, focusing on worldwide supply chain management instead of the intricacies of specialized domestic transportation.

And even these programs, which used to be widespread, are becoming less common. LTL is not an industry of broad brush strokes; supply chain professionals really need a pointillistic understanding of the logistics of LTL in order to excel in the industry.

Accelerating Need for Dedicated LTL Education

This lack of specified training puts the onus on employers to prepare new hires with the LTL knowledge needed to do their jobs. Dedicated LTL study is a necessity, not a luxury.

At the same time, changes in LTL and the broader supply chain world are accelerating. The reliance on e-commerce has ballooned since the start of the pandemic, and last-mile LTL shipments and related e-commerce strains on the supply chain won't diminish once social distancing abates.

That genie isn't going back into the bottle. So supply chain employers need logistics workers that are fully versed in all aspects of the industry, ready to solve unique shipping and delivery problems based on their extensive supply chain knowledge.

But why care about LTL? It's been reported that some shippers in today's world are no longer concerned with what mode is used to ship their goods.

A Multimodal Approach Ensures On-Time Delivery

This mode agnosticism means supply chain stakeholders have to be well versed in all modes of transportation. As unforeseen weather events and other disruptions, such as protests, become more common, savvy logistics employees will need to be armed with familiarity of all modes, not just the most popular, to ensure that freight is delivered on time, without damage, and in the most financially expedient way possible.

Offerings like SMC³'s LTL online education courses cover a wide range of topics from LTL basics and operations to more advanced concepts like pricing analytics and transportation law. The company also has plans to continually refresh content, adding new expert presenters and taking the feedback of students to make the courses even better as time goes on.

Register:
logisticstrainingcenter.com/smc3-courses/

SMC³ offers the industry's only path to LTL certification, available through Logistics Training Center. SMC³ partnered with Logistics Training Center to produce five LTL courses, as well as an optional certification exam (CLTL). These seasoned logistics and supply chain management professionals, as well as leading university-level instructors, deliver up to 40 hours of content.





[INSIGHT]

COVIDRECOVERY

by Oliver Wright

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Supply Chain: An Engine of Post-Pandemic Growth

Growth has been hard to find for consumer goods companies in recent years. The majority of food and beverage businesses, for instance, are seeing growth of less than 3% according to Accenture's analysis. And across industry segments, growth has been trending downward for five years now, culminating in the unprecedented disruption of 2020.

As we look to the post-pandemic recovery, it's clear that renewed growth is essential for the consumer goods industry, and supply chains will be central to finding that growth.

If the supply chain is to take on this enhanced role, however, companies will need to stop seeing it merely as a cost center from which to drive ever greater efficiencies.

CONSUMER-CENTRIC SUPPLY CHAINS

Instead, the whole supply chain needs to be reconfigured as a driver of growth. To do this, it needs to be reoriented around what customers value. This is what Accenture calls the "consumer-centric supply chain." It's a supply chain model that makes use of widespread digital connectivity and data-led intelligence to ensure the whole business is laser-focused on delivering consumer needs.

The precise capabilities needed to create a consumer-centric supply chain will usually depend on an individual company's unique context and objectives. However, Accenture's research reveals some common characteristics that all will typically share.

The first is customer and product segmentation. This is what distinguishes true consumer-centricity more than anything else. Supply chain management leaders are able to segment their value chains by product and/or by customer needs. They view the supply chain not as a monolithic entity, but rather as a series of distinct value chains, each with its own set of shared requirements and each delivering outcomes for a particular group of customers.

In addition, supply chain leaders typically design for margin capabilities across the ecosystem, providing the

ability to deliver the right product portfolio at optimal cost. They also tend to have concurrent planning and execution capabilities, enabling them to synchronize re-planning so they can adapt quickly to new data insights.

GETTING TO CONSUMER-CENTRICITY

Transforming a product-centered supply chain into a consumer-centric supply chain is a major undertaking. It means rethinking not only the configuration of the supply chain itself, but also its use of digital technologies, as well as its supporting operating model and ways of working.

First, having segmented the value chain, companies need to reconfigure their supply chain to deliver the needs of each segment at scale. Ideally, this reconfiguration capability will be dynamic, enabling the network to be flexed quickly in response to changing market and business requirements.

Companies often choose to go "asset light" to achieve this level of agility. By outsourcing some of the asset-heavy aspects of the supply chain, they create significantly more flexibility in their network for responding to new consumer needs.

Digital connectivity across the value

chain is another key requirement. This is the only way to enable the cross-functional decision-making that consumer-centric supply chains need (such as concurrent planning and execution mentioned above).

Similarly, siloed supply chain operating models need to be transformed for greater collaboration and cross-domain decision-making.

DELIVER WHAT CUSTOMERS WANT

There is considerable value to be captured here. Our analysis suggests that intelligence-led supply chains can support revenue growth of as much as 3% through improved product availability, better customer experience, and fewer lost sales.

There is similar potential to improve profitability and optimize working capital, as well as numerous other opportunities in enhancing value propositions, product sustainability and customer trust.

For example, when Accenture asked nearly 200 supply chain executives about their value proposition priorities, one of the most frequently cited was the need to create connected customer experiences.

Having a personalized multi-channel experience was already important of course, but with the pandemic putting digital adoption into overdrive, industry executives now correctly believe it's an essential requirement of doing business. To support that connected experience, companies need supply chains that are tailored to each consumer segment and responsive to changing needs—both key capabilities of a consumer-centric supply chain.

Other priorities, such as consumer trust and greater sustainability, are equally well supported by greater consumer-centricity. By providing end-to-end transparency, digitally connected supply networks can, for example,

provide the intelligence needed to enhance a product's sustainability as well as prove its social responsibility credentials to consumers.

REORIENTING AROUND CUSTOMER NEEDS

Every company will have its own consumer-centric priorities. But what virtually all players in the industry share is a need for greater digital connectivity across the supply chain, supported by flexible processes and cross-functional decision-making, and greater organizational agility and responsiveness.

It is this foundation that will enable consumer goods companies to segment and organize their value chain around customer outcomes—and deliver those outcomes with a flexible supply network supported by digital technology. This enhanced focus on consumers will be essential as consumer goods companies look for that much-needed boost to growth in the years to come. ■



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[INSIGHT]

3PLLINE

by *David Commiskey*

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A Supply Chain for the Next Normal

The fluctuating economy over the past year impacted how companies across industries responded in a pinch. Now that crisis responses have passed and the pandemic settled into a new normal, many companies are looking for ways to adapt their long-term supply chain strategy for the unexpected.

Vulnerabilities that were exposed during the initial days of the pandemic spurred short-term fixes, such as turning stores into temporary warehouses or pivoting entire workforces to work-from-home. Now that these market changes have become a long-term shift, however, companies are looking to make longer-term investments into the next normal for their logistics operations.

One particular vulnerability the pandemic exposed was the inability to deliver on heightened consumer expectations. Shippers are looking for ways to position products closer—and therefore deliver faster—to the consumer.

Some companies had to pivot their supply chains completely, focusing on home delivery rather than traditional business-to-business commercial endpoints. This was particularly true for goods such as exercise equipment, which shifted away from gyms.

Home delivery and final mile didn't make brick-and-mortar stores obsolete, but suddenly, with the pandemic, many needed to transform their stores into

fulfillment centers that could distribute products to consumers at home. After a year of operating in this model, many are considering new approaches to network design that allow them to keep products closer to consumers for the long term.

For example, many companies are reevaluating their distribution strategy, which may include shifting manufacturing facilities closer to consumers and distribution centers. Several are designing distribution center models that keep products on shelves in a quicker and more efficient way and leveraging micro-fulfillment strategies to satisfy that demand.

MEETING FINAL-MILE EXPECTATIONS

In addition to changes in supply chain structure, many shippers are expanding their final-mile capabilities to meet the expectations of on-time consumer-friendly delivery. To compete with Amazon Prime, on-time delivery has become a priority like never before and capabilities such as in-home delivery and set up have increased in popularity.

As a long-term response to months-long lockdowns extending into 2021, many companies are investing in additional final-mile capabilities to get their products to consumer homes and deliver a differentiated customer experience.

This became increasingly important as parcel carriers struggle to integrate bulky items like furniture pieces into their networks. Early in the pandemic, shipping through popular parcel carriers was a way to get products to consumers quickly, but it became apparent this was not a viable long-term strategy.

As a result, companies turned to logistics partners that could seamlessly integrate their networks with carriers who could take the package directly to consumers and provide options like doorstep delivery and home installations.

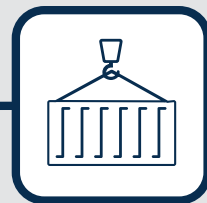
Network design and expanding final-mile capabilities are just a few ways companies across a variety of B2B and B2C industries are shifting their priorities as the pandemic extends into 2021. Uncertainty has become the new normal and several vulnerabilities were exposed after short-term solutions dissipated.

The companies that develop long-term logistics solutions—enabled by technology and data insights to adjust to consumer demand and pandemic uncertainty—are the ones positioned for growth in the new reality for supply chain operations. ■

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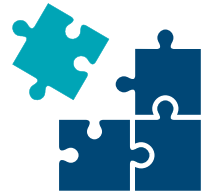
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Supply Chain Challenge?

SOLVED



Retail Optimization Through a Revamped Network

A premium CPG company turned to Hub Group for a dynamic solution within a flexible network. Hub Group streamlined its handling process, increased service levels, and reduced chargebacks.

THE CHALLENGE

A fragmented transportation network can have weighing effects on a supply chain as multiple touchpoints increase the possibility of freight being mishandled and products becoming damaged. Such issues loomed over a premium CPG brand as its misaligned network pressed numerous Over, Short and Damaged (OS&D) claims from retailers.

With an expanding customer base and recent surge in volume, the company engaged Hub Group to perform a network analysis and construct a dynamic solution to help with these challenges and support expansion. After finding inefficiencies with the picking and outbound transportation process,

Hub Group's dedicated teams sought to optimize the handling of the company's inventory throughout the entire transportation network.

THE SOLUTION

The customer moved to a dual warehouse inventory hold solution with Hub Group to alleviate chargebacks and improve on-time efficiency for its retail business. This solution minimized touchpoints throughout the network, essentially streamlining the handling process while increasing service levels and drastically reducing chargebacks.

Shortly after this implementation, the customer's inventory volume quickly grew to more than 15,000 pallet locations, significantly higher than

the 10,000-12,000 pallet forecast. Hub Group worked through the client's request to receive more than 6-10 inbound appointments per day, align inbounds on slip sheets versus pallets, and manage an enormous product catalog, as well as implement display build solutions.

As the company's business has grown, so has collaboration with Hub Group. After seeing the benefits of the inventory hold solution, the company allowed Hub Group to ship pre-paid LTL when experiencing capacity issues. The company received full order visibility and shipment tracking through Hub Group's 24-hour online freight management portal. Now, with enhanced visibility and a streamlined network, the company entrusts Hub Group to manage its transportation process to additional retailers throughout its network.

With Hub Group, customers receive dynamic solutions within a flexible network, putting their teams in a ready position to support volume surges and business expansion.



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THOUGHT LEADERS

TMS Solutions Optimize Transportation Networks and Mitigate Disruption



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Q: *I already have an ERP and WMS. Why do I need a transportation management system (TMS)? Can one TMS support my global operations?*

A: A transportation management system (TMS) focuses on optimizing the transportation segment of the supply chain. While there might be some overlap with ERP and WMS, the TMS works on the edge of the enterprise, connecting all transportation stakeholders such as carriers, freight forwarders, internal and external shippers.

TMS benefits are well documented, including routing compliance, cost containment, visibility, event management, and trade compliance. A cloud-based TMS with a Software-as-a-Service (SaaS) delivery model can significantly accelerate the return on investment. This is because the TMS vendor manages the hardware, infrastructure, software, tools, and personnel. Upgrades are seamless, and there is no need to schedule deployment windows to support upgrades, fixes, and patches. There is no concern with who on your team will work with the added servers, databases, tools, and network connections and if they have the right skills for the task.

In 2020 as the COVID-19 pandemic hit, companies utilizing our cloud-based TMS technology were able to reconfigure their transportation network with relative ease and avoid expensive supply chain disruptions.

One of the hardest hit verticals by the pandemic was the airline industry.

Fortigo's airline customers were able to change shipping execution virtually overnight. This empowered front-line workers to continue executing based on the updated company strategy.

In addition, as quote-based moves became more prevalent in 2020, integration with transportation market places was key to ensuring carrier and equipment availability while containing cost.

Q: *How does a single TMS solution support supply chain operations on both a regional and global basis?*

A: Historically, global companies have used TMS solutions geared towards a specific geography. This is changing with new cloud-based offerings that allow one TMS system for any shipment and any geography. This includes all shipping modes and freight characteristics across multiple locations.

With one system of record, there are no limitations to the number of carriers, rates, or shipping data. This allows companies to operate both regionally and globally while optimizing their transportation network.

While an ERP and WMS are crucial components of a comprehensive enterprise operation, they lack the targeted functionality that a TMS can provide, leaving potential savings on the table.

Fortigo's one-stop TMS offers a proven track record of transportation savings and provides features that simplify all aspects of an enterprise supply chain.

Using Data Insights to Optimize Logistics and Transportation

Digitizing decision-making is a crucial step to leveraging data to make positive impacts in an organization. Logistics and transportation data are critical in enabling proactive decision-making that informs supply chain initiatives.

Q: *How does logistics data impact the rest of the organization?*

A: Logistics is one of the few sources of information that shows the organization's entire external network. For example, logistics shows all suppliers and raw materials, where they come from, and how they are getting there.

Logistics data also identifies who and where your customers are, and where your locations are in relation to them. By using this data strategically, you can support significant initiatives in the organization, like adding plants or distribution centers, changing sourcing habits, or desirable acquisitions.

Q: *How do you use transportation and logistics data to drive supply chain decisions?*

A: Often supply chains are not using all the logistics data available to drive their decisions. With the upstream supply chain typically focused on machine utilization, low-cost sourcing, and labor management, the logistics side is simply reacting to decisions made upstream. These reactive decisions can cost the company a lot of money quickly, but could also result in unhappy customers.

An integrated supply chain must consider the balance between service and cost throughout the entire supply chain, including logistics. Logistics then becomes the measurement of what the customer sees. Metrics like on-time delivery, fill rates, and more, can be used as a feedback loop, offering guidance and measurement to the quality of entire supply chain decisions.

Q: *How do you focus on the right data?*

A: To make good decisions with data, you need to start with quality data. Ask yourself if you're making decisions based on quality data or justifying decisions based on data.

In other words, does your data show you what strategies to go after, or are your strategies dictated by the data you use?

To focus on the right data, you first need to collect the right data. Then, and only then, can you use that data to build and support your strategy. The data changes your strategy over time and enables you to monitor your performance. If your data enables all of that, then that's the right data for you and your network.

To make the data actionable, you need to consider the outliers and determine what actions support your strategy. Finally, make sure you have clean, trustworthy data. Typically, organizations get caught in the trap of having certain data sets they trust and others they don't. Uncertainty and trust underscore the need for a quality data provider.



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Q: *Should shippers go to the spot market even when they have contracts?*

A: Shippers that have contracts, regardless of the mode, are seeing rates continue to climb. General rate increases are continuing in LTL and TL trucking, for example. So it's a good idea to take advantage of the spot market for one-off loads as well as shipments that are in static lanes that could otherwise move under contract.

Q: *What's the best tool to ensure you're finding competitive rates?*

A: We recommend using an on-demand shipment-quoting tool with reverse auction capability. With our tool, you can receive quotes within 30 minutes to 72 hours, depending on mode, from the transportation providers. Ocean freight typically has the longest response time. Or, you can assign the load to a reverse auction environment and provide rates for competitive backhaul type lanes.

Q: *How does the reverse auction work?*

A: In a traditional or blind auction, the highest bid wins. In a reverse auction, the lowest bid wins. The shipper submits a maximum rate and information such as shipment dimensions, equipment type, pickup, and delivery data they would like to see, and carriers bid lower to win the auction.

Users can view comparisons for equipment, transit days, and cost. In busy backhaul lanes, carriers bid

aggressively to fit their network. Carriers can see the other bids and adjust accordingly, but they don't know the other bidders' identity. The reverse auction is set up for a limited time, usually 30 to 60 minutes.

Q: *What's the benefit for shippers?*

A: In our experience, shippers realize savings of 12 to 25% compared to other selection processes. We have customers who use the tool for 50 to 80% of their shipments to ensure they get the best outcomes, even though they also have contract rates.

You can also tender the load directly in the tool or contact the carrier to finalize the arrangements. You receive the best price in the marketplace within a short period, compared to contacting carriers and brokers individually.

Q: *What are other advantages to using online tools?*

A: It automates manual processes, saving time for everyone involved. You can get the best rates to move your freight efficiently and more effectively use your staff's time. You can eliminate phone calls and manual email reviews and evaluations.

Our tool integrates with a TMS, or you can use it as a standalone system. It's cloud-based, so it's available anywhere. Shippers can optimize their transportation spend with market-sensitive rates through on-demand pricing.

How E-Commerce Is Changing Retail; Ways to Optimize Fulfillment

Q: *With the pandemic causing a huge surge in e-commerce demand, how has this peak season compared to those in the past? How has Hub Group positioned itself to deliver?*

A: We've seen a surge in e-commerce this year – both from an industry and from a company point of view.

In 2019, we saw around 5% of all CPG sales come from e-commerce. In 2020, we saw that increase to 7%, which is almost a 50% increase. Even if this is a relatively small percentage of total sales, it's receiving disproportionate attention as these growth rates will likely continue.

Although forecasts did not predict what we saw earlier in the year, we were able to leverage our vast network and retail providers to quickly modify solutions to manage through it. This really exemplifies the need to build that resilient, agile, and highly visible supply chain.

Q: *What has been your assessment on retailers adjusting to the current climate?*

A: We always see retailers adjusting to stay upfront and follow consumer demand, although this year it has accelerated. For example, in September of this past year, we saw Walmart rolled out some major changes to their OTIF (On-Time In Full) compliance program. Their new target is 98%, which is up from 87%.

Walmart also announced another initiative, SQEP (Supplier Quality Excellence Program). SQEP is positioned to increase quality and visibility into Walmart's supply chain. This is something that Hub Group CaseStack Retail Supplier Solutions really focuses on and what we've been doing for almost 20 years now.

Q: *What do you predict for supply chains across the country in 2021 and how can retailers thrive in the e-commerce boom?*

A: I can start by pointing out what we discussed regarding stricter retailer compliance, like what we saw with Walmart and OTIF. I think these types of compliance programs for retailers will continue to be more challenging, but for good reason.

Precision is necessary to execute an omnichannel strategy. I think that retailers that continue to work with companies like ours, enable their vendors – especially the small to medium-sized ones – to compete on a level playing field with the larger companies.

I predict we'll see more marketplaces or at least more market penetration for those that are already active. These marketplaces can be similar to what we're already seeing with the Amazon Seller Central model. This shifts the responsibility of storing and stocking inventory and fulfillment to the seller. So I think both retailers and suppliers will adopt more marketplaces and direct-to-consumer models in the coming year.




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ALASKA: THE CALL OF THE WILD

The 49th state comes in first in logistics and transportation resilience. Alaska is a state where logistics providers are up to the challenge, offering solutions as vast as the land mass.

A full-page background image showing a majestic mountain range with rugged, snow-dusted peaks. The lower slopes are covered in dense forests with vibrant autumn foliage in shades of orange, yellow, and blue. In the foreground, a steel truss bridge spans a wide river. A white truck pulling a blue trailer with the 'SPAN ALASKA' logo is crossing the bridge. The sky is a mix of light blue and soft white clouds.

At the time the United States purchased Alaska from Russia in 1867, the future 49th U.S. state was still largely unexplored. Logistics, however, already had come into play. Two years before U.S. Secretary of State William Henry Seward negotiated the \$7-million purchase, Western Union laid a telegraph line across the vast territory that would become a state in 1959.



Covering even the most remote areas of Alaska, Lynden counts on its fleet of Hercules cargo planes—basically flying trucks—and an arsenal that includes commercial-size hovercraft, which can carry up to 12,500 pounds of freight.

The Western Union line linked underwater with an Asian line. Even then it was clear that navigating Alaska was all about logistics—the art and science of connectivity.

Although the intrinsic challenges of moving products and supplies across a land mass twice the size of Texas will forever be a fact of life in Alaska, modern innovations in technology, equipment, and strategies developed by logistics service providers have resulted in a logistics infrastructure that serves the state extraordinarily well.

Bear in mind Alaska has fewer than 5,000 miles of paved roads (in contrast to Texas with 79,000 paved road miles). This fact alone means the effectiveness of the state's logistics infrastructure is essential, relying on the connectivity of ocean, land, and air transportation.

Moreover, logistics providers in Alaska must handle shipments much differently from the way they handle them elsewhere. Cargo in Alaska—food, construction materials, healthcare supplies, and virtually all retail products—are dependent on an intricate network of assets in order to successfully make it to the final mile. Distribution



There's no taming the Last Frontier. We are caretakers. Only by our ability to employ smart analytics, strong logistics, and a relentless effort by dedicated professionals to keep corridors open can Alaskans move freely across this rugged, wild country.

John MacKinnon

Commissioner

*Alaska Department of
Transportation and Public Facilities*

centers and warehouse operations in Alaska are fewer and farther between than those found in the lower 48 states.

The challenges of geography and weather notwithstanding, logistics providers and other business leaders have marshaled their resources over the years

and have led the way to Alaska's present-day leadership in industries ranging from crude oil to fishing.

RESILIENT & RESOURCEFUL

While the pandemic brought about economic stresses across the country and throughout the world in 2020, causing Alaska to experience its first-ever year of deflation, the state is expected to reflect the economic improvements predicted for other locales that present less daunting logistics obstacles.

Alaska will record approximately 18,000 new jobs from 2018 to 2028, for total growth over that period of 5.5%, according to projections by the Alaska Department of Labor and Workforce Development. The labor department creates 10-year industry and occupational projections for Alaska every other year.

The logistics sector figures prominently among the factors contributing to the projected job growth. The Alaska Department of Transportation and Public Facilities oversees 237 airports, 10 ferries serving 35 communities, more than 5,600 miles of highway, and 776 public facilities throughout the state.

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In addition to shipments from the lower 48 to south central Alaska, Span Alaska—a subsidiary of Matson Logistics—offers overnight service from Anchorage to Fairbanks and the Kenai Peninsula, and provides LTL service via barge from Seattle to Southeast Alaska.

The transportation department's central region expects a busy construction year through 2021, awarding up to \$420 million in construction contracts, including airport, trail, and highway improvements.

SURGING VOLUMES

More than 3.48 million tons of air cargo landed at Ted Stevens Anchorage International Airport (ANC) in 2020, representing a 16% increase over its record-setting volumes in 2019.

"The tremendous surge in cargo volumes through ANC has been fueled by an increase in e-commerce, personal protective equipment (PPE), and displaced belly cargo," Airport Director Jim Szczesniak said in a written release in February 2021.

"The pandemic has left an indelible mark on the e-commerce landscape, accelerating market growth—reaching numbers not forecast to be seen in the United States for another two years," he added. "We expect our cargo numbers to remain strong into 2021; as the air cargo industry continues to recognize the benefits and efficiencies of ANC; as e-commerce shopping becomes routine; and as international travel restrictions continue to displace belly cargo."

None of this optimism should come as any surprise given the state's "top of the world" geographical identity. Because it extends into the eastern hemisphere, Alaska is technically the westernmost, easternmost, and northernmost state in the United States. The Ted Stevens airport is less than 10 hours from 90% of the industrialized world. Meanwhile, Alaska has more ocean coastline than all of the other U.S. states combined.

OVERCOMING OBSTACLES

With this geographical advantage comes a distinct challenge: Alaska is one of only two states (the other being Hawaii) whose capital city is accessible only by ship or air, because no roads connect Juneau to the rest of the continent. Likewise, Alaska and Hawaii are the only states not bordered by another state.

Surrounded by the Yukon wilderness as well as the Pacific and Arctic oceans, Alaska has always presented formidable hurdles for those charged with the responsibility of traversing it. And then came the pandemic.

While the challenges posed by COVID-19 have been unprecedented, for logistics providers in Alaska overcoming immense hurdles is nothing

new. Those who navigate the state's rugged terrain and weather-related obstacles are familiar with overcoming whatever nature sends their way.

MULTIMODAL SOLUTIONS

A case in point is Span Alaska, which ships more than 400 million pounds of freight to Alaska every year.

"Span Alaska's operations throughout the state continued uninterrupted from the start of the pandemic," says Tom Souply, president, Span Alaska Transportation. "We had contingency plans in place and pre-tested for scenarios that included logistics slowdowns and government restrictions."

Span Alaska, a subsidiary of Matson Logistics, immediately enhanced its safety processes to manage the challenges of COVID, Souply says. The company fully implemented protocols advised by the Centers for Disease Control and Prevention, including contact tracing, facility deep-cleaning, PPE provisioning, and testing requirements.

While the company's senior leadership team continues to meet daily to discuss COVID-related issues, their agenda also includes tactics and approaches to make shipping seamless regardless of temporary matters. "The size and scope of Alaska's geography present challenges every day," Souply says, adding that Span Alaska keeps freight moving by having its eyes on shipments at all times.

"Span Alaska has developed an exceptional, responsive, and highly functional multimodal network, using our own assets, containers, trucks, and facilities," he explains. "When we do go out of our network we have excellent relationships with long-term partners that share our values and passion for serving our customers."

Headquartered in Auburn, Washington, Span Alaska operates service centers in Anchorage, Fairbanks, Kenai, Kodiak, and Wasilla. In addition to shipments from the lower 48 to south central Alaska, the company offers overnight service from Anchorage to Fairbanks and the Kenai Peninsula, and



Fast Way to the Last Frontier

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provides LTL service via barge from Seattle to Southeast Alaska.

All LCL/LTL shipments from the lower 48 are loaded into containers at Span Alaska's operations center in Auburn, Washington—an operation the company calls its "Direct Loading" service. The containers then travel by vessel or barge to Anchorage or Kodiak and then directly to the final Span Alaska service center for last-mile delivery.

"By keeping the container intact, the risk of damage or delay is minimized, and it also speeds transit times," Souply explains.

KEEPING IT COOL

The company recently introduced a new Chill and Freeze service to Alaska, moving temperature-controlled items such as perishable foods—meats, ice cream, and other frozen items—from the lower 48 to Alaska grocery stores. With its new service center in Anchorage and its investment in dual temperature-controlled delivery trucks, Span Alaska provides cold chain service throughout Central Alaska and Kodiak.

The company's array of multimodal assets are key to its success in overcoming

the intrinsic logistics challenges of Alaska. "It's the combination of multimodal assets that have to sync up to deliver goods from central Anchorage to the farthest reaches of the state," Souply says.

Span Alaska moves more LTL freight than any other carrier between the lower 48 and Alaska. That heavy volume translates into supplies equal to the needs of the Alaska market.

"Retailers are adamant about preventing in-store stock-outs," Souply says. "Residents increasingly want expedited delivery for their e-commerce orders."

"And while same-day or next-day delivery is still sometime in the future for most of Alaska, Span has worked to expedite the transit and last-mile speed and reliability," he adds. "Transit times from our Tacoma area facility to our Alaska terminals are consistently just five calendar days, helping to meet retailer and consumer just-in-time demands."

Souply is enthusiastic about Alaska's post-pandemic future. "We are here to support Alaska's growth with more direct services to more locations," he says. "We talk to our customers about their expansion plans in the next five years so

we can be prepared to support them. We are also eagerly awaiting the return of tourism and the summer cruise season."

SUMMONING ADVENTURERS

The unique challenges and promise that define Alaska draw those with the most adventurous spirit to its shores. That is true of all who answer the call to blaze trails in the ice, but no more so than those in the field of logistics.

"This is probably the most interesting place in the world and this is the most interesting company," says Alex McKallor, executive vice president and COO of Lynden Inc. The Lynden family of companies provides transportation and logistics solutions in Alaska, Canada, the Pacific Northwest, Hawaii, and around the world.

Lynden has been providing transportation and logistics solutions to customers since 1906, and pioneered the first scheduled over-the-road truck service to and from Alaska in 1954. At the time there were those who considered the challenge of regularly reaching remote locales in Alaska insurmountable.

"We took what was impossible and made it possible," McKallor says. "That set the tone for what we still do today."

In Alaska, the route from here to there to Market Square may not be immediately obvious. Logistics providers need to be prepared to take whatever means are necessary to make the trip effectively.

"We had a long-term goal to have a statewide marine service," says McKallor. That goal, among many others, has been achieved, with barge services now extending from locations like Ketchikan and Juneau in Southeast Alaska all the way to the North Slope villages on the Arctic coast.

"No matter where you need to move freight, we have it covered, from Ketchikan to Kotzebue to Kaktovik," he adds. "And if any of these locations are unfamiliar, our Alaska logistics experts are happy to explain the unique challenges in Alaska that you'll need to plan for."



The Lynden family of companies provides transportation and logistics solutions in Alaska, Canada, the Pacific Northwest, Hawaii, and around the world.



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Lynden's fleet of Hercules cargo planes—basically flying trucks—completes the trifecta of primary transportation modes in Alaska.

More unique modes of transportation are also in the Lynden arsenal. These include commercial-size hovercraft, floating giants that can glide over land, water, ice, or sand while carrying up to 12,500 pounds of freight. It also includes PistenBully snowcats, mighty vehicles that can pull sleds and other equipment through the roughest of rough snow- and ice-encrusted terrain.

UNIQUE ASSETS

“Our ability to combine our various modes of transportation helps to erase a lot of the challenges,” McKallor says, by providing last-mile solutions connecting Alaskans to the rest of the world. “These are pretty amazing solutions.”

For all its challenges, the state has undeniable assets as well. “The most important asset is its coastline,” McKallor says. “There is no question about it.”

At 6,640 miles, Alaska has the longest coastline of all 50 states, nearly five times the length of the coastline of Florida, the state in the second spot.

McKallor also cites Alaska's resource-based economy, particularly the fishing industry, as an asset that distinguishes the state from others. And then there is Alaska's location halfway between Europe and Asia.

“Those are two assets that won't change,” McKallor says, regardless of how the logistics landscape shifts amid competitive, political, and technological changes.

“Going forward, mining, fisheries, and energy will be mainstays,” he adds. “We continue to focus on being able to support those industries. We are heavily investing in technology to improve the customer experience and operations.”

Lynden prides itself on customized solutions fitting the needs of individual companies navigating commerce in Alaska.

“We are driven by a desire to make it

simple for the customer by demystifying the complexities,” McKallor says. “That's what people want. They want some choices in their solutions to really remote places.”

THE RIGHT STUFF

“To be successful in Alaska, you need two key assets—the right equipment and the right people,” says Grace Greene, president, TOTE Alaska (“TOTE”). TOTE, a leading owner/operator of domestic shipping in the United States, specializes in moving cargo between North America and both Puerto Rico and Alaska.

“TOTE is proud of our custom, built-for-Alaska, ORCA-class vessels, which feature specialized design and redundancies to help navigate Alaska's challenging waters,” Greene says. “Our ORCA-class ships were specially built for Alaska and provide state-of-the-art protection from the elements.”

Braving the elements is a way of life in Alaska, and logistics providers must continually be prepared. “We have roll-on/roll-off (Ro-Ro) operations, ‘Keep from Freezing’ service, below-deck stowage, and specialized refrigerated trailers, to help protect our customers' cargo,” Greene says.

“We also have a great team and amazing partners,” she adds. “If someone is looking to get cargo to a remote village off the road system, they know to call us to get it over the water, and then our network of logistic partners will get it the rest of the way, whether that's by water, air, or a sled team.”

To put it mildly but succinctly: Resilience is required. “As a critical maritime highway to the state, the supply chain must be resilient to keep food on grocery store shelves and to deliver other products that are vital to Alaska's consumers and businesses,” Greene says.

When supply chain pressures occurred in the early months of the pandemic, she says, TOTE worked closely with state and local authorities to ensure there were no disruptions to the shipping or delivery of essential goods.

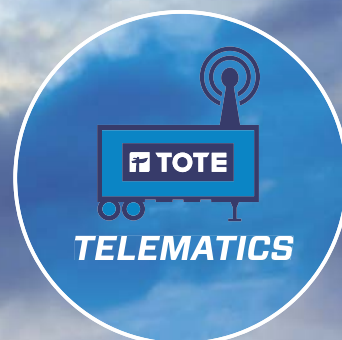


TOTE specializes in moving cargo between North America and both Puerto Rico and Alaska. Its custom, ORCA-class vessels feature redundancies that make them well suited for Alaska's challenging waters, providing specialized protection from the elements.

RELIABLE

TOTE has proudly served as a critical shipping link to the Last Frontier for over 45 years. From our “Built for Alaska” vessels to the fastest turn-times and best-in-class cold-chain process, TOTE is the premiere choice for shipping fresh food and produce to and from Alaska.

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Handling a wide variety of time-sensitive customer cargo in retail, medical, and dry/temperature-controlled foods and products, Odyssey's services are available in all modes of transport.

Beyond regular health and safety protocols, TOTE implemented special provisions to minimize the ship-to-shore interface in order to mitigate the risk of exposure to the coronavirus on vessels. The company also updated policies regarding crew changes through stricter pre-boarding quarantines and testing requirements.

CONTINUOUS IMPROVEMENT

TOTE prides itself on having a "continuous improvement" mindset. "As a carrier, we're always looking at how we can improve our customers' experience so they can better serve the Alaska community," Greene says. "From our online portal that allows customers to track and release shipments, to our extended gate hours and equipment options, we ensure that we can provide unique solutions for the unique challenges that come with shipping to Alaska."

Greene believes the Frontier State's logistics infrastructure will continue to cover yet newer frontiers. "Alaska is well positioned to continue to grow in the logistics marketplace," she says. "The state's rich natural resources and central location between Europe, Asia, and North America make it primed for a continued strong, strategic presence."

She adds that TOTE will continue to

help lead the journey. "TOTE is excited to continue our investments in our assets and in Alaska," Greene says. "In 2021 we will be continuing our terminal enhancements with Gate Vision in Anchorage and Tacoma that will improve our inbound partners' experience and efficiency at our gates, which already have the fastest turn-times in the market."

"We are also in the final stages of our historical LNG engine conversion," she adds. "Once converted, TOTE's ORCA-class vessels will emit fewer air emissions and be among the most environmentally friendly vessels in the world."

A GLOBAL PERSPECTIVE

By geographical mandate, logistics leadership in Alaska demands an acute understanding of the logistics land- and seascape around the world.

"Pre-pandemic, logistics was becoming more and more global," says Kevin Kelly, president at American Fast Freight, a subsidiary of Odyssey Logistics & Technology Corporation. Headquartered in Danbury, Connecticut, Odyssey has operations throughout North America and key cities in Europe, the Middle East, Africa, and the Asia-Pacific region.

In Alaska, Odyssey has facilities in Anchorage, Fairbanks, and Kenai/Soldotna, handling a wide variety of time-sensitive customer cargo in retail,

medical, and dry/temperature-controlled foods or products. Kelly says Odyssey's expertise in servicing and handling the unique demands of Alaska has carried over into the other markets the company serves.

Odyssey acquired American Fast Freight in 2018, and Kelly says the acquisition enabled the company to leverage its long-established transportation network in Alaska, as well as domestically in the lower 48 states, Hawaii, and internationally. "We now present multiple solutions to our customers and tailor services to best fit their needs," he says.

"Our staff has the expertise to handle any business vertical or mode of transportation and Odyssey is positioned better than ever to provide targeted, comprehensive logistics solutions that address our customers' needs and visions," he adds.

Odyssey's services are available in all modes of transport—intermodal, trucking (LTL/TL, bulk, flatbed, and warehousing), managed services, international transportation, and a web-based transportation management system called WIN (Web Integrated Network), which provides access to a multi-billion-dollar carrier network. Through this service, clients can generate spot quotes and route guides, execute and track

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With terminals in Anchorage, Fairbanks and the Kenai Peninsula, we provide service to all points in Alaska.

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Odyssey
Innovating Logistics



Alaska Airlines transports e-commerce goods and other critical supplies such as medicine, medical supplies, and perishables into and around the state. Its Alaska Air Cargo network includes more than 100 destinations in the United States, Canada, and Mexico.

shipments, and complete necessary paperwork such as bills of lading.

For all those technology advantages, Kelly says he believes the most important logistics asset in Alaska is its people.

"You have to have the local knowledge and people to move shipped goods," he says. "There must be drivers, warehouse and administrative staff, and management."

Resilience tempered with innovation, he says, is required at each and every level. "Throughout this challenging year, Odyssey has adapted and consistently delivered support and solutions to our customers while adjusting to new ways to work in order to keep each other healthy and safe," he notes.

"From enhanced technologies to working to ensure our customers' networks are optimized, our local history paired with our understanding of global markets was especially helpful as the supply chain demanded flexibility for Alaska businesses and residents," Kelly adds.

"As with Odyssey, Alaska and the people that live and serve the state are innovative and resilient, which has shown in both robust and challenging economic times as well as during the global pandemic," he says.

ALASKA TAKES FLIGHT

Challenges on the ground and on the water—pandemic-related and otherwise—did nothing to deter Alaska Airlines from soaring over the past year.

"Our commitment to cargo hasn't changed during the pandemic," says Adam Drouhard, director, cargo revenue, planning and postal affairs.

Headquartered in SeaTac, Washington, just outside Seattle, Alaska Airlines connects with large international and integrated carriers to carry e-commerce goods and other critical supplies such as medicine, medical supplies, and perishables into and around the state. It is the fifth-largest airline in the United States when measured by fleet size, scheduled passengers carried, and number of destinations served.

The airlines' Alaska Air Cargo network includes more than 100 destinations in the United States, Canada, and Mexico.

"Demand remains strong across our network, including the state of Alaska, where the majority of our destinations are not accessible by road," Drouhard says. "We are excited for 2021 as we increase flying to meet demand across our network, adding new direct non-stop

routes to the state of Alaska, such as Anchorage to San Francisco, Denver, Las Vegas, and Phoenix."

Drouhard says freighter aircraft destinations will be expanded to 20, including expanded service into Dillingham and King Salmon, locales that are inaccessible by roads.

"We're evaluating other new routes to ensure we are supporting local industry as the economy rebounds," Drouhard adds. "Our goal is to expand our reach by creating more same-day shipping options between Alaska and the rest of the United States."

STRENGTHENING NETWORKS

Alaska's air carrier infrastructure is vital so that both passengers and essential cargo can be transported into remote communities.

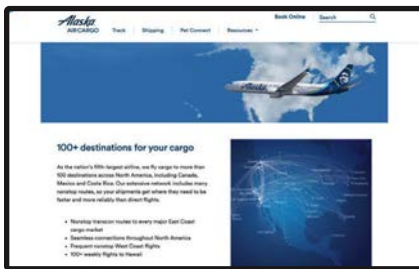
"In recent months, Alaska Air Cargo has assisted with the transportation of the COVID-19 vaccine to more than 30 communities both within and beyond our network in partnership with regional carriers," Drouhard says. "Our scheduled service is the most reliable in the state and is crucial for shipping critical items, as well as everyday goods, across the state."

Alaska Air Cargo enjoys the strengths of Alaska Airlines while also having the benefits of its own management.

"Alaska Airlines has invested in Alaska Air Cargo's infrastructure in many of the locations in the state," he explains. "Owning our own facilities and hiring our own employees allow us to remain focused on the safety and efficiency of our operation."

This combination of strengths bodes well for the future. "Logistics is more important than ever and air cargo is essential, especially in the state of Alaska," Drouhard says. "We have seen the marketplace grow across a number of the communities we serve and expect that trend to continue."

Clearly, then, Alaska will be exploring yet more frontiers—and overcoming their logistics challenges—for many years to come. ■



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Alaska Air Cargo provides reliable air cargo services to meet your shipping needs. Whether it be small packages, full ULD shipments, or chartered freighter service, Alaska Air Cargo offers a variety of options, including GoldStreak® Package Express, a next-available-flight service for items up to 100 pounds; Priority Air Freight for time-sensitive shipments that are larger than GoldStreak and need to be at a destination by a specific time; and Animal Express, a priority express service that ensures animals a safe and comfortable journey.

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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.



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.

SPAN ALASKA • www.spanalaska.com

Span Alaska understands Alaska and has everything it takes to transport your shipments to, from, and around the state. Span Alaska moves more LTL freight than any other carrier to Alaska—for several good reasons. It has the equipment, the people, and the clout with ocean carriers necessary to transport your freight quickly and efficiently. These kinds of connections enable Span Alaska to give you the best value and to get things done that others simply cannot.



TOTE MARITIME ALASKA • www.totemaritime.com

TOTE Maritime Alaska delivers the supplies for life in the Last Frontier with twice-weekly sailings between Tacoma, Washington and Anchorage, Alaska. Our ORCA vessels—custom built for Alaska—provide safe, reliable service with efficient roll-on/roll-off (RO/RO) loading and unloading. With our network of sister companies and experienced partners, we are committed to solving the toughest transportation and logistics challenges.



SUPPLY CHAIN TECHNOLOGY

THE AGE OF
ACCELERATION

FAST, FASTER, FASTEST describes the pace of technology innovations hitting the market today as compared to past decades. These innovations focus on safety, visibility, flexibility, efficiency, and sustainability to help supply chain professionals compete in a changed world. **BY KAREN KROLL**

Most companies have long tried to keep their employees safe. In 2020, that meant ensuring those still on the job could remain socially distant from their coworkers. Enter the Reflex, a wearable device from Kinetic that was initially designed to provide feedback when workers use unsafe postures. Employees attach the device to their belt or waistband, where it measures hip motion, says co-founder and CEO Haytham Elhawary. The software in the device knows that if a person's hip moves one way, the rest of their body must have moved that way. It uses this information to identify high-risk movements, such as twisting or over-extending the spine.

In August 2020, Kinetic added automated proximity alerts to the device's capabilities. Now, the Reflex lightly vibrates when workers come into close contact with each other.

At Warwick Ice Cream in Rhode Island, a producer of scratch-made ice cream, close employee contacts dropped by more than three-quarters in the first month it implemented the Reflex. On top of that, the duration of closer encounters dropped from seven minutes to less than 60 seconds.

Social distancing alerts are just one way in which technology is changing to help supply chain professionals access the qualities that can help them compete in a changed world: safety, visibility, flexibility, efficiency, and sustainability. The goal is an "intelligent supply chain" that can predict and quickly accommodate changes, says Inna Kuznetsova, CEO with 1010data, a provider of analytical intelligence.

VISIBILITY

Supply chain systems that capture and show transaction data as it flows from raw materials to production to distribution are able to then identify and analyze patterns, shortages, and surpluses, and act to resolve any problems, says Tom Martucci, chief technology officer with Consolidated Chassis Management (CCM), a chassis pool manager.

One key to end-to-end visibility is data interoperability. Supply chain organizations need to be able to integrate data from carriers, terminals, and drivers, among other sources, and capture it in one place.

“If you don’t have data interoperability at the outset, you lose an opportunity to make processes as efficient as possible,” Martucci says.

Application programming interfaces (APIs), which act as communication links between software programs, are replacing older methods of sharing information, Martucci adds. And, they’re booming in popularity; between 2019 and early 2021, usage of one API platform, the Postman, more than tripled (see chart).

project44, a provider of digital supply chain visibility solutions, uses API-first development to trigger exception notifications when, for instance, an ocean liner has to turn back, potentially delaying the arrival of shipments. With this information, companies can decide whether to re-order inventory and ship it via air to still meet delivery deadlines, says Vernon O’Donnell, chief product and services officer with project44.

Multi-modal, network-wide visibility allows supply chain professionals to identify and mitigate exceptions more quickly, he adds.

Telematics, another visibility tool, is an emerging option for asset management and tracking. In its broadest sense, telematics joins telecommunications and informatics, and commonly refers to wireless telematics devices that collect and transmit data on, for instance, vehicle use, maintenance requirements, and servicing.

In shipping, telematics can measure container location, temperature, humidity, air flow, and other attributes, says Greg Tuthill, chief commercial officer with SeaCube, a purchaser and lessor of refrigerated containers whose service offerings include telematics.

For instance, a telematics tag placed in a refrigeration unit can provide

CCM’s Chassis Management System application integrates near-real-time movement data with parameter-driven business rules to enable visibility into chassis operations.



GROWTH in API REQUESTS

4.7 B

REQUESTS in 2019

13 M

REQUESTS per DAY

0.4 B

REQUESTS per MONTH

150

REQUESTS per SECOND

Developers are meeting the demands of evolving cloud computing, app integration, and other connected software infrastructures with APIs. Here’s a look at the number of API requests the Postman API Platform received over a given period in 2019.

SOURCE: POSTMAN

information on its location and show when the machine is operating outside its ideal range. It also could warn of potential component failures.

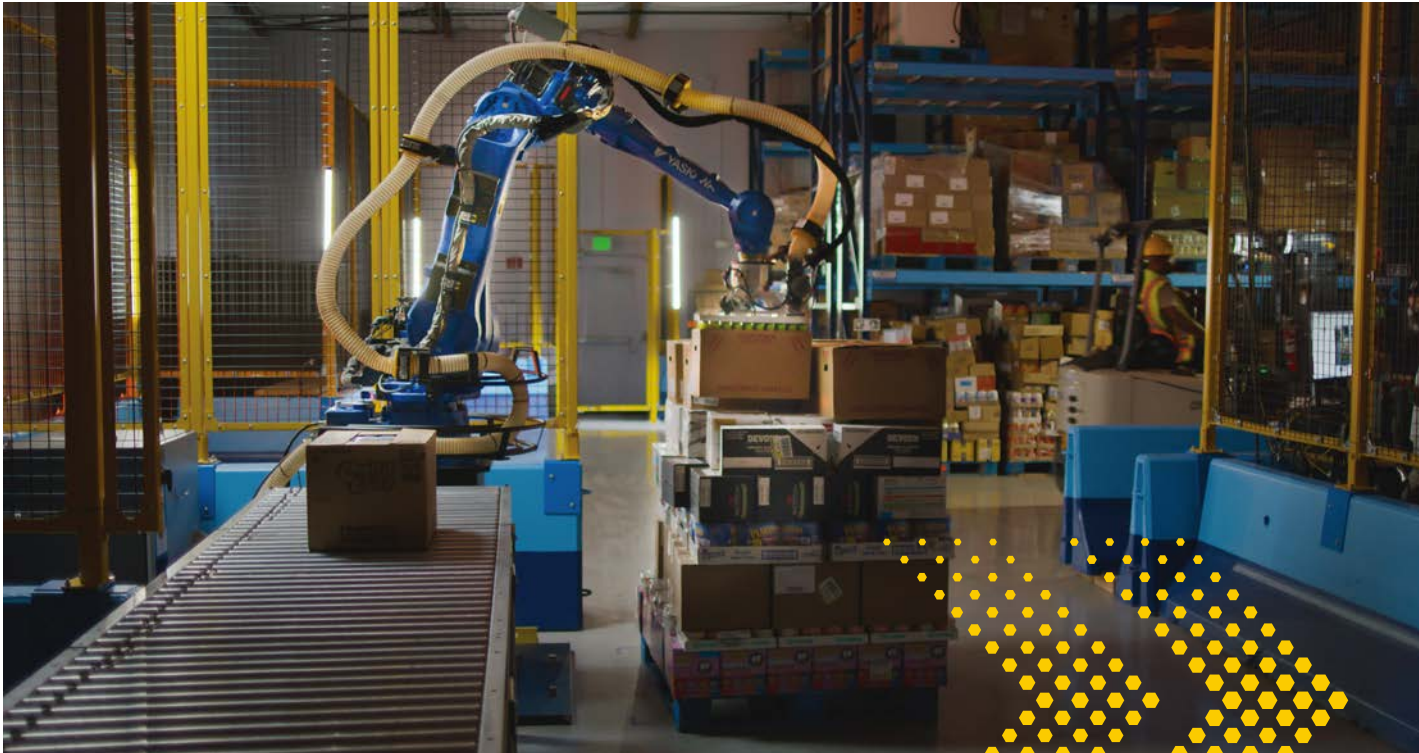
“It can pick up early warning diagnostic indicators,” Tuthill says. What’s more, a tag can provide this detail to the pallet level.

To date, less than 20% of global fleets use telematics, Tuthill estimates. While the adoption rate had been accelerating, the pandemic set it back. Another challenge has been accessing containers in circulation to install the technology.

FLEXIBILITY

One lesson the pandemic wrought is the importance of flexibility. Adam Kline, senior director, product management with Manhattan Associates, a provider of supply chain management software, provides an example. Say a company has a distribution center (DC) that supplies its retail stores in one state.

Boston Dynamics' Pick mobile robot uses high-resolution 2D and 3D vision and machine learning algorithms to locate cartons on single, rainbow, and mixed-SKU pallets, enabling fast depalletizing.



SUPPLY CHAIN ORGANIZATIONS NEED TO BE ABLE TO INTEGRATE DATA FROM CARRIERS, TERMINALS, AND DRIVERS, AMONG OTHER SOURCES, AND CAPTURE IT IN ONE PLACE.

In another state, its distribution center fills e-commerce orders.

Because of the pandemic, the retail DC is locked down and stores in the area are closed. To transact business in the region, the company's systems need to figure out how to ship individual products from the retail DC or send the customers' orders to the e-commerce DC located in a different state.

Either way, the system needs to react "seamlessly and gracefully," Kline says. The same challenge could arise if locations are shut down due to weather events or computer outages.

Similarly, a warehouse management system (WMS) today needs to be able to manage the picking of both units and pieces, and handle multiple shipping methods, as well as shipping to both stores and consumers, all while dealing with unpredictable demand.

A WMS that allows supply chains

to virtually segregate items can boost efficiency and savings. Kline offers an example: a supply chain organization could build a 1-million-square-foot distribution center for retail fulfillment, along with a 500,000-square-foot center for e-commerce fulfillment. Or, the company might be able to build a 1.1-million-square-foot facility that handles both types of orders.

"Rather than physically segregate products across multiple sites, you can virtually segregate them in one location through the WMS," Kline says.

For instance, Sysco Corporation chose Manhattan Associate's inventory optimization and replenishment system in part because it allows the food service company to move products from suppliers' manufacturing plants or distribution centers to Sysco's distribution centers, as well as into the warehouse networks of its operating companies.

APIs have a role to play in WMS solutions, as well. The solutions that incorporate APIs allow supply chain professionals to add capabilities, such as real-time location tracking within a distribution center, or to integrate a third-party track-and-trace solution.

Artificial intelligence also enhances flexibility. Symphony RetailAI uses artificial intelligence in numerous areas, including forecasting and determining the optimal way to fill orders, says Patrick Buellet, chief strategy officer.

Say a retailer runs out of a product. The Symphony solution can use rules set by the business to either substitute another product, or fill the order with the requested product, but from a warehouse that's located farther from the customer.

The solution also can prioritize either e-commerce or retail orders, based on business rules, improving overall product availability, he adds.



SeaCube Container Leasing provides shippers access to leading-edge technology options that include customized solutions as well as enabling the choice of a technology and telematics vendor that fits their needs.

Intermarché and Netto, manufacturers and retailers under Groupement Les Mousquetaires in France, partnered with Symphony in late 2020. They're leveraging the company's AI-based technologies to unify purchasing, logistics, replenishment, and other processes across a common platform and optimize inventory management and replenishment.

EFFICIENCY

Given social distancing requirements on top of a tight labor market, supply chain professionals often struggle to ensure their employees can work safely and efficiently. Robotics can help.

However, some solutions crafted for manufacturing operations falter in warehousing environments, which often encompass a greater variety of products, packaging, and volume levels, says Brian Nachtigall, logistics product manager with Boston Dynamics, a producer of mobile robots.

This difference helps explain why the global industrial robotics market topped \$21 billion in 2019 and was projected to hit \$66.48 billion by 2027, while the warehouse robotics market, while growing quickly, should end up at about \$9.5 billion in 2027.

Boston Dynamics' Pick mobile robot is designed for distribution settings. A mobile case-handling robot with a small

footprint, its advanced perception and manipulation capabilities allow it to move pallets, handle cases, and pick eaches, as well as load and unload trucks and palletize and depalletize products, including multi-SKU pallets. "It hits the need for variation," Nachtigall says.

SUSTAINABILITY

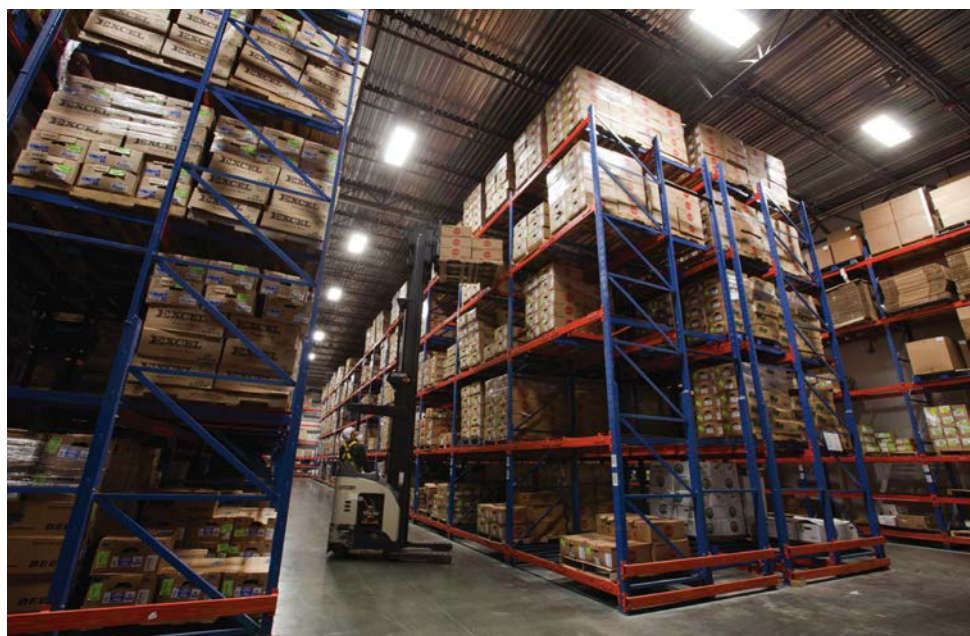
Amazon alone generated 465 million pounds of plastic packaging waste in 2019, including air pillows, bubble wrap,

and other plastic packaging items added to the approximately 7 billion packages the company delivered, according to a report by Oceana, an international advocacy organization focused on the world's oceans. One way to reduce plastic fill is to use boxes that closely wrap around their content.

Along with environmental concerns over packaging, "unboxing has become a big deal," says Sean Webb, director of automated packaging solutions North America with Quadient, a packaging solutions provider.

Ensuring items arrive intact no longer suffices. Instead, the package in which an order arrives at a customer's home now is part of a company's branding and messaging. So, as an example, an outdoorsy company will probably look for recycled material and packages, while a jewelry company may choose premium packaging. Both will want packages that take up no more space than necessary.

Quadient's automated packaging system builds fit-to-size parcels for variable dimension single- or multi-item orders, reducing waste. Employees don't need to know the product's dimensions before the machine can go to work. "Most companies see volume savings of



Sysco, the largest foodservice distributor in North America, taps into Manhattan Associates' inventory optimization solutions to manage demand forecasting and inventory replenishment.

“AZURE AND AMAZON AWS
PUSHED PRICES DOWN TO
THE POINT WHERE ANY
COMPANY COULD RENT A
SUPERCOMPUTER.”

—Shaun Richardson,
CEO, CXT Software

20 to 50%, and shipping cost savings averaging 32%,” Webb says.

Another solution, atma.io from Avery Dennison, marries the physical and digital supply chains by providing every physical item with a unique digital identification. In doing so, it facilitates product returns and reuse, allows consumers to check the provenance of the goods they’re purchasing, and provides real-time temperature monitoring for products like vaccines.

To tap into atma.io’s capabilities, two things are needed, says Max Winograd, vice president of connected product. One is the digital trigger on the physical item. This can be RFID, Bluetooth, or almost any data carrier. The other is the digital ID that’s stored in the atma.io cloud platform. Companies can create the ID in-house.

BRINGING IT ALL TOGETHER

The need for visibility, efficiency, and flexibility continues once products are on their way. Last-mile delivery costs alone can account for more than half of total shipping costs. Route optimization and last-mile delivery solutions can help.

Until recently, however, the prices of these capabilities put them outside many companies’ budgets, says Shaun Richardson, CEO of CXT Software, a last-mile delivery and courier software provider. “Computational power was expensive before Azure and Amazon AWS came around and pushed the price

down to the point any company could rent a supercomputer,” he says.

Because of the toolsets and cloud computing resources now available, the barriers to entry dropped enough that startups could offer what used to be available only to enterprises with large data centers. CXT’s newest route optimization engine will leverage the power of artificial intelligence, so it can continuously analyze data and improve operations.

And when it comes to residential delivery services, a few large companies had mostly cornered the market, says Jeff Boutwell, a consultant with Leverage Teck, a consultancy that helps companies navigate final-mile solutions.

“It has been hard for other companies to get the same service and visibility,” he says. If they wanted to connect with, say, 15 couriers, they might need 15 different connections.

That’s changing. Solutions like eTrac’s Final Mile Gateway allow companies to exchange data from their ERP, WMS, or other system with final-mile carriers, such as local couriers, in real time. eTrac uses APIs and EDI to pass order and shipment tracking data between shippers and clients, says Boutwell, who was formerly with eTrac. As a result, a shipper can use one connection, even when connecting with multiple systems.

GETTING STARTED

A few steps can help supply chain professionals leverage new technologies and gain the attributes they need from their supply chains.

1 Opt for smaller, short-term projects—say, 6 to 12 months—with clear returns on investment, as opposed to longer-term IT initiatives with payback time frames of several years. Early wins can generate momentum on which to build future projects. Linking success with payback can create a highly accountable model of innovation.

2 Keep expectations realistic. Few technology projects are truly turnkey. Most require some trial and error and disciplined project management.

3 Keep an open mind. O’Donnell



Quadient's suite of inbound and outbound parcel and packaging solutions helps retailers and carriers manage a growing volume of parcel deliveries and returns.

recalls working with a company that preferred to continue its relationship with a carrier with whom they’d grown comfortable, rather than establishing key performance metrics and looking for a carrier that met them. Of course, this hindered the company’s ability to improve its performance.

The changes over the past year have been mind-numbing and they’re not over. Research firm Gartner predicts hyper-automation will emerge in supply chains. Hyper-automation refers to the use of multiple technologies, including robotic process automation, machine learning, and artificial intelligence to quickly identify, vet, and automate business processes.

Between 2025 and 2030, hyper-automation technologies are expected to mature and enter mainstream adoption. “They will help automate supply chain decision-making by augmenting human judgment,” Gartner says. “Hyper-automation technologies will be available to increase the accuracy and speed of decision making.”

These changes in supply chain technology are only beginning. ■

2021

INBOUND

MARKET
RESEARCH

LOGISTICS

LOGISTICS IT PERSPECTIVES

How has the pandemic shaped the landscape for logistics technology? What new challenges do shippers face today, and what solutions do vendors offer? Our annual logistics IT market research report tells the story.

BY MERRILL DOUGLAS

In spring 2020, as COVID-19 turned the world upside down, companies scrambled to keep hospital supply rooms and store shelves stocked with necessities.

One year later, there's rarely a problem finding hand sanitizer or masks. But supply chains still contend with all sorts of other pressures born of the pandemic—an ongoing surge in e-commerce orders, port congestion, tight transportation capacity, elevated freight rates, and more.

No wonder vendors of logistics IT solutions are having a good year. When market conditions make it hard to match product supply with customer demand, information technology helps shippers analyze and automate their way toward more profitable performance.

In the future, as the pandemic winds down, supply chains will need to shift to a new normal that no one can envision from where we stand now. Will we go back to working, learning, socializing, and shopping as

we did in 2019, or will some of the behaviors of 2020-2021 endure?

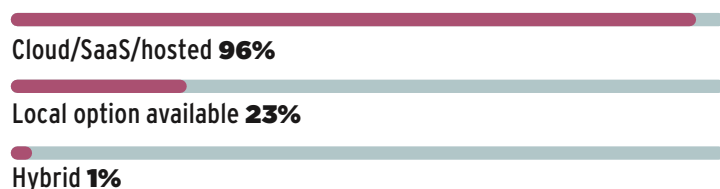
Whatever the answer, logistics IT will help companies track the trends, plan for new demand patterns, develop strategies to meet those demands, and execute new strategies as efficiently and cost-effectively as possible.

To help demand-driven enterprises understand the role IT solutions can play in their operations, each year *Inbound Logistics* conducts a survey of logistics technology

providers. We gather data on current trends in logistics IT to gain insights on what solutions are available, and to learn how logistics professionals are investing their resources in these new solutions.

After you read this report, check out the annual *Inbound Logistics* Top 100 Logistics IT Providers (*see page 68*), our guide to the leading purveyors of IT solutions. The next time you're ready to give your supply chain a digital boost, this guide can help point you toward the partners you need.

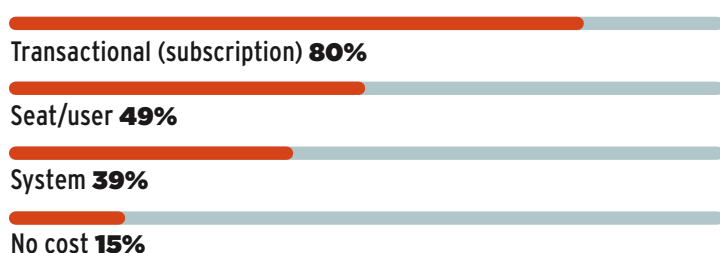
PLATFORM: How do you deliver your solutions?



Cloud hosting remains the dominant way to deliver logistics IT solutions. In 2020, 100% of IT vendors who responded to the survey offered software as a service (SaaS). This year, that number is similar—96%. The proportion of vendors who also offer on-premise implementations has dropped significantly, from 42% in 2020 to 23% in 2021. One percent of respondents offer a hybrid solution, with some functions residing on the shipper's premises and some in the cloud.

SOURCE: INBOUND LOGISTICS MARKET RESEARCH

COST BASIS: How do users pay for technology solutions?

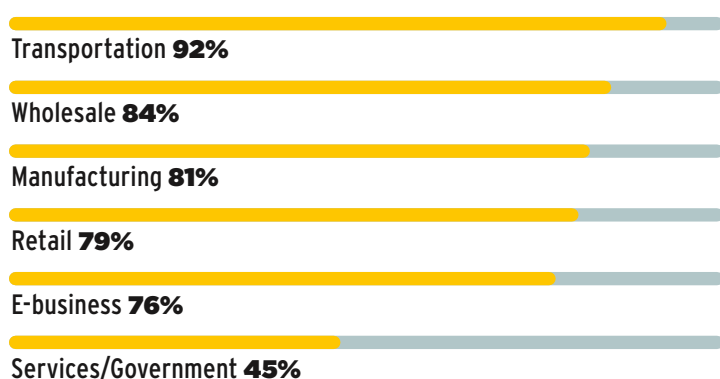


Given the dominance of cloud delivery, it stands to reason a large majority—80%—of technology providers would offer their solutions by subscription. Just fewer than half of respondents offer a per-seat or per-user payment option.

The most striking change is in the percentage of IT vendors that sell systems outright to customers—39% in 2021 vs. 61% in 2020. That drop corresponds to the COVID-related impact on on-premise implementations. The survey also shows more vendors provide at least some IT solutions free of charge, bundling them with paid services: 15% this year vs. 8% in 2020.

SOURCE: INBOUND LOGISTICS MARKET RESEARCH

INDUSTRY: What industries do your solutions serve?



One year ago, a healthy 69% of logistics IT vendors offered solutions to support e-commerce. Given the tremendous boost the pandemic provided to online sales, it's no surprise to see that indicator rise to 76% in the 2021 survey. But transportation stands at the top of the list right now; 92% of respondents say they offer technologies for that industry, up from 81% last year.

At 84%, wholesale stands slightly higher than it did at 81% in 2020, while retail remains at about the same level. Manufacturing, served by 81% of respondents, also remains unchanged since last year. Could this indicate that despite the problems U.S. companies have had sourcing and shipping goods from abroad over the past year, manufacturing is not moving back to our shores in significant numbers?

SOURCE: INBOUND LOGISTICS MARKET RESEARCH

What's Driving Growth?

Here's a sampling of comments from IT vendor respondents on why their sales continue to increase:

- "We see growing demand for parcel and LTL automation as national carriers have maximized capacity and are issuing high surcharges."
- "Customers are more demanding than ever, placing greater needs on the supply chain to be more intelligent, predictive, and capable of delivering to customers when, how, and where they want it. They also demand end-to-end visibility and control."
- "Customers want automation of higher-frequency carrier negotiations in sourcing of ocean, air, and ground freight movement to respond to supply chain disruptions or to new changes in supply/demand; optimization of carrier awarding in sourcing around sustainability goals; optimization of sourcing decisions for mode-shifting freight movement (i.e. ocean to air)."
- "With labor shortages and process disruptions due to lockdowns, we see an overall increase in demand for autonomous processes, digitalization of major parts of customers' supply chains, labor management systems, and exception detection systems to ensure easy accessibility, connectivity, and continuity even in future crises."
- "Users are finding an increasing need not only to optimize their current networks, but also to make sure their networks can adapt to increases in demand, shortages of product or delayed lead times, and more challenges that were discovered through the past year with COVID."

VERTICAL SPECIALIZATION: What verticals do your solutions serve?

Consumer packaged goods **72%**

Food & beverage **67%**

Automotive **64%**

E-commerce **64%**

Apparel & textiles **59%**

Electronics **59%**

Furniture **59%**

Healthcare **59%**

Pharmaceuticals **59%**

Chemicals **53%**

Grocery **52%**

Agriculture **46%**

Construction & building materials **44%**

Oil & gas **41%**

Aerospace **39%**

Renewable energy **33%**

No specialization (serves all) **13%**

Among the logistics IT vendors who specialize in particular product markets, the most dramatic change has been in agriculture. In 2020, 85% of respondents served that market; in 2021, that number is just 46%. Aside from that, the verticals that topped the list in 2020 retain their dominance in 2021, although with smaller percentages in almost every case.

For example, last year 81% of IT vendors served the consumer packaged goods marketplace; this year the number is 72%. Other verticals high on the list are food and beverage at 67% (vs. 74% in 2020), automotive at 64% (vs. 78% in 2020), e-commerce at 64% (vs. 66% in 2020), and apparel and textiles at 59% (vs. 66% in 2020). Although e-commerce saw a slight drop, its position relative to other verticals has improved—from ninth place last year to fourth place this year.

SOURCE: INBOUND LOGISTICS MARKET RESEARCH

SOLUTIONS OFFERED

SOURCE: INBOUND LOGISTICS MARKET RESEARCH

SUPPLY CHAIN

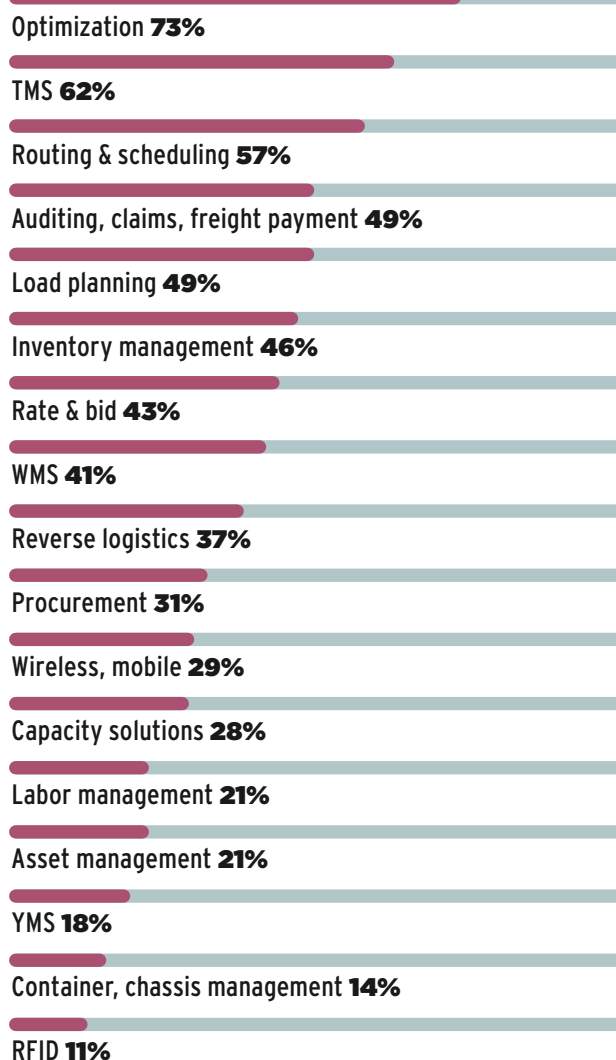


Among the IT solutions addressing supply chain functions, the top offerings are electronic data interchange, available from 70% of respondents; order management, available from 62%; process improvement, provided by 56%; and supplier or vendor management, provided by 50%. The supply chain solutions you would have to hunt hardest to find include product lifecycle management and customer experience management.

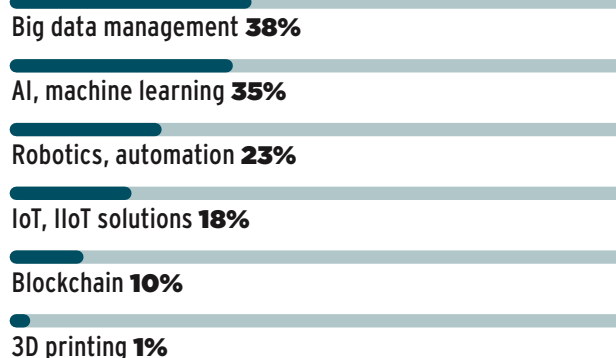
In the logistics category, 73% of IT vendors in our survey offer solutions for optimization; 62% offer transportation management systems; and 57% offer solutions for routing and scheduling. Only 11% provide radio frequency identification solutions.

A smaller, but significant, portion of respondents offer some of the more advanced technologies, such as big data management (38%), artificial intelligence or machine learning (35%), and automation or robotics (23%). Of course, those technologies may also be incorporated into supply chain and logistics solutions.

LOGISTICS



ADVANCED



CHALLENGES: What are the most pressing transportation/logistics challenges?



COVID-19 pushed product supply and demand out of balance in many industries in the past year, while also constricting transportation capacity. So it's no wonder logistics IT vendors who responded to our survey said cost weighed most heavily on shippers' minds.

Seventy-eight percent of vendors noted cost reduction as a critical challenge for their customers. And for shippers keeping a nervous eye on freight moving through congested ports and a tight transportation network, visibility has also been key: 77% of IT vendors noted that as a critical challenge.

Other challenges cited by one-half or more of respondents include transport optimization (68%), capacity (58%), data management (57%), customer service/customer experience (52%), and e-commerce/omnichannel enablement (50%).

Among those concerns, e-commerce/omnichannel enablement (not surprisingly) saw the biggest increase from 2020, when only 37% cited this as a critical concern for customers. Another interesting point: in a year when large numbers of workers moved from the corporate office to the home, only 20% of logistics IT vendors cited work from home as a critical challenge for their customers.

SOURCE: INBOUND LOGISTICS
MARKET RESEARCH

continues on pg. 66



Transportation Challenges Amplify

Many logistics IT vendors responding to our survey cite the linked challenges of capacity and cost reduction as critical issues for shippers over the past year.

The troubles started when the pandemic shut suppliers' factories, and then a rebound in the economy caused demand for parts and materials to surge. Consider auto parts manufacturers that can't get materials fast enough to fill orders from their automaker customers, says Allan Miner, president, CT Logistics in Parma, Ohio, which provides freight payment, audit, and data analysis tools.

"Instead of using a truck to ship a product, they may need to charter an airplane to get it delivered, so the plants don't shut down," he says. Expediting freight that way is expensive.

Such problems, along with driver and capacity shortages, will continue through 2021, Miner says. He points to congestion in West Coast ports that keeps container ships sitting on the ocean waiting for berths. "They can't get unloaded in enough time, and they can't get the containers back in enough time to restock," he says. "It's a ripple effect."

With the sudden economic recovery in 2020, demand for transportation increased faster than carriers could put sidelined equipment and furloughed drivers back on the road, says Robert Boyle, vice president of North American managed logistics at Odyssey Logistics and Technology in Danbury, Connecticut. The surge in e-commerce added to the volume, and events such as the big freeze in Texas also put the squeeze on the transportation network.

Demand forecasting became a challenge, too. Facing transportation disruptions, manufacturers that used to delay shipments until the moment they needed materials are now building safety stock. Their suppliers—Odyssey's customers—now see orders pour in more frequently than in the past. "In this environment, it's very difficult for our customers to plan effectively," Boyle says.

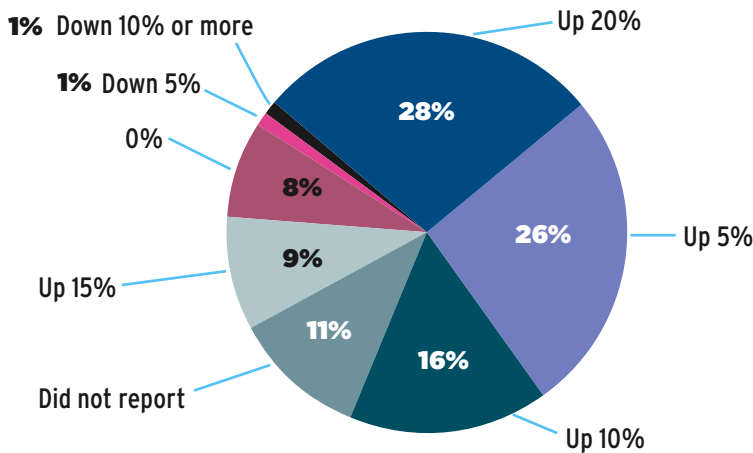
Unusual conditions make shippers cautious, according to data captured in the Transporeon transportation procurement platform. After a lull in the pandemic's early months, shippers started issuing more requests for quotation (RFQs) in the later months of 2020, says Krishna Gilligan, marketing manager at Transporeon in Fort Washington, Pennsylvania. "But the amount they were going out to bid for, and the number of lanes they were putting out to bid, was down about 34%," she notes.

In a volatile transportation market, shippers want to secure capacity for essential freight but perhaps don't want to lock in their rates for too long, she adds.

Apart from challenges caused by the pandemic, shippers also struggle with data management. "Moving data across internal systems, suppliers, carriers, brokers, and other disparate sources is every bit as challenging as moving the physical freight," says Trevor Read, president of San Francisco-based Agistix. Stakeholders in any shipment need to be able to submit or look up information at any point in a transaction.

The Agistix data management solution addresses those challenges by automating, correlating, and normalizing data across disparate data sources.

CUSTOMER BASE: During your last measurement period, did your customer base grow? By how much?

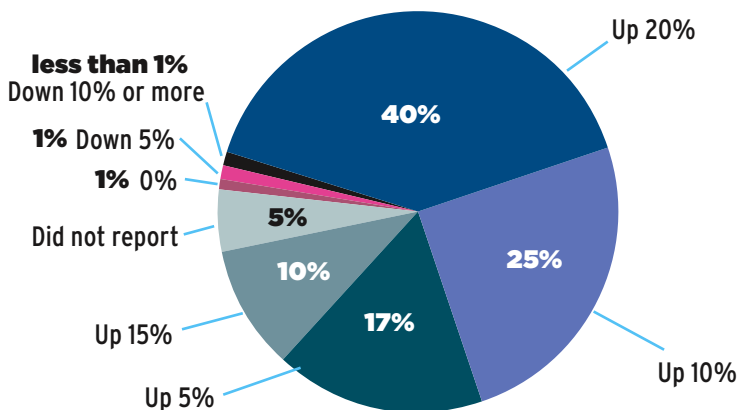


Shippers continue to invest in IT solutions to help them balance inventory with customer demand while keeping operations profitable. Most vendors in our survey report they gained new customers in their most recent measurement periods.

Twenty-eight percent saw their customer bases grow by 20%. Another 9% saw 15% growth; 16% saw 10% growth; and 26% saw 5% growth. Only 2% of vendors reported losing customers, and 8% saw no change.

SOURCE: INBOUND LOGISTICS MARKET RESEARCH

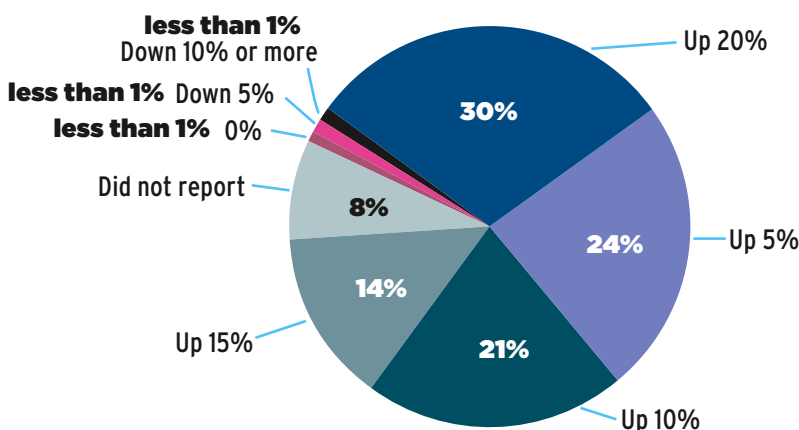
SALES: During your last measurement period, were sales up or down? By how much?



Sales for logistics IT vendors were even stronger than their customer acquisitions. A healthy 40% saw sales rise by 20%. Ten percent of vendors saw a 15% increase in sales; 25% enjoyed a 10% rise; and 17% saw sales go up by 5%. Fewer than 3% of respondents reported their sales had stayed flat or decreased.

SOURCE: INBOUND LOGISTICS MARKET RESEARCH

PROFITS: During your last measurement period, were profits up or down? By how much?



Increases in sale and customers also brought logistics IT vendors greater profits. Thirty percent of respondents reported profits were up by 20%. Another 14% saw profits rise by 15%; 21% enjoyed a 10% increase; and 24% saw profits rise by 5%.

Fewer than 3% of respondents saw profits drop or remain unchanged. That's an improvement over 2020, when 11% of respondents said their profits had stayed flat. ■

SOURCE: INBOUND LOGISTICS MARKET RESEARCH

Honeybee TMS™

Vital to your logistics ecosystem.

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- Global Supply Chain Consulting
- Rate Negotiation + Brokerage
- Strategic Data Analytics



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ctsi-global.com/tms



2021



INBOUND

LOGISTICS

LOGISTICS IT PROVIDERS

360data

920-830-5000
360data.com

PRODUCTS: WMS, TMS, OMS

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- 3D Printing
- AI
- Machine Learning
- Asset Management
- Auditing/Claims/Freight Payment
- Big Data Management
- Blockchain
- Capacity
- Container Chassis Management
- EDI
- ERP
- Inventory Management
- IoT/IIoT
- Labor Management

- Load Planning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Process Improvement
- Procurement
- Product Lifecycle Management
- Rate & Bid
- Remote Workforce Enablement
- Reverse Logistics
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- TMS
- Wireless/Mobile
- WMS

3Gtms

203-567-4610
3gtms.com

PRODUCTS: 3Gtms & Pacejet

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Capacity
- EDI
- Load Planning
- Optimization
- Remote Workforce Enablement
- Routing & Scheduling
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS

3PL Central

888-375-2368
3plcentral.com

PRODUCTS: 3PL
Warehouse Manager

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- 3PL-Specific Billing
- Big Data Management
- Dock Scheduling
- EDI
- Inventory Management
- Load Planning
- Mobile Barcode Scanning
- Optimization
- Order Management
- Paperless Workflows
- Process Improvement
- Rate & Bid
- RFID
- Routing & Scheduling
- Small Parcel Shipping
- Wireless/Mobile
- WMS

IT DECISION SUPPORT TOOL

Search on any data point to
match your requirements to
the Top 100:

BIT.LY/IT-DST

3rdwave

888-330-3633
3rdwave.co

PRODUCTS: 3rdwave iTMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale

SOLUTIONS:

- Auditing/Claims/Freight Payment
- Big Data Management
- Container Chassis Management
- GTM
- Order Management
- Process Improvement
- TMS

A3 Freight Payment

901-759-2966
a3freightpayment.com

PRODUCTS: Spend Management

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Auditing/Claims/Freight Payment
- EDI
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Supply Chain Control Tower
- TMS

Acuitive Solutions

704-321-4992
acuitivesolutions.com

PRODUCTS: Global TMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce
Retail, Wholesale, Transportation

SOLUTIONS:

- Auditing/Claims/Freight Payment
- GTM
- Order Management
- Rate & Bid
- Supplier/Vendor Management
- TMS

Agistix

650-362-2000
agistix.com

PRODUCTS: Visibility, Execution,
Event Management

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Auditing/Claims/Freight Payment
- Big Data Management
- Blockchain
- EDI
- GTM
- Inventory Management
- Load Planning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Process Improvement
- Procurement

- Product Lifecycle Management
- Reverse Logistics
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS

Alpega

877-763-3240
na.alpegagroup.com

PRODUCTS: Alpega TMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:
Manufacturing, Retail, Wholesale

SOLUTIONS:

- Capacity
- Optimization
- Order Management
- Process Improvement
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Strategic Sourcing
- TMS

AR Traffic Consultants

212-736-8565
artraffic.com

PRODUCTS: CalcRate

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System

INDUSTRIES SERVED:
Manufacturing,
Wholesale, Transportation

SOLUTIONS:

- Rate & Bid
- TMS

AI: Artificial Intelligence
CRM/CX: Customer Relationship Management/ Customer Experience
DRP: Distribution Resource Planning
EDI: Electronic Data Interchange
ERP: Enterprise Resource Planning
GTM: Global Trade Management
IoT/IloT: Internet of Things/ Industrial Internet of Things
MRP: Manufacturing Resource Planning
OMS: Order Management System
TMS: Transportation Management System
WMS: Warehouse Management System
YMS: Yard Management System

ASC Software

428-428-1428
ascsoftware.com

PRODUCTS: ASCTrac

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: System, Seat/User

INDUSTRIES SERVED:
E-Commerce, Manufacturing,
Wholesale, Transportation

SOLUTIONS:

- Asset Management
- EDI
- Inventory Management
- Order Management
- Process Improvement
- Routing & Scheduling
- WMS

AutoScheduler.AI

615-428-2036
autoscheduler.ai

PRODUCTS: AutoScheduler.ai

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:

Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Inventory Management
- Labor Management
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Process Improvement
- Robotics/Automation
- Routing & Scheduling
- WMS

Avercast

208-538-5380
avercast.com

PRODUCTS: Demand & Supply

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale

SOLUTIONS:

- Capacity
- Container/Chassis Management
- Demand Management
- Inventory Management
- Labor Management
- Load Planning

- Modeling/Forecasting
- MRP
- Predictive Analytics
- Optimization
- Order Management
- Procurement
- Product Lifecycle Management
- Sales & Operations Planning
- Supplier/Vendor Management

Banyan Technology

844-309-3911
banyantechnology.com

PRODUCTS: Live Carrier &
API Connectivity

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED:

Manufacturing,
Retail, Transportation

SOLUTIONS:

- API
- Optimization
- Visibility

Blue Yonder

480-308-3000
blueyonder.com

PRODUCTS: Luminate Logistics,
Luminate Platform

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Asset Management
- Auditing/Claims/
Freight Payment
- Big Data Management
- Capacity
- Demand Management
- DRP
- ERP
- Inventory Management

- IoT/IIoT
- Labor Management
- Load Planning
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- Predictive Analytics
- Optimization
- Order Management
- Process Improvement
- Procurement
- Product Lifecycle Management
- Rate & Bid
- Remote Workforce Enablement
- Reverse Logistics
- RFID
- Robotics/Automation
- Routing & Scheduling
- Sales & Operations Planning
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS
- YMS

BluJay Solutions

866-584-7280
blujaysolutions.com

PRODUCTS: Network Solutions,
Supply Chain Management

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- EDI
- GTM
- Load Planning
- Optimization
- Procurement
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS
- YMS

C3 Solutions

514-315-3139
c3solutions.com

PRODUCTS: C3 Reservations,
C3 Yard

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Dock Capacity Planning
- Dock Scheduling Systems
- IoT/IIoT
- Optimization
- Process Improvement
- Routing & Scheduling
- Supplier/Vendor Management
- Wireless/Mobile
- YMS

Cadre Technologies

866-252-2373
cadretech.com

PRODUCTS: Cadence WMS,
Accuplus WMS, LogiView

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Inventory Management
- Labor Management
- Order Management
- Reverse Logistics
- RFID
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS
- YMS



IT DECISION SUPPORT TOOL

Search on any data point to
match your requirements to
the Top 100:

BIT.LY/IT-DST

Cass Information Systems

314-506-5500

cassinfo.com

PRODUCTS: Freight Audit Payment
& Business Intelligence Solutions

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:

Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment

Cheetah Software Systems*

*Acquired by MercuryGate

805-373-7111

cheetah.com

PRODUCTS: Cheetah LOOP

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Auditing/Claims/
Freight Payment
- EDI
- Load Planning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Process Improvement

- Reverse Logistics
- Routing & Scheduling
- Sales & Operations Planning
- TMS
- Wireless/Mobile

ClearTrack

877-377-4400

cleartrack.com

PRODUCTS: ClearTrack Clarity

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:

Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- EDI
- GTM
- Modeling/Forecasting
- Predictive Analytics
- Order Management
- Procurement
- Quality & Compliance
- Supplier/Vendor Management
- Supply Chain Control Tower

Controlant

517-630-0630

controlant.com

PRODUCTS: Cold Chain as a Service

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES

SERVED: Transportation

SOLUTIONS:

- Big Data Management
- IoT/IIoT
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Supply Chain Control Tower
- Supply Chain Monitoring

CT Logistics

216-267-2000

ctlogistics.com

PRODUCTS: FreightRater

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED:

Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Big Data Management
- EDI
- Load Planning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Process Improvement
- Procurement
- Rate & Bid
- Routing & Scheduling
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS

CTSI-Global

888-836-5135

ctsi-global.com

PRODUCTS: Honeybee TMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Big Data Management
- Blockchain
- Capacity
- EDI
- ERP
- GTM
- Load Planning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Process Improvement
- Procurement

AI: Artificial Intelligence
CRM/CX: Customer Relationship Management/ Customer Experience
DRP: Distribution Resource Planning
EDI: Electronic Data Interchange
ERP: Enterprise Resource Planning
GTM: Global Trade Management
IoT/IIoT: Internet of Things/ Industrial Internet of Things
MRP: Manufacturing Resource Planning
OMS: Order Management System
TMS: Transportation Management System
WMS: Warehouse Management System
YMS: Yard Management System

- Rate & Bid
- Remote Workforce Enablement
- Routing & Scheduling
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS

Cypress Inland (YardView)

303-781-3430

yardview.com

PRODUCTS: YardViewPro YMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: System

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Asset Management
- Inventory Management
- Load Planning
- Optimization
- Process Improvement
- Routing & Scheduling
- YMS

DAT Freight and Analytics

503-643-4331
dat.com

PRODUCTS: Data Insights
PLATFORM: Cloud/SaaS/Hosted
PRICING: Transactional, Seat/User
INDUSTRIES SERVED: Transportation

SOLUTIONS:

- Asset Management
- Big Data Management
- Capacity
- Load Planning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Process Improvement
- Rate & Bid
- Routing & Scheduling
- Security
- TMS

Data2Logistics

239-425-8033
data2logistics.com

PRODUCTS: Data2InformBI
PLATFORM: Cloud/SaaS/Hosted
PRICING: Transactional
INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/Freight Payment
- Big Data Management
- EDI
- Modeling/Forecasting
- Predictive Analytics
- Process Improvement
- Procurement
- Rate & Bid
- Strategic Sourcing
- Supply Chain Control Tower

Datex

727-571-4159
datexcorp.com

PRODUCTS: Datex FootPrint WMS
PLATFORM: Cloud/SaaS/Hosted, Local
PRICING: Transactional, System, Seat/User
INDUSTRIES SERVED: E-Commerce, Manufacturing, Wholesale, Transportation

SOLUTIONS:

- EDI
- Inventory Management
- Labor Management
- Order Management
- Reverse Logistics
- WMS

DDC FPO

303-674-0681
ddcfpo.com

PRODUCTS: IT Outsourcing
PLATFORM: Cloud/SaaS/Hosted, Managed Service
PRICING: Transactional, Seat/User
INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Auditing/Claims/Freight Payment
- Big Data Management
- EDI
- IT Outsourcing
- Labor Management
- Optimization
- Process Improvement
- Remote Workforce Enablement
- Sales & Operations Planning

DDS Logistics

331-535-3580
ddslogistics.com

PRODUCTS: DDS Shipper
PLATFORM: Cloud/SaaS/Hosted
PRICING: System, Seat/User
INDUSTRIES SERVED: Manufacturing, Retail, Wholesale, Transportation

SOLUTIONS:

- Optimization
- TMS

Demand Solutions (A Logility Company)

800-886-3737
demaandsolutions.com

PRODUCTS: Demand Solutions
PLATFORM: Cloud/SaaS/Hosted, Local
PRICING: Transactional, System, Seat/User
INDUSTRIES SERVED: Manufacturing, Retail, Wholesale
SOLUTIONS:

- AI
- Big Data Management
- Demand Management
- Inventory Management
- Machine Learning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Procurement
- Product Lifecycle Management
- Sales & Operations Planning
- Supplier/Vendor Management
- Supply Chain Control Tower Deployment

Deposco

770-597-4864
deposco.com

PRODUCTS: Bright Suite
PLATFORM: Cloud/SaaS/Hosted
PRICING: Transactional

INDUSTRIES SERVED: E-Commerce, Retail, Wholesale, Transportation

SOLUTIONS:

- Inventory Management
- Optimization
- Order Management
- Routing & Scheduling
- Strategic Sourcing
- WMS

Descartes Systems Group

519-746-8110
descartes.com

PRODUCTS: Logistics & Supply Chain
PLATFORM: Cloud/SaaS/Hosted
PRICING: Transactional, System, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- AI
- Asset Management
- Auditing/Claims/Freight Payment
- Big Data Management
- Capacity
- Dock Appointment Scheduling
- EDI
- GTM
- Inventory Management
- IoT/IIoT
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Rate & Bid
- Remote Workforce Enablement
- Reverse Logistics
- Robotics/Automation
- Routing & Scheduling
- Security
- Strategic Sourcing
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS
- YMS



IT DECISION SUPPORT TOOL

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match your requirements to
the Top 100:

BIT.LY/IT-DST

e2open

866-432-6736

e2open.com

PRODUCTS: Digital Supply Chain

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Control Towers
- Collaborative Manufacturing
- Global Trade Management
- Supply Management

Elemica

770-241-3950

elemica.com

PRODUCTS: Digital Supply Chain

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: System

INDUSTRIES SERVED:
Manufacturing, Transportation

SOLUTIONS:

- AI
- Asset Management
- Auditing/Claims/
Freight Payment
- Big Data Management
- Blockchain
- Demand Management
- EDI
- GTM
- IoT/IIoT
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization

- Order Management
- Predictive Analytics
- Process Improvement
- Procurement
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- TMS
- Wireless/Mobile

enVista

317-208-9100

envistacorp.com

PRODUCTS: Enspire
Commerce, myShipINFO

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Auditing/Claims/
Freight Payment
- CRM
- CX
- Demand Management
- EDI
- ERP
- GTM
- Inventory Management
- IoT/IIoT
- Labor Management
- Machine Learning
- Optimization
- Order Management
- Process Improvement
- Product Lifecycle Management
- Rate & Bid
- Robotics/Automation
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- TMS
- WMS

Epicor

800-999-1809

epicor.com

PRODUCTS: ERP

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED:
E-Commerce, Wholesale

SOLUTIONS:

- Category Management
- CRM
- Demand Management
- DRP
- EDI
- ERP
- Inventory Management
- Labor Management
- Mobile Order Management
- Modeling
- Optimization
- Procurement
- Product Lifecycle Management
- Rate/Bid Management
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- WMS
- Wireless/Mobile

eWMS

847-475-2710

ewms.com

PRODUCTS: eWMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Government

SOLUTIONS:

- EDI
- Inventory Management
- Process Improvement
- WMS

AI: Artificial Intelligence
CRM/CX: Customer Relationship Management/ Customer Experience
DRP: Distribution Resource Planning
EDI: Electronic Data Interchange
ERP: Enterprise Resource Planning
GTM: Global Trade Management
IoT/IIoT: Internet of Things/ Industrial Internet of Things
MRP: Manufacturing Resource Planning
OMS: Order Management System
TMS: Transportation Management System
WMS: Warehouse Management System
YMS: Yard Management System

Far Eye Technologies

214-435-1248

getfareye.com

PRODUCTS: Intelligent Last-Mile Delivery, Intelligent Delivery Visibility, Intelligent Delivery Experience

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, Seat/User

INDUSTRIES SERVED:
E-Commerce, Manufacturing,
Retail, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Optimization
- Reverse Logistics
- Routing & Scheduling
- Supply Chain Control Tower

FLEXE

855-733-7788
flexe.com

PRODUCTS: On-Demand
Warehousing and
Fulfillment Platform

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Retail, Transportation

SOLUTIONS:

- Capacity
- Inventory Management
- Modeling/Forecasting
- Order Management
- Predictive Analytics
- Supplier/Vendor Management
- TMS
- WMS

FlowSpace

323-741-1325
flow.space

PRODUCTS: Logistics,
Warehousing, Fulfillment
and Distribution

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Retail, Wholesale, Transportation

SOLUTIONS:

- EDI
- Inventory Management
- Order Management
- Supply Chain Control Tower
- WMS

Fortigo

512-372-8884
fortigo.com

PRODUCTS: Fortigo TMS, Fortigo
Freight Audit

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- EDI
- Optimization
- Supply Chain Control Tower
- TMS
- Wireless/Mobile

Freight Management Inc. (FMI)

714-397-3262
freightmgmt.com

PRODUCTS: Freight and
Data Management

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:
Manufacturing, Retail, Wholesale

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- EDI
- ERP
- Load Planning
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Procurement
- Process Improvement
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS

Freightgate

714-799-2833
freightgate.net

PRODUCTS: Multimodal
Transportation Solutions

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED:
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- AI
- Auditing/Claims/
Freight Payment
- Big Data Management
- CRM
- CX
- EDI
- ERP
- GTM
- IoT/IIoT
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Procurement
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS

FreightPOP

949-454-4602
freightpop.com

PRODUCTS: FreightPOP

PLATFORM: Cloud/SaaS/Hosted

PRICING: System, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- AI
- Auditing/Claims/
Freight Payment
- EDI
- ERP
- Load Planning
- Load Pooling
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Rate & Bid
- Rate Marketplaces
- Reverse Logistics
- Routing & Scheduling
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- WMS
- YMS
- Zone Skipping

Generix Group North America

514-938-4562
generixgroup.com

PRODUCTS: Solochain WMS

PLATFORM: Local Hybrid of
Licensing and SaaS

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Demand Management
- Inventory Management
- Manufacturing Execution System
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Robotics/Automation
- Routing & Scheduling
- TMS
- WMS



IT DECISION SUPPORT TOOL

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match your requirements to
the Top 100:

BIT.LY/IT-DST

Highway 905

908-874-4867

highway905.com

PRODUCTS: WMS, TMS, Shipment Tracking & Alerts System

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Transportation

SOLUTIONS:

- Auditing/Claims/Freight Payment
- EDI
- Inventory Management
- Labor Management
- Load Planning
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Process Improvement
- Procurement
- Reverse Logistics
- RFID
- Robotics/Automation
- Routing & Scheduling
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS

Honeywell

877-841-2840

honeywell.com

PRODUCTS: Honeywell Forge

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- Business Intelligence & Analytics
- Labor Management
- Order Fulfillment
- Robotics/Automation

Infor

800-244-5479

infor.com

PRODUCTS: ERP

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/Freight Payment
- Big Data Management
- Blockchain
- Capacity
- Demand Management
- DRP
- EDI
- ERP
- GTM
- Inventory Management
- IoT/IIoT
- Labor Management
- Load Planning
- Machine Learning
- Modeling/Forecasting
- MRP
- Optimization
- Order Management
- PLM
- Predictive Analytics
- Process Improvement
- Procurement
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS
- YMS

Intelligent Audit

201-880-1110

intelligentaudit.com

PRODUCTS: Intelligent Audit

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce Retail, Wholesale, Transportation

SOLUTIONS:

- Auditing/Claims/Freight Payment
- Blockchain
- Business Intelligence & Analytics

John Galt Solutions

312-701-9026

johngalt.com

PRODUCTS: Atlas Planning Platform

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale

SOLUTIONS:

- AI
- Big Data Management
- Capacity
- Demand Management
- Inventory Management
- IoT/IIoT
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Procurement
- Product Lifecycle Management
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower

AI:	Artificial Intelligence
CRM/CX:	Customer Relationship Management/ Customer Experience
DRP:	Distribution Resource Planning
EDI:	Electronic Data Interchange
ERP:	Enterprise Resource Planning
GTM:	Global Trade Management
IoT/IIoT:	Internet of Things/ Industrial Internet of Things
MRP:	Manufacturing Resource Planning
OMS:	Order Management System
TMS:	Transportation Management System
WMS:	Warehouse Management System
YMS:	Yard Management System

Keelvar

021-492-8923

keelvar.com

PRODUCTS: Sourcing Optimizer and Sourcing Automation

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: Manufacturing, Retail, Wholesale, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Supplier/Vendor Management

Kinaxis

844-390-0322
kinaxis.com

PRODUCTS: Kinaxis RapidResponse

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:

E-Commerce, Manufacturing, Retail, Transportation

SOLUTIONS:

- AI
- Capacity
- Demand Management
- ERP
- Inventory Management
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Product Lifecycle Management
- Robotics/Automation
- Sales & Operations Planning
- Security
- Supplier/Vendor Management
- Supply Chain Control Tower

Körber

800-328-3271
koerber.com/en/supply-chain

PRODUCTS: Automation, Voice, Robotics, Materials Handling

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- Robotics
- Systems Integration & Automation
- WMS

LLamasoft (a Coupa Company)

734-418-3120
llamasoft.com

PRODUCTS: LLama.ai

PLATFORM: Cloud/SaaS/Hosted, Local

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- AI
- Capacity
- Demand Management
- Enterprise Decision-Making Platform
- Inventory Management
- Machine Learning
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Process Improvement
- Reverse Logistics
- Routing & Scheduling

LOG-NET

732-758-6811
log-net.com

PRODUCTS: LOG-NET

PLATFORM: Cloud/SaaS/Hosted

PRICING: System, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- AI
- Asset Management
- Auditing/Claims/Freight Payment
- Big Data Management
- Blockchain
- Capacity
- Container Chassis Management
- CRM
- CX
- Demand Management
- EDI
- ERP
- GTM
- Inventory Management
- Load Planning

- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Procurement
- Product Lifecycle Management
- Rate & Bid
- Remote Workforce Enablement
- Reverse Logistics
- RFID
- Robotics/Automation
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- WMS
- YMS

Logility

800-762-5207
logility.com

PRODUCTS: Logility Digital Supply Chain Platform

PLATFORM: Cloud/SaaS/Hosted, Local

PRICING: Transactional, System, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Wholesale, Transportation

SOLUTIONS:

- AI
- Big Data Management
- Blockchain
- Demand Management
- Inventory Management
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Product Lifecycle Management
- Sales & Operations Planning
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower

Logistical Labs

312-999-9762
logisticallabs.com

PRODUCTS: LoadDex, BidDex

PLATFORM: Cloud/SaaS/Hosted

PRICING: Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- Big Data Management
- Capacity
- CRM
- CX
- Load Planning
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Process Improvement
- Procurement
- Rate & Bid
- Remote Workforce Enablement
- Routing & Scheduling
- Sales & Operations Planning
- Strategic Sourcing
- Supplier/Vendor Management
- TMS

LogistiVIEW

877-797-8232
logistiview.com

PRODUCTS: Software Automation Platform

PLATFORM: Cloud/SaaS/Hosted, Local

PRICING: Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- AI
- Big Data Management
- IoT/IIoT
- Machine Learning
- Optimization
- Process Improvement
- Remote Workforce Enablement
- Robotics/Automation
- Warehouse Orchestration
- Wireless/Mobile



IT DECISION SUPPORT TOOL

Search on any data point to
match your requirements to
the Top 100:

BIT.LY/IT-DST

Logistix Solutions

703-203-1274

logistixsolutions.com

PRODUCTS: ProLogix

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Capacity
- Demand Management
- Inventory Management
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Process Improvement
- Reverse Logistics
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- TMS

Logistyx Technologies

847-884-1940

logistyx.com

PRODUCTS: Logistyx TME

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional

INDUSTRIES SERVED:
E-Commerce, Manufacturing,
Retail, Transportation

SOLUTIONS:

- AI
- Auditing/Claims/Freight Payment
- Business Intelligence
- Capacity
- Carrier Management
- Consolidated Shipping
- Documentation
- Machine Learning
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Supply Chain Control Tower
- TMS

Made4net

201-645-4345

made4net.com

PRODUCTS: WarehouseExpert

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: System, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Inventory Management
- Labor Management
- Routing & Scheduling
- WMS
- YMS

Magaya

786-845-9150

magaya.com

PRODUCTS: Supply
Chain Management

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, Seat/User

INDUSTRIES SERVED:
Wholesale, Transportation

SOLUTIONS:

- Customs Compliance
- Inventory Management
- Optimization
- Order Management
- Rate & Bid
- Robotics/Automation
- Supply Chain Control Tower
- Wireless/Mobile
- WMS

MagicLogic Optimization

206-274-6248

magiclogic.com

PRODUCTS: MagicLogic

PLATFORM: Cloud/SaaS/Hosted,
Local On Premise

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Cartonization & Palletization
- ERP
- Load Planning
- Machine Learning
- Optimization
- Process Improvement
- Reverse Logistics
- Robotics/Automation
- TMS
- WMS

Manhattan Associates

877-596-9208

manh.com

PRODUCTS: Manhattan Active
Transportation Management

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Inventory Management
- Labor Management
- Load Planning
- Order Management
- Procurement
- Robotics/Automation
- Routing & Scheduling
- TMS
- WMS

AI:	Artificial Intelligence
CRM/CX:	Customer Relationship Management/ Customer Experience
DRP:	Distribution Resource Planning
EDI:	Electronic Data Interchange
ERP:	Enterprise Resource Planning
GTM:	Global Trade Management
IoT/IIoT:	Internet of Things/ Industrial Internet of Things
MRP:	Manufacturing Resource Planning
OMS:	Order Management System
TMS:	Transportation Management System
WMS:	Warehouse Management System
YMS:	Yard Management System

Mantis

678-784-4015

mantis.group

PRODUCTS: Logistics Vision Suite

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: System, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Container/Chassis Management
- EDI
- Inventory Management
- Labor Management
- Optimization
- Order Management
- Process Improvement
- Product Lifecycle Management
- Reverse Logistics
- RFID
- Routing & Scheduling
- Supply Chain Control Tower
- Wireless/Mobile
- WMS
- YMS

MercuryGate

919-469-8057
mercurygate.com

PRODUCTS: TMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System

INDUSTRIES SERVED:

Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Load Planning
- Optimization
- Procurement
- Rate & Bid
- Routing & Scheduling
- Supply Chain Control Tower
- TMS
- Transportation Management

MPO

813-777-5060
mpo.com

PRODUCTS: Logistics and
Management Platform Order-
Centric TMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Big Data Management
- Capacity
- EDI
- Inventory Management
- IoT/IloT
- Modeling/Forecasting
- Predictive Analytics
- Optimization
- Order Management
- Process Improvement
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- Wireless/Mobile

NetSuite

877-638-7848
netsuite.com

PRODUCTS: ERP, CRM, E-Commerce

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- CRM
- Fulfillment
- Order Management
- Procurement
- Supply Chain Control Tower
- Supply Chain Management
- TMS
- Warehousing

NGC Software

800-690-0642
ngcsoftware.com

PRODUCTS: NGC Digital Supply
Chain Platform

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale

SOLUTIONS:

- AI
- Big Data Management
- Blockchain
- Demand Management
- Inventory Management
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Product Lifecycle Management
- Sales & Operations Planning
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower

Nulogx

416-816-3341
nulogx.com

PRODUCTS: TMS, Audit & Analytics

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Load Planning
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Rate & Bid
- Routing & Scheduling
- Supply Chain Control Tower
- TMS

Nulogy

888-685-6491
nulogy.com

PRODUCTS: Visibility, Order &
Capacity Management, Analytics

PLATFORM: Cloud/SaaS/Hosted

PRICING: Free (pricing based on
other variables)

INDUSTRIES SERVED:
E-Commerce, Manufacturing,
Retail Transportation

SOLUTIONS:

- AI
- Asset Management
- Capacity
- Demand Management
- EDI
- ERP
- Inventory Management
- IoT/IloT
- Labor Management
- Machine Learning
- Modeling/Forecasting

- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Procurement
- Product Lifecycle Management
- Robotics/Automation
- Sales & Operations Planning
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- Wireless/Mobile
- WMS

nVision Global

770-474-4122
corporate.nvisionglobal.com

PRODUCTS: IMPACT TMS Contract
Management Procurement
On-Demand Shipping Quoting

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Big Data Management
- Capacity
- Contract Management
- Optimization
- Order Management
- Procurement
- Rate & Bid
- Routing & Scheduling
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS



IT DECISION SUPPORT TOOL

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the Top 100:

BIT.LY/IT-DST

One Network Enterprises

972-385-8630

onenetwork.com

PRODUCTS: Intelligent Logistics

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Asset Management
- Auditing/Claims/
Freight Payment
- Blockchain
- GTM
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Rate & Bid
- Routing & Scheduling
- Sales & Operations Planning
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- WMS
- YMS

Optricity

929-237-4846

optricity.com

PRODUCTS: OptiSlot DC, @Ease
Warehousing Technologies,
Moves Conductor

PLATFORM: Local Virtual
Server-based Environments,
Virtual Machine in Cloud-
based Environments

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Capacity
- Inventory Management
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Process Improvement
- Slotting Optimization

Oracle

737-867-1000

oracle.com

PRODUCTS: Oracle Cloud, Oracle
Cloud ERP, Oracle Cloud SCM,
Oracle Cloud Logistics, Oracle
Transportation Management,
Oracle Global Trade Management,
Oracle Warehouse Management

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Asset Management
- Auditing/Claims/
Freight Payment
- Big Data Management
- Blockchain
- Capacity
- Container/Chassis Management
- CRM
- CX
- Demand Management
- EDI
- ERP
- GTM
- Inventory Management
- IoT/IIoT
- Labor Management
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Procurement
- Product Lifecycle Management
- Rate & Bid
- Remote Workforce Enablement

- Reverse Logistics
- RFID
- Robotics/Automation
- Routing & Scheduling
- Sales & Operations Planning
- Security
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS
- YMS

ORTEC

404-736-9800

ortec.com

PRODUCTS: Optimization, Analytics

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Asset Management
- Big Data Management
- Container Chassis Management
- EDI
- ERP
- Inventory Management
- Labor Management
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Remote Workforce Enablement
- Reverse Logistics
- Robotics/Automation
- Routing & Scheduling
- Sales & Operations Planning
- Strategic Sourcing
- Supply Chain Control Tower
- TMS
- Wireless/Mobile

AI: Artificial Intelligence
CRM/CX: Customer Relationship Management/ Customer Experience
DRP: Distribution Resource Planning
EDI: Electronic Data Interchange
ERP: Enterprise Resource Planning
GTM: Global Trade Management
IoT/IIoT: Internet of Things/ Industrial Internet of Things
MRP: Manufacturing Resource Planning
OMS: Order Management System
TMS: Transportation Management System
WMS: Warehouse Management System
YMS: Yard Management System

Pierbridge

508-630-1220

pierbridge.com

PRODUCTS: Transtream

PLATFORM: Cloud/SaaS/
Hosted Hybrid

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Big Data Management
- Cartonization/Containerization
- Cross-border Consolidation
- IoT/IIoT
- Multi-carrier Parcel Management
- Multi-shipper Management
- Optimization
- Rate & Bid
- Remote Workforce Enablement
- Reverse Logistics
- Routing & Scheduling
- Supplier/Vendor Management
- TMS

PINC Solutions

510-474-7500

pinc.com

PRODUCTS: Yard Management & Visibility

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- Artificial Intelligence
- Asset Management
- Container/Chassis Management Inventory Management
- IoT/IIoT
- Machine Learning
- RFID
- Robotics/Automation
- YMS

Princeton TMX

260-341-5017

princetonmx.com

PRODUCTS: Princeton TMX

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:

Manufacturing, Retail, Wholesale, Transportation

SOLUTIONS:

- AI
- Asset Management
- Auditing/Claims/Freight Payment
- Big Data Management
- Blockchain
- Capacity
- CRM
- CX
- Demand Management
- EDI
- Inventory Management
- IoT/IIoT
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Procurement
- Rate & Bid

- Remote Workforce Enablement
- Routing & Scheduling
- Strategic Sourcing
- Supplier/Vendor Management
- Supply Chain Control Tower
- Tender & Exception Management
- TMS
- Wireless/Mobile
- YMS

project44

312-376-8883

project44.com

PRODUCTS: Advanced Visibility Platform

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Transportation

SOLUTIONS:

- AI
- Machine Learning
- Optimization
- Process Improvement
- Real-time Visibility

QAD Precision

312-239-1630

precisionsoftware.com

PRODUCTS: QAD Precision GTTE

PLATFORM: Cloud/SaaS/Hosted, Local

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/Freight Payment
- GTM
- Reverse Logistics
- Supply Chain Control Tower
- TMS

Quality Software Systems (QSSI)

732-805-0400

qssi-wms.com

PRODUCTS: PowerHouse WMS & TMS

PLATFORM: Cloud/SaaS/Hosted, Local

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Transportation

SOLUTIONS:

- TMS
- WMS

RateLinx

262-565-6150

ratelinx.com

PRODUCTS: ShipLinx, TracLinx, PayLinx

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale

SOLUTIONS:

- AI
- Auditing/Claims/Freight Payment
- Big Data Management
- Load Planning
- Logistics Data
- Machine Learning
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Procurement
- Rate & Bid
- Routing & Scheduling
- TMS

SaaS Transportation

901-832-2401

saas transportation.com

PRODUCTS: TMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: System, Seat/User

INDUSTRIES SERVED:

Manufacturing, Transportation

SOLUTIONS:

- Auditing/Claims/Freight Payment
- EDI
- Load Planning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Rate & Bid
- Routing & Scheduling
- Supplier/Vendor Management
- TMS

SAP

800-872-1727

sap.com

PRODUCTS: ERP

PLATFORM: Cloud/SaaS/Hosted, Local

PRICING: Transactional, System, Seat/User

INDUSTRIES SERVED: E-Commerce, Manufacturing, Retail, Wholesale, Services/Gov't, Transportation

SOLUTIONS:

- AI
- Demand & Supply Planning
- Predictive Analytics
- Product Lifecycle Management
- Sales & Operations Planning
- Strategic Sourcing
- Visibility



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match your requirements to
the Top 100:

BIT.LY/IT-DST

Slync.io

817-541-9788
slync.io

PRODUCTS: Logistics Orchestration

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:
Manufacturing, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Big Data Management
- Capacity
- Container/Chassis Management
- Load Planning
- Order Management
- Process Improvement
- Robotics/Automation
- Supplier/Vendor Management
- Supply Chain Control Tower

SMC³

800-845-8090
smc3.com

PRODUCTS: CzarLite, RateWare XL,
CarrierConnect XL, BatchMark,
BidSense, LTL APIs

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: Transportation

SOLUTIONS:

- EDI
- Optimization
- Process Improvement
- Procurement
- Product Lifecycle Management
- Rate & Bid
- Sales & Operations Planning

Softeon

855-833-2848
softeon.com

PRODUCTS: Softeon WMS, Softeon
WES, Softeon DOM

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Demand Management
- Inventory Management
- IoT/IloT
- Labor Management
- Load Planning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Product Lifecycle Management
- Reverse Logistics
- RFID
- Robotics/Automation
- Routing & Scheduling
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- WMS
- YMS

SphereWMS

818-678-2601
spherewms.com

PRODUCTS: SphereWMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: System

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- EDI
- Inventory Management
- Labor Management
- Optimization
- Order Management
- Reverse Logistics
- RFID
- Supplier/Vendor Management

- Supply Chain Control Tower
- Wireless/Mobile
- WMS

SwanLeap

608-515-3235
swanleap.com

PRODUCTS: SwanLeap

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Big Data Management
- Capacity
- Demand Management
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Predictive Analytics
- Process Improvement
- Procurement
- Product Lifecycle Management
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Sales & Operations Planning
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS

Synergy North America

720-372-1250
snapfulfil.com

PRODUCTS: SnapFulfil, SnapCart

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Robotics/Automation
- WMS

AI: Artificial Intelligence
CRM/CX: Customer Relationship Management/ Customer Experience
DRP: Distribution Resource Planning
EDI: Electronic Data Interchange
ERP: Enterprise Resource Planning
GTM: Global Trade Management
IoT/IloT: Internet of Things/ Industrial Internet of Things
MRP: Manufacturing Resource Planning
OMS: Order Management System
TMS: Transportation Management System
WMS: Warehouse Management System
YMS: Yard Management System

Tecsys

514-866-0001
tecsys.com

PRODUCTS: Supply Chain Management

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Demand Management
- ERP
- Inventory Management
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Process Improvement
- Reverse Logistics
- RFID
- Routing & Scheduling
- Supply Chain Control Tower
- TMS
- WMS
- YMS

Tive

617-631-8483
tive.co

PRODUCTS: Real-time Trackers

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional, System

INDUSTRIES SERVED:

Manufacturing,
Retail, Transportation

SOLUTIONS:

- Big Data Management
- IoT/IIoT
- Supply Chain Control Tower
- Visibility

Transporeon

267-281-1555
transporeon.com

PRODUCTS: Transporeon Ticontract

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,

Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- AI
- Auditing/Claims/Freight Payment
- Big Data Management
- Capacity
- EDI
- Load Planning
- Machine Learning
- Process Improvement
- Procurement
- Rate & Bid
- Strategic Sourcing
- Supplier/Vendor Management
- TMS
- YMS

TransportGistics

631-567-4100
transportgistics.com

PRODUCTS: TGI-gTMS

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,

Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- Auditing/Claims/
Freight Payment
- Big Data Management
- GTM
- Order Management
- Procurement
- Rate & Bid
- Reverse Logistics
- Routing & Scheduling
- Supplier/Vendor Management
- TMS

Trimble

866-920-3345
transportation.trimble.com

PRODUCTS: Trimble

PLATFORM: Cloud/SaaS/
Hosted, Local

PRICING: Transactional, System,
Seat/User

INDUSTRIES SERVED: E-Commerce,

Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Asset Management
- Big Data Management
- Capacity
- Demand Management
- EDI
- ERP
- Inventory Management
- IoT/IIoT
- Labor Management
- Load Planning
- Machine Learning
- Modeling/Forecasting
- Optimization
- Order Management
- Predictive Analytics
- Procurement
- Reverse Logistics
- Routing & Scheduling
- Security
- Supplier/Vendor Management
- Supply Chain Visibility
- TMS
- Wireless/Mobile

U.S. Bank

866-274-5898
[usbpayment.com/
freight-payment](http://usbpayment.com/freight-payment)

PRODUCTS: U.S. Bank
Freight Payment

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- Auditing/Claims/Freight Payment
- Contract Optimization
- EDI
- Freight Benchmarking
- Modeling/Forecasting
- Optimization
- Parcel Spend Management
- Predictive Analytics
- Process Improvement
- Rate & Bid
- Strategic Sourcing
- U.S. Bank Freight Payment Index

UCBOS (ITOrizon)

919-909-9076
ucbos.com

PRODUCTS: Business
Execution Platform

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Asset Management
- Auditing/Claims/Freight Payment
- Container/Chassis Management
- EDI
- ERP
- Inventory Management
- IoT/IIoT
- Labor Management
- Load Planning
- Machine Learning
- Order Management
- Procurement
- Product Lifecycle Management
- Reverse Logistics
- RFID
- Robotics/Automation
- Routing & Scheduling
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS
- Wireless/Mobile
- WMS

UROUTE

313-600-5308
uroute.net

PRODUCTS: TMS

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED:

Manufacturing, Retail, Wholesale,
Services/Gov't, Transportation

SOLUTIONS:

- AI
- Auditing/Claims/Freight Payment
- Capacity
- EDI
- Load Planning
- Machine Learning
- Optimization
- Order Management
- Procurement
- Rate & Bid
- Remote Workforce Enablement
- Routing & Scheduling
- Supplier/Vendor Management
- TMS
- Wireless/Mobile

WIN (Web Integrated Network)

855-946-4739
gowithwin.com

PRODUCTS: WIN Web
Integrated Network

PLATFORM: Cloud/SaaS/Hosted

PRICING: Transactional

INDUSTRIES SERVED: E-Commerce,
Manufacturing, Retail,
Wholesale, Transportation

SOLUTIONS:

- EDI
- ERP
- Load Planning
- Optimization
- Order Management
- Process Improvement
- Procurement
- Rate & Bid
- Remote Workforce Enablement
- Routing & Scheduling
- Sales & Operations Planning
- Supplier/Vendor Management
- Supply Chain Control Tower
- TMS

ALC Logistics

800-282-3246

www.alclogistics.com

ALC Logistics' **ALCHEMY TMS** is designed to help shippers effectively and efficiently address transportation demands—including multi-pick/multi-drop, change orders, spot bids, and appointment scheduling—by simplifying the processes involved in managing supply chain networks. The solution uses an SaaS/cloud architecture and integrates with ERP, order entry, and financial systems.

Averitt Express

1-800-AVERITT

www.averittexpress.com

AVERITT CONNECT, Averitt's online, self-serve, multi-carrier TMS, enables shippers to control their shipping needs directly with their carriers. Through technology integrations, shippers can shop for LTL rates via Averitt Connect and book and track the shipments directly through the online portal. Powered by MyCarrierTMS.

Cardinal Logistics Management

704-789-2000

www.cardlog.com

Cardinal's flexible and comprehensive transportation IT system offers seamless communication across all transportation for end-to-end visibility. Whether managing fuel consumptions and driver e-logs, or capturing product condition upon loading and delivery, Cardinal can customize its solution to supply the information a shipper needs. Cardinal's transportation IT platform easily integrates into existing order management systems and extracts relevant data to manage a transportation network's key performance indicators.

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GlobalTranz

866-275-1407

www.globaltranz.com

The **GLOBALTRANZ TMS** provides end-to-end transportation management, from robust track-and-trace capabilities to real-time freight analytics. Users gain immediate access to GlobalTranz's network of 50,000+ truckload carriers and 120+ local, regional, and national LTL carriers. As a company's needs grow, the GlobalTranz TMS grows with it, providing e-commerce and system integrations, freight claims management, advanced freight bill payment and audit, and carrier relationship management services to negotiate and maintain rates.

Kenco

800-758-3289

www.kencogroup.com

STARR is Kenco's latest technology offering. This advanced transportation management system empowers small to mid-sized shippers with the technology, resources, and competitive freight rates they need to effectively manage their networks and drive business success. With fast and easy deployment, out-of-the-box reporting, and intuitive user experience, Kenco customers can quickly leverage this TMS tool to optimize their transportation networks to lower costs and increase customer satisfaction. Kenco STARR includes access to free training and specialized services through a single point of contact, enabling customers to leverage these benefits.

Port Logistics Group

855-504-1191

www.portlogisticsgroup.com

Port Logistics Group recently acquired **WHIPLASH MERCHANDISING**, a flexible, scalable e-commerce fulfillment platform. The Whiplash platform provides retailers and brands with real-time inventory, warehouse, and order management. Whiplash receives order information from multiple sources, updates

inventory, and allows its customers (as the shipper) to view, change, update, or pause orders for the end consumer. The Whiplash e-commerce fulfillment platform easily integrates with third-party shopping cart platforms, such as Shopify, Magento, StitchLabs and Returnly, and features integrated, discounted parcel shipping.

Transplace

866-413-9266

www.transplace.com

Transplace's **SAAS TMS** is an internally developed, multi-tenant, comprehensive, cloud-based TMS that spans the core functionality of planning, execution, and settlement across all modes with strong analytics and performance management. Transplace's **SAAS PARCEL TMS** is an enterprise-class, multi-carrier, parcel shipping solution embedded in the Transplace TMS for shippers needing a full-service solution. It is also offered as a standalone technology for shippers that only need parcel transportation management. The solution streamlines and optimizes carrier selection, manifesting, tracking, invoice reconciliation, and business intelligence reporting.

Transportation Insight

877-226-9950

www.transportationinsight.com

Transportation Insight's unified transportation management platform is designed to rate and shop carriers, create shipping documents, and track and tender shipments with added visibility and reporting. The platform manages shipment execution processes—automate load tenders, secure carriers with a private bid board, monitor carrier confirmations, create bills of lading, and manage transportation document storage. It also lets users track and trace freight in real time so they can plan labor or production and communicate with partners. Insight TMS integrates with ERP software, allowing improved visibility to cost and compliance performance measurement.

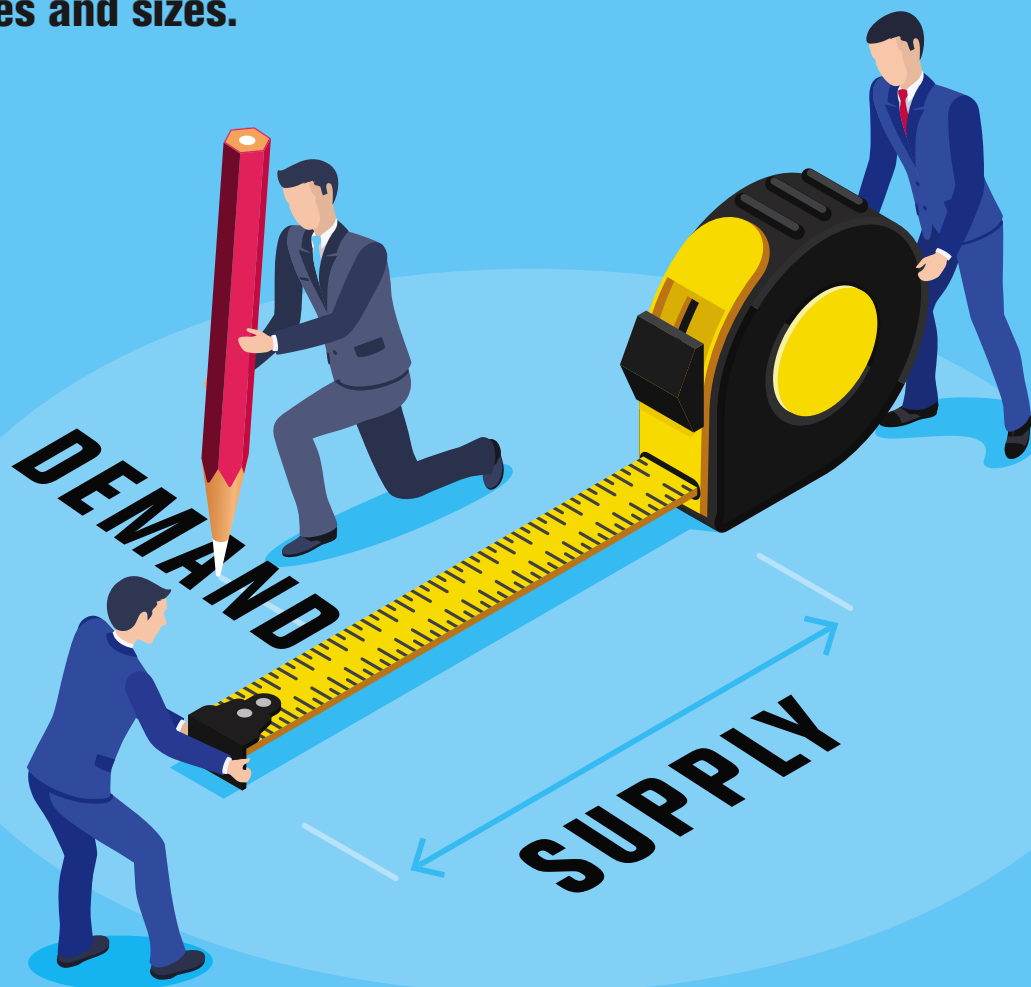
3PLs Custom Fit Solutions

From providing seamless technology integrations to tailoring transportation networks, 3PLs reinforce supply chains of all shapes and sizes.

VUCA or “volatility, uncertainty, complexity, and ambiguity” has been disrupting supply chains for several years, says Jim Tompkins, founder and chair of consulting firm Tompkins International.

Then came 2020. “COVID-19 has been the mother of all VUCAs,” he says, unraveling many supply chains and compelling shippers to intensify their focus on supply chain resilience and agility.

These shifts drive organizations to seek “capital efficient” ways to run their businesses, says Balika Sonthalia, a partner in the strategic operations practice of Kearney, a global management consultant. She’s also co-author of the firm’s annual State of Logistics report. “Sectors that were previously less open to the concept



of one-stop-shop third-party logistics (3PL) providers will be more open now,” Sonthalia adds.

The global 3PL market will grow by more than 8% annually between 2020 and 2025 with “the rapid growth of e-commerce driving the demand for 3PL services across the globe,” according to Mordor Intelligence.

To get ahead of this growth, many 3PLs are investing in technology and solutions that enhance their ability to help clients meet the complexity of e-commerce orders, heightened expectations for speedy and accurate deliveries, and demand for features such as package track and trace.

MOVING THE TECHNOLOGY NEEDLE

“Going forward, it is not as much about the technology within the four walls,” Tompkins says. Visibility must extend to all areas of the supply chain.

Companies’ need for end-to-end supply chain visibility is driving demand for seamless technology integrations between shippers and their supply chain partners, says Dave Brajkovich, chief technology officer with Polaris Transportation Group, based in Toronto, Ontario.

“A lot of our clients expect us to not only feed them the transactional pieces of service, at a competitive price and high quality, but also to provide insights and real-time data on their freight and order status,” he notes.

At the same time, insight and data has to move “quicker, faster, and better” between logistics providers and their clients, so it can aid in intelligent decision-making, says Dave Cox, president and chief executive officer of Polaris. This is also generating interest in technology integrations.

As a result, while technologies that move information in batches, like electronic data interchange (EDI), are still widely used, many are being replaced with direct, system-to-system integration using application programming interfaces (APIs), says Chris Burroughs, vice president of government affairs for the Transportation Intermediaries Association (TIA).

Over the past few years, shippers, 3PLs, and carriers have implemented freight visibility platforms to assemble tracking data gathered from electronic logging devices (ELDs), back-office systems, and mobile applications, along with external sources, such as traffic and weather apps.

The result? They give “supply chain professionals a central dashboard to proactively monitor all shipments in transit,” Burroughs adds.

TRANSPORTING GOODS MORE QUICKLY

Technology that can speed order fulfillment and delivery has also become critical, says Tom McCormack, chief information officer with Taylored Services, an *Inbound Logistics* Top 100 3PL with locations on the East and West Coasts of the United States.

“Two years ago, it was acceptable to guarantee an order placed at 10 a.m. or 11 a.m. would ship out that day. Now, that time frame has slid to late afternoon,” he says.

Adding further complexity is the inherent randomness of e-commerce orders. “Consumer behavior is very difficult to predict,” McCormack says. In contrast, orders headed to distribution centers or retail stores tend to follow established patterns.

Another key consideration in logistics providers’ technology investments is an ability to supplement their labor forces, given both the unpredictability of e-commerce orders and a tight labor market, McCormack says.

A growing number of 3PLs are turning to technology, such as autonomous bots, to supplement their labor force as needed. Material movement and automation equipment can also supplement a company’s workforce.

Together, these trends are prompting a shift in the relationships between logistics providers and their clients, Cox says. Rather than focus on transactions, logistics providers are implementing solutions and processes that allow them to work as partners with their clients. This better allows shippers to not only meet, but to step ahead of the increasing demands of e-commerce transactions.

FINDING A 3PL THAT MEASURES UP

When assessing potential logistics partners, consider these attributes:

1) An ability to invest in and develop solutions that fit your needs. Technology today must offer real-time, end-to-end supply chain visibility and actionability to deal with uncertainty.

2) An account management team that includes operations experts who can help solve problems. “Pure-play, sales-driven account teams are not helpful for shippers,” says Balika Sonthalia of Kearney.

3) Internally integrated teams. Some logistics providers have different account teams for transportation and warehousing. That can make it harder to holistically address challenges.

4) A footprint that realistically matches your needs. Early in the pandemic, shipments were heavily backed up at the Ports of Los Angeles and Long Beach. Providers that worked with multiple ports had more options for re-routing, says Christopher Monk, managing director in the supply chain consulting practice with Protiviti.

Similarly, to meet today’s tight delivery time frames, logistics providers need warehouses closer to end consumers, rather than one or a handful of warehouses in remote locations.

The logistics providers profiled here demonstrate how they’re implementing the tools and processes that allow them to work with their clients as true partners.

POLARIS TRANSPORTATION GROUP: SUPPORTING ALL SUPPLY CHAIN FACETS

Through innovation, service, and a collaborative approach, Polaris Transportation Group assists its customers with all facets of their supply chains, including Canada/U.S. cross-border and domestic over-the-road LTL, intermodal service, short- and long-term warehousing and distribution services, and expedited ground and air service, among other services.

As important as its service offerings, Polaris has transformed itself into a



From over-the-road to digital services, Polaris Transportation Group supports all supply chain facets. Pictured above (left to right): CTO Dave Brajkovich, CEO Dave Cox.

digitally enabled company. “Technology has been an absolute game changer for the transportation supply chain industry, and has become table stakes for doing business,” Brajkovich says.

NorthStar Digital Solutions, a Polaris technology subsidiary established in 2019, is charged with creating “software products that can help the supply chain transportation vertical become more digitally adept,” Brajkovich says.

Through NorthStar, Polaris leverages multiple technologies, including robotic process automation, machine learning, Internet of Things, hyper-ledger solutions, and artificial intelligence to consolidate and automate older technology, and create seamlessness between Polaris and its clients and partners.

GREAT CUSTOMER EXPERIENCE SEWN UP

This isn’t technology just for technology’s sake. The goal always is to enhance the customer experience. Technology provides Polaris and its clients with quicker access to information, and the ability to better understand data and make more informed decisions.

“You can say, ‘here is where I need to focus.’ And you know your time is being spent in the right areas,” Brajkovich says.

This benefits both Polaris and its customers. “Because we’re able to better predict, for instance, when our customers are going to ship, we can

NO LONGER HEMMED IN BY A TRANSACTIONAL FOCUS, 3PLs ACT AS PARTNERS, IMPLEMENTING SOLUTIONS AND PROCESSES THAT LET SHIPPERS BUILD AGILE SUPPLY CHAINS.

manage our capacity better,” Brajkovich says. That boosts the likelihood shippers will gain access to the capacity they need, when they need it.

Its investments in technology have also helped Polaris scale its business while freeing employees from manual, mundane jobs to work on more complicated challenges. “We’re creating a smarter Polaris engineer,” Brajkovich says.

Polaris also leverages GPS technology to help ensure its drivers remain safe and to enable dispatchers to schedule more efficiently. A mobile app has moved many paper shipping and transportation documents online, reducing contact points between truckers and shippers—key during the pandemic—and streamlining previously manual processes.

To safeguard its technology offerings and its partnerships with clients, Polaris has invested heavily in security. “We see investing in security as an insurance policy to protect our business, our clients, and our partners,” Brajkovich says.

All these investments represent an important improvement to what has been standard ways of operating. “Traditional business decisions involve a budget that predicts forward, and then a monthly statement that looks backwards. There was nothing in real time,” Cox says.

Now, because of its technology investments and its commitment to service, Polaris is able to make real-time, optimal decisions that help its clients improve their own performance. This digitalization has allowed Polaris to better understand their capacity and take advantage of dynamic pricing, as well as real-time package tracking minute-by-minute.

“The information we have now is the equivalent of driving a car,” Cox says. “High performance, speed, and shifting gears. It’s mind-boggling the information that we have and what we can do with it to help our clients.”

TAYLORED SERVICES: CUSTOMIZING SOLUTIONS

For almost three decades, Taylored Services, LLC has provided warehouse, distribution, and fulfillment center services nationwide, as well as innovative solutions, including robotics, data integration, and analytics to its clients.

In December 2020, Taylored added to its capabilities with its acquisition of Toll’s Global Logistics Division, which is headquartered in Australia. Taylored picked up seven additional distribution sites, and expanded transload and transportation services.

Today, Taylored offers 4.1 million square feet of warehouse and distribution space, located strategically near ports on the East and West Coasts. The close



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proximity reduces the cost and time required to transport containers from the ports to a Taylored facility, says McCormack. In fact, most containers can make the move within 15 minutes, he adds.

The company's multiple locations allow it to provide its clients a range of transportation, transload, and distribution solutions. "We're able to customize a solution from the port to the consumer," says McCormack.

Many of Taylored's clients are mid-sized to larger organizations in the apparel, accessory, and footwear industries. "That's our sweet spot," McCormack says.

This specialization has enabled Taylored to develop expertise and solutions dedicated to the sector,

including a 99.99% fill rate and expertise in returns processing.

Taylored also has become an expert in meeting retailers' myriad compliance requirements. Whether a retailer requires notification 72 or 48 hours, or some other time frame, in advance of shipping, Taylored can handle it.

Similarly, if a retailer requires a specific pallet height, Taylored knows how to meet it. "We have the level of expertise, as well as relationships with the transportation organizations in each of these retailers, to be effective," McCormack says.

INNOVATION IS THE COMMON THREAD

As its clients' goods move, Taylored's information systems provide visibility to their location. "We're able to show our customer at a glance and at any time where their product is," McCormack says.

At the same time, clients who prefer self-service can use the online applications to see their orders' locations and estimated arrival times—all in real time.

While the shipping process typically includes many paper documents, Taylored's optical scanning solutions can upload to its portal multiple shipping documents, including bills of lading and manifests. This makes the information on these documents easy to find and quickly accessible to customers who need to, for instance, research a charge.

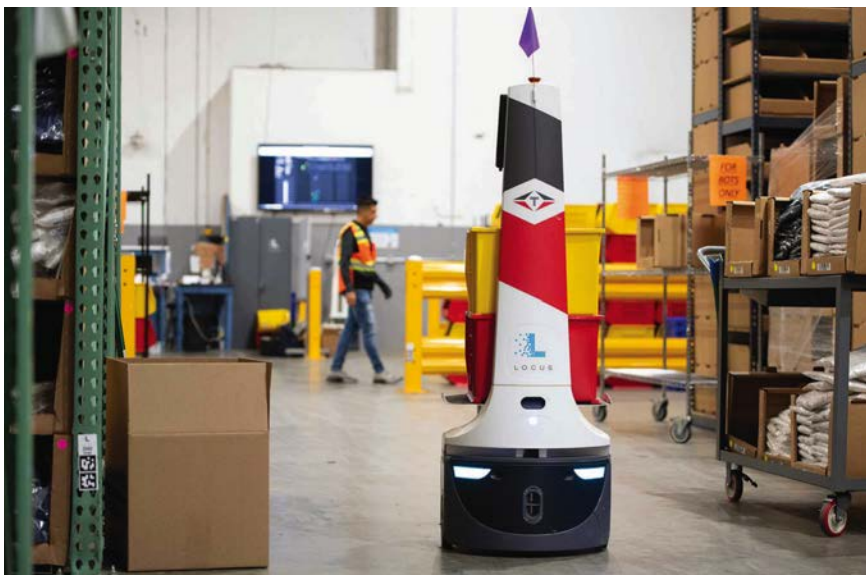
KEEPING PARTNERS IN THE LOOP

A strong relationship between a shipper and a 3PL can be fostered with six common-sense guidelines:

- 1) The relationships are "most definitely not set it and forget it,"** says Monk of Protiviti. "You have to actively manage them." In some cases, this role might be a full-time job for a shipper's employee.
- 2) Craft contracts with teeth.** Include measurable performance objectives and service level agreements.
- 3) Be proactive.** "Don't let performance degrade and then raise your hand six months later," Monk says. Alert your partner to problems before they escalate.
- 4) At the same time, understand the relationship cuts both ways.** Try to be a reliable customer. For instance, continually changing plans last minute makes it harder for a 3PL to help you.
- 5) To the extent possible, share plans and forecasts.** "The more notice a logistics provider has of, say, an expected sales uptick, the better they can respond," Monk says.
- 6) Develop a two-way relationship.** Both sides should employ an investment and growth mindset, rather than focus on short-term profits or costs.



Taylored Services provides warehouse, distribution, and fulfillment services, as well as advanced solutions, including robotics, data integration, and analytics.



Taylored's wholesale bulk services also encompass innovative technology. One example is the company's sorters and conveyance solutions that can pick up to about 80,000 units a shift.

They also can manage e-commerce and direct-to-consumer orders, using the fleets of autonomous mobile robots in which Taylored has invested. These AMRs can double the number of units picked per hour, when compared to a purely manual process.

Through its expertise, investment in leading technology, and focus on providing customized solutions, Taylored Services helps its clients operate more efficiently and effectively while meeting their own customers' needs. ■



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TRANSPORTATION STRATEGIES: WEATHERING THE STORM

WHILE WAITING FOR THE PANDEMIC TO BLOW OVER, SAVVY SHIPPERS DEVELOPED TRANSPORTATION STRATEGIES THAT ARE SUCCESSFUL NOW AND WILL PROTECT THEM IN TIMES OF FUTURE DISRUPTION, COME RAIN OR COME SHINE.

BY DEBRA N. PHILLIPS



Many shippers find that partnering with a core carrier like YRC Freight, a Yellow company, helps minimize freight costs and maximize customer service.



As shippers continue to navigate the challenges of a worldwide pandemic, many are finding that the strategies they used to deal with past supply chain disruptions are not the same ones needed to be successful in today's marketplace.

"Shippers have to become strategic in all aspects of managing their supply chains, including their approach to carrier relationships," says Gail Rutkowski, executive director of NASSTRAC, a shippers association for transportation and logistics professionals.

The past three years have been a roller coaster ride for shippers as they have operated in what Rutkowski refers to as "a carrier's market." In past periods of tight capacity, shippers developed relationships with key carriers while also looking at ways to create capacity—shifting modes, analyzing routes to reduce empty miles, and even adding private fleets or turning to dedicated contract carriage providers.

"WHILE TRANSPORTATION TECHNOLOGY IS IMPORTANT AND NECESSARY, YOU CANNOT PURCHASE A HIGH-VALUE ASSET—HUMAN BEINGS—THE SAME WAY YOU BUY STAPLERS."

*—Gail Rutkowski,
Executive Director, NASSTRAC*

The current market is a "perfect storm," notes Tom Nightingale, CEO of AFS Logistics. "Truckload capacity hasn't been this tight since 2018 or 2014. Still, the overall market is unique because the capacity tightness in the truckload sector is being mirrored in less-than-truckload (LTL), parcel, and ocean.

"We've never seen all four modes at a peak like this simultaneously," he adds.

With many consumers turning to e-commerce by both necessity and choice, industry analysts

predict continued growth in online shopping with no change for the foreseeable future.

At the other end of the supply chain, shippers face the realities of an issue that is affecting the entire globe, with varying degrees of severity and approaches to import and export trade.

"Port congestion and shutdowns continue to be a problem, delaying getting product on time," says Shana Rowlette, chief financial officer of Mann Lake, a manufacturer and distributor of beekeeping supplies.

"In our industry, when customers need certain products, they only need them for a small window," she says. "So if we don't provide it for them, they have to find it elsewhere."

Mann Lake serves both commercial beekeepers and hobbyists, and there are fewer schedules tighter than those dictated by nature. Failure to deliver products on time can result in lost sales and, in some instances, customers choosing other providers for their needs.

The pandemic is also impacting carriers in ways beyond their ability to meet customer needs, by limiting access to the equipment for their operations. "We ordered 10 trucks that were expected to be delivered between March and April 2021," notes a large Dallas-based products distributor. "We have been advised that the vendors that supply the components in the manufacturing process are so backlogged in their supply chains, we will not take delivery until the end of October."

Beyond potentially lost sales and delays in receiving equipment needed for operations, shippers are also being impacted financially. Budgeting for freight across all modes is more challenging than in the past, especially regarding offshore sourcing.

"The ocean market is going through turmoil never seen before," says Rutkowski. While no one can comment with any certainty about what may happen, she says, shippers' budgets have exploded as rates in some lanes have increased 100% and capacity is still not guaranteed.

The one comment that carriers, third-party logistics (3PL) providers, and shippers of all sizes agree on is there is no way to predict when and how conditions will improve.



The pandemic prompted beekeeping supplies company Mann Lake to focus on planning and inventory management to meet a hive of online order activity.

“The bottom line: these challenges are not going away anytime soon,” says the Dallas distributor.

History has proven that out of chaos often comes opportunity. As shippers continue to operate in today’s environment, many have developed strategies to be successful, even in turbulent times.

Shippers of varying sizes, serving a broad range of vertical industries, share the following best practices:

Establish alternative plans to better prepare for future disruptions. Many shippers are developing Plan B scenarios in their supply chains, finding alternate suppliers in different geographies when current vendors are “in a situation where they are not able to get a truck to domestically ship product to us,” says Rowlette.

For international shipments, “we are looking at stocking more product in-house or at the vendor to have it more readily accessible in case there is another disruption,” she adds.

Mann Lake is focused on better planning and analysis to maximize what freight it can put on a truck/container, which reduces shipping costs as well as labor touches.

This strategy is driven largely by the continued prevalence of e-commerce and consumer expectations of visibility and service.

“Customers are ordering more online and expecting delivery confirmations in 24 to 48 hours,” Rowlette says. “This means we need to be prepared with our inventory to keep customer service high.”

Build and strengthen partnerships with a variety of partners. Many provider relationships go beyond transactional. For example, some 3PLs function as advisors about supply chain management and the technologies needed for strategic planning and analysis.

Mann Lake has chosen to strengthen its supply chain and requires a wide range of technology solutions, all working together seamlessly. However, the company is not alone in its quest to find not just the best solutions, but also the best ones for its supply chain.



Turmoil in the ocean market has exploded some shippers' budgets as rates in some lanes have increased 100% and capacity is still not guaranteed.

“We have an enterprise resource planning system for purchasing products and a transportation management system for outbound and inbound LTL shipments,” Rowlette says. “But beyond that, we rely on our shipping partners, including AFS Logistics, to help us with visibility.”

Mann Lake also relies on AFS to find the best carriers to match its network needs. “We have relationships with tens of thousands of carriers as well as the supply chain technology and expertise to minimize price increases while still maintaining service,” says Nightingale.

Whether working with a 3PL or directly with carriers, shippers agree that communication is critical. It is also good to have solid relationships in place well before a crisis of any kind occurs.

One shipper notes that his company has worked closely with a core carrier, Yellow, for years to approach pricing and service in a way that “exemplified true partnership and passion.”

Having worked as a carrier for 25 years, this shipper makes it a point to understand issues impacting the industry, including driver shortages, mandates for operational changes including the

requirement for electronic logging devices and other regulatory challenges.

Not only does he understand these issues, but he regularly communicates these realities with company leadership. Before, during, and beyond COVID-19 conditions, he recommends that shippers “keep everyone engaged—communicate, communicate, communicate.” This philosophy applies to the shipper’s employees and those who work for carrier partners.

While there is agreement across the industry that strong partner relationships are critical, cultivating them has become more challenging due to COVID-19. “The pandemic highlighted how difficult it is to develop and maintain relationships without face-to-face conversations,” Rutkowski says.

COVID-19 exacerbated the issue, “but we have been seeing this for years—more and more transportation professionals attempting to run their entire network from their laptops,” she says. “While transportation technology is important and necessary, it becomes

“WE’VE NEVER SEEN ALL FOUR MODES—TRUCKLOAD, LTL, PARCEL, OCEAN—AT A CAPACITY PEAK LIKE THIS SIMULTANEOUSLY.”

*—Tom Nightingale,
CEO, AFS Logistics*

clear that you cannot purchase a high-value asset—human beings—the same way you buy staplers.”

Analyze the entire supply chain to find opportunities. Mann Lake is looking beyond immediate challenges to find ways to improve all aspects of its supply chain, including questioning past practices and thinking.

One example has to do with product distribution. Today, the company operates with a centralized supply chain; all products flow to one distribution center for processing before being sent

WHO MOVES THE FREIGHT?

Shippers, carriers, and 3PL providers all can share many “lessons learned” from operating during a global pandemic. However, one of the most essential lessons is also one of the most fundamental—understanding the value of those working on the front lines, from warehouse associates to truck drivers, to keep the supply chain flowing.

“We have learned how truly resilient our teammates are,” says Tom Nightingale, CEO of AFS Logistics. “We responded quickly, leveraged a range of tools, and have not missed a beat.”

That is the same story being told across the industry and an excellent reminder of one basic fact: “People, not equipment, move freight,” says Jason Bergan, chief commercial officer of Yellow.



to regional distribution centers for final shipping to dealers, stores, or customers.

“We are looking at changing our inbound strategy,” says Rowlette. She acknowledges that it may be more economical from a freight spend perspective to bring fewer shipments into one location.

“But when you look at the staff needed to unload the product, receive it into our system, and then prepare it to go to another warehouse, paying a little more to ship products directly to all warehouses, with freight being processed only once, becomes a better solution,” she adds.

Mann Lake is not only evaluating its supply chain internally, it has also brought in third-party resources to help do a complete analysis and re-map its processes.

The value of a third-party logistics provider in leveraging not only relationships but also data and critical insights is a primary reason that “the shippers who will be most successful will seek out non-asset-based 3PLs to assist in a holistic review of their supply chains,” Nightingale says.

Similarly, shippers are working with LTL carriers like Yellow to find ways to meet customer needs through transparency and collaboration.

“Obviously, COVID-19 was not on anyone’s radar,” comments one shipper. “But a constant dialog with core carriers and a genuine understanding of the issues they face has helped us forge ahead with our routine shipments and even assist many of the personal protective equipment providers that have emerged.” ■

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podcast



Krenar Komoni



Mathew Elenjickal

How the Open Visibility Network Expands Data Collaboration

GUESTS: Krenar Komoni, CEO & Founder, Tive; Mathew Elenjickal, CEO & Founder, FourKites

bit.ly/TiveAPR21Pod

What if you had the ability to collect critical data from multiple platforms and share it with all stakeholders involved? This collaborative approach to supply chain visibility is the goal of the Open Visibility Network, created by Tive. Listen in as Krenar Komoni of Tive and Mathew Elenjickal of FourKites discuss the benefits of this network.



[IN FOCUS]

INBRIEF

New Services and Solutions

> TECHNOLOGY

> Shippers with a network of brokers and freight forwarders can benefit from **BluJay Solutions'** new Augmented Global Trade platform, which streamlines workflow and accelerates efficiency for international trade operations. The multi-tenant SaaS platform automates end-to-end customs and compliance requirements.

> **IFCO Systems**, a provider of reusable plastic containers (RPCs) for fresh food packaging, added track-and-trace technology to its RPCs. Partnering with **Real Time Intel**, IFCO uses embedded RFID technology and barcodes on IFCO RPCs across North America to help customers move food more quickly and efficiently, reduce waste, increase sustainability, and

> The **CMA CGM Group** chose **ECS Group** to market its new air cargo division. CMA CGM Air Cargo operated its first full-freight flight on March 13, 2021, between Liège in Belgium and Chicago. The carrier plans to soon announce additional destinations in the United States.



allow quicker collection and processing of each RPC.

> WMS provider **3PL Central** launched its enhanced Small Parcel Suite to support high-volume e-commerce and omnichannel fulfillment. Built within 3PL Warehouse Manager WMS, the new Small Parcel Suite helps warehouses consolidate packages for shipment and process high-volume

batches by printing up to 1,000 shipping labels per batch for small parcel fulfillment.

> To help supply chain stakeholders predict disruptions before they happen, supply chain software companies **Longbow Advantage** and **AutoScheduler.AI** integrated their solutions. AutoScheduler's AI solution complements

Rebus, the real-time supply chain visibility platform built by Longbow, by leveraging harmonized data to avoid disruptions to on-time fulfillment caused by labor, docking, and inventory bottlenecks.

> **Honeywell** introduced a suite of enhanced supply chain software systems, which offer real-time supply chain visibility, data analytics, and communication tools. The software can be installed on Honeywell mobile computers and works with FarEye, a low-code SaaS platform.

> Shippers can gain visibility into inbound prepaid shipments with **project44** Supplier Visibility. The software links real-time information about inbound prepaid shipments from



> The PDL Series Loading Dock Scissor lift from **Presto ECOA** allows users to quickly and safely transfer loads from a variety of truck bed heights to loading docks. Because the lift platform is always level, transferring between truck beds and docks is easier and safer than ramps or other incline devices.



> The new Hoist PV-Series pneumatic tire forklift from **Toyota Material Handling Heavy Duty Division** has a capacity ranging from 22,000 to 30,000 pounds. The PV is engineered to perform heavy-duty materials handling tasks and is designed for companies in the lumber, steel, and automotive industries.

suppliers with orders and inventory coming into the network to help shippers better manage inventory levels and carrying costs.

> Digital freight technology company **Loadsmart** introduced dynamic pricing and instant booking via API integration for flatbed, simplifying freight booking for a traditionally challenging equipment type. Shippers that require flatbed gain access to guaranteed capacity and real-time tracking.

> **Data Gumbo**, the provider of GumboNet, a blockchain-based industrial smart contract network, launched GumboNet ESG, the automated sustainability measurement solution that ties a company's operational data to environmental,

social, and governance (ESG) standards reporting. The tool measures not only a company's sustainability data but also its tier 2 and 3 suppliers to monitor supply chain sustainability.

> **Roger**, a technology solution for the dry bulk freight industry, opened its ecosystem to give all dry bulk truck shippers and carriers access to its suite of products. Roger offers efficiency-focused features such as integrated payment submission and hyper-accurate GPS load tracking.

> Warehouse operations can now integrate data generated from a variety of loading dock event data points with 4SIGHT Connect Data from **4SIGHT Logistics Solution**. With the new tool, users can generate custom

reports and dashboards, as well as KPIs and metrics.

> **Nuvocargo**, a digital platform for U.S./Mexico trade, added tracking features available in English and Spanish that provide shippers with enhanced visibility and the ability to monitor cargo shipments.

>TRANSPORTATION

> **OOCL** introduced a China Indonesia Service with port calls to Qingdao and Port Kelang. The CIS port rotation includes Shanghai, Ningbo, Da Chan Bay, Jakarta, and Surabaya.

> **Dachser USA**, a subsidiary of Dachser, launched an LCL service that offers direct ocean freight from China to the United States. The

new service provides two routes: the Port of Yantian/Shenzhen to the Port of Los Angeles and the Ports of Xiamen, Ningbo, and Shanghai to the Port of Long Beach.

> **DSV** expanded its airfreight capacity by introducing three intercontinental air charter routes: a weekly direct route from Luxembourg to Guarulhos (São Paulo) with 100 tons of capacity between Europe and Brazil; four weekly direct rotations with a combined 150 tons of capacity connecting Europe and South Africa; and a weekly connection from Shanghai to Chicago's Rockford Airport, with 100 tons of capacity in each direction.



> **Maersk North America** will offer a service linking ports in Vietnam and China with the U.S. East Coast via the Panama Canal, starting in May 2021. The TP23 string will include eight Maersk vessels and two from ZIM. U.S. calls will include Savannah, Charleston, and Newark.

>PRODUCTS

> The PalletPal Walkie from **Southworth Products** is an automatic pallet load leveler that mounts onto pallet trucks to make order picking faster and safer. It uses a calibrated spring mechanism to automatically adjust the height of a pallet load as boxes are added or removed, with the top layer of the load at a comfortable working height for employees to load or offload items.

> **Rapid Aid**, which makes hot and cold therapy products and temperature-controlled solutions, established a new business unit to help companies maintain the temperature stability of their products while in shipment or storage. The new division, called TempAid, offers gel packs, phase change materials, and insulated coolers.

> **DHL's** new bulk liquid transporter solution, a system of Flexitanks called DHL Reefertanks, can transport bulk liquids like

> **Saddle Creek Logistics Services** is set to open a 544,320-square-foot e-commerce fulfillment distribution center in Walton, Kentucky, in summer 2021. Designed for e-commerce fulfillment with high ceilings and 110 dock doors, the facility is located near the intersection of Interstates 71 and 75 as well as a major parcel hub.



citrus juice, which require temperature control while in transit. The three-tank system leaves less residue or heel in the tanks, which means less product loss.

> **Mallard Manufacturing**, which makes gravity flow storage products, introduced a wireless control pneumatic pallet separator and Ergo Cell lift table. The pneumatic separator holds back rear pallets in a pallet flow lane so that order pickers can safely pick cases from the front pallet. The lift table creates an ideal pick height, limiting the range of motion stresses for workers.

> Temperature-controlled packaging provider **Pelican BioThermal** expanded its dry ice shipper options for cell and gene therapy shipments as well as pandemic payloads. The expanded range of dry ice parcels can replace liquid nitrogen systems on short journeys that include a courier.

> **Toshiba's** BV400D series of direct thermal transfer printers provides fast and crisp labeling for producing shipping, shelving, and asset tags at speeds up to 7 inches per second with clarity up to 300 dots per inch. Toshiba's compact label makers accommodate

varied space requirements for logistics, healthcare, and retail labeling applications.

>SERVICES

> **Lineage Logistics** added cold storage capacity for importers and exporters by expanding its North Charleston, South Carolina, facility, located close to the Port of Charleston. The facility expansion adds more than 18,000 pallet positions, bringing its total to nearly 38,000 pallet positions.

> **Woodland Group** opened a new fulfillment and distribution facility in Doncaster, UK. The 195,000-square-foot facility is located at iPort, an advanced multimodal logistics hub.

> **Odyssey Logistics & Technology Corporation** launched an operation in Laredo, Texas—a major truck crossing point between the United States and Mexico. Odyssey's Laredo site will serve as a bonded container



> The new PowerLINE Series 55 generators from **Carrier Transicold** provide an uninterrupted electrical source for refrigerated containers and are designed to comply with European Union Stage V standards for diesel engines, offering greater sustainability.

The two-speed controller automatically switches based on conditions corresponding to refrigeration system load and requires no user interaction.

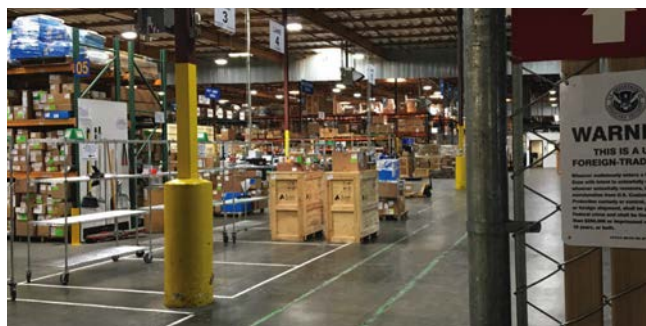
freight station, a hub for customs transactions, and a warehouse to hold goods that haven't cleared customs on the U.S. side.

> Transport management technology vendor **3T Logistics and Technology Group** introduced a customs clearance service to support UK exporters and importers. Aiming to minimize border customs delays, the new service offers customs clearance expertise and generates auditable and reportable data to ease documentation burdens.

> **ClearMetal** partnered with insurance provider **Munich Re Group** to guarantee

international ocean freight shippers complete and timely delivery of data on ocean container movements during transit. ClearMetal guarantees that after the first year of engagement, it will offer completeness of data for container shipments at least 90% of the time.

> **East Coast Warehouse & Distribution** leased 500,000 square feet of new warehouse space at the Port of Savannah. It will offer temperature-controlled warehousing, container drayage, local and regional trucking, and national freight brokerage services at the port, expecting to open its doors on Aug. 1, 2021.



> **RK Logistics Group**, a provider of warehousing, e-commerce fulfillment, and supply chain management services, expanded its operations in the Silicon Valley with the opening of two facilities in Newark, California. Its new Morton Avenue warehouse is now the primary location for its e-commerce and retail fulfillment operations, which manage inventories, and pull, pack, and ship online orders for multiple retail products businesses.



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CALENDAR

Logistics Events 2021

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



**MAY
3-5,
2021**

WERC DX

bit.ly/WERC DX2021

In this virtual conference, thought leaders and innovators address current problems facing distribution logistics professionals, such as labor challenges, technology changes, sustainability, e-commerce, and the demand for a fully integrated customer experience.

VIRTUAL

MAY 11-13, 2021

American Supply Chain Summit

supplychainus.com

Join senior-level executives to hear thought-provoking case studies, learn key implementable ideas, access live sessions, and participate in real-time chats. Select which sessions to stream and get access to all presentations. Download materials to store in your "digital briefcase," and stroll the virtual exhibit hall to find key services to enhance your operations.

MAY 18-21, 2021

Container Terminal Automation Conference

ctac.events

This year's event hosts debates on the state of the port

terminals sector, featuring C-level leaders from the industry. Learn about the state of the sector, emerging technologies, big data, and automation in brownfield terminals.

JUN 8-10, 2021

GS1 Connect: Digital Edition

gs1connect.gs1us.org

Live-streamed and on-demand digital content focuses on adapting to supply chain and e-commerce challenges, featuring tracks focused on healthcare, grocery, retail, and technology. Industry leaders share success stories leveraging GS1 standards and how to solve specific challenges. The expanded program features a pitch competition, discussion groups, and virtual classroom.

JUN 17, 2021

IGD Supply Chain Summit

bit.ly/IDGSummit

More than ever, supply chains determine who wins in food and grocery. Interact with peers and explore how supply chains are developing new capabilities to better serve customers and drive growth. Hear first-hand accounts of success, how the online opportunity is being addressed, the push to a more contactless environment, and more.

IN PERSON

**JUNE 6-8, 2021
ST. LOUIS, MO**

TCA Safety & Security Meeting

bit.ly/TruckloadEvent

The Truckload Carriers Association brings together trucking safety professionals to discuss challenges, share ideas, and seek solutions to make businesses and roads safer. Special sessions draw from the knowledge of attendees to solve common safety management and human-resource problems. Topics include workers' compensation, employee/employer communication, improving hiring procedures, and more.

**JULY 16-17, 2021
WAYNE, IN**

Expedite Expo

expediteexpo.com

Learn about the latest expedited trucking industry news, equipment, career opportunities, and products geared toward owner-operators and drivers of medium-duty and heavy-duty trucks. Attend workshops packed with advice on how to spec a truck, choose the right carrier, reduce costs, improve profits, and save time. There's something for every type of industry professional, including drivers, fleet owners, owner-operators, beginners, and chief executive officers.

**AUG 17-20, 2021
ORLANDO, FL**

Link: The Retail Supply Chain Conference

bit.ly/LinkConference

This conference gathers top executives in the retail supply chain to network and learn. The forum addresses retail supply chain challenges with breakout and roundtable sessions, industry executive general sessions, executive insights, and a product/services expo experience, so attendees can take back fresh ideas and best practices to their company.



CALENDAR

SEPT 13-17, 2021
LONDON, ENGLAND

London International Shipping Week

bit.ly/LondonShipping

This global shipping and maritime event offers sessions and networking opportunities for leaders in all sectors. Government and shipping leaders explore how the industry can balance recovery with new pressures and opportunities. The key drivers of trade, finance, technology, and people are highlighted, backed by the principles of environment, social responsibility, and governance.

SEPT 19-22, 2021
ATLANTA, GA

CSCMP Edge

bit.ly/CSCMPEdge

The Council of Supply Chain Management Professionals conference supports the supply

chain management community by fostering relationships and building up careers through education, professional development, and networking opportunities. Curate your own agenda with 22 dedicated tracks and more than 120 sessions spanning the end-to-end supply chain.

SEPT 25-28, 2021
LAS VEGAS, NV

Truckload 2021

truckload2021.com

Attend truckload-specific educational sessions with industry experts, insightful panel discussions, and engaging keynotes. Take advantage of dozens of unique networking opportunities with trucking's most engaged leaders as well as dedicated exhibit hours to learn about the latest products and technology for your fleet.



SEPT 28-30, 2021
LAS VEGAS, NV

RLA Conference and Expo

rla.org/event/125

This Reverse Logistics Association event focuses on all activity associated with a product or service after the point of sale. Join industry thought leaders who discuss how to navigate the demanding world of reverse logistics, especially during these challenging times. Take part in powerful keynotes, content-driven panel discussions, and an ample number of networking opportunities.

OCT 26-28, 2021
MIAMI, FL

Air Cargo Americas

bit.ly/AirCargoEvent

Air Cargo Americas brings together executives from all sectors of aviation and logistics to exchange views and experiences that help enhance the growth of the cargo industry. Topics covered include security, regional consolidation, manufacturer and shipper needs in high-growth cargo, trade facilitation, improving productivity, service quality, responding to evolving market changes, and controlling costs while streamlining customer service.

These events were scheduled to proceed as of press time.



WORLD TRADE WEEK SOUTHERN CALIFORNIA

GLOBAL TRADE

THE ROAD TO ECONOMIC RECOVERY

Join the largest celebration of global trade in the nation to hear from an expert panel on the **Future of Transportation and Supply Chains** - a conversation about innovative solutions to increase the region's global competitiveness during recovery.

Thursday, May 6 | 8:30 a.m. – Noon

EXPERT SPEAKERS | INDUSTRY AWARDS | NETWORKING

www.worldtradeweek.com

This handy directory of **logistics, transportation, and supply chain websites** provides an easy and efficient way to surf relevant sites without dealing with search engine overload.

View **Web_Cite City** online at [BIT.LY/IL_WCC](https://bit.ly/IL_WCC):

- ▶ **New search capabilities** enable you to find specific companies by company name, or you can search using keywords such as “LTL” or “Warehousing.”
- ▶ **Preview sites quickly** — don’t waste time visiting sites that don’t fit your needs.
- ▶ **Save time** — all URLs and images are live links.

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3PL

3PL

**HANOVER LOGISTICS • www.hanoverlogistics.com**

Hanover Logistics is an asset-based logistics services company providing customers superior supply chain management solutions in a variety of third-party logistics (3PL) disciplines, including warehousing, distribution, fulfillment, and transportation services. Hanover Logistics is equipped to expertly handle various types of logistics services, including: freight brokerage, food/grocery storage and distribution, intermodal/cross-dock services, warehousing solutions for a variety of products (AIB certified, food grade), and general transportation management including truckload, LTL, and container hauling services.

KANBAN LOGISTICS • www.kanbanlogistics.com

Kanban Logistics is an ISO-certified 3PL with 7 distribution centers in Eastern North Carolina, minutes from I-95, that allow for 1-day distribution to 70% of the U.S. population. We offer competitive costs and flexible agreement options, and our 1 million square feet of warehouse space includes temperature-controlled, food-grade storage.

**METRO PARK WAREHOUSES • www.mpwus.com**

Metro Park Warehouses is a full-service 3PL offering 2 million square feet in Kansas City of modern food-grade warehousing space, including air-conditioned and medical temperature-controlled space with licensed beverage and med/vet/pharma distribution, AIB Superior rating, and 5 rail facilities, all open to reciprocal switching. We also provide in-house local & regional trucking transportation and value-added services such as retail store displays, kitting, labeling and light assembly. Contact Metro Park to gain the competitive edge.

POLARIS TRANSPORTATION GROUP • www.polaristransport.com

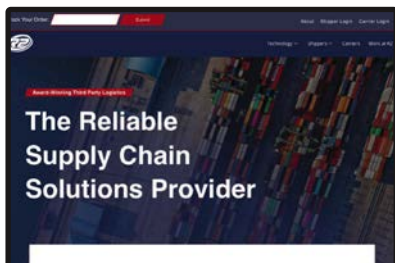
Polaris Transportation Group is best known for scheduled LTL service between Canada and the United States. Polaris specializes in the shipment of dry goods. But it also has developed complementary transportation services including: specialized movement of trade show displays and exhibits, third-party cross-border and domestic freight management, cross-border and domestic intermodal service, expedited ground and air service, and global air and ocean freight forwarding.



IN THIS SECTION:

3PL - Bulk: Liquid-Dry

3PL



R2 LOGISTICS • www.r2logistics.com

Founded in 2007, R2 Logistics is a national provider of transportation services and logistics solutions. As a third-party logistics (3PL) company, we provide access to thousands of contracted transportation providers. With offices located across the United States, we are able to provide your company with any possible over-the-road shipping need nationwide, including Mexico and Canada. Backed by game-changing technology and our culture for Reliable Service and Relentless Passion, we've built a strong reputation as an industry leader.

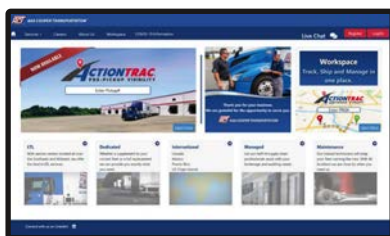
BARCODE/ RFID

CDM SOFTWARE SOLUTIONS, INC. • s-c-technology.com

CDM Web Freight is a true global web-based freight forwarding and NVOCC solution. Key benefits include CDM Shipment Flow where export shipment data—documents, compliance details, tracking—from an origin forwarder easily transfers to an import shipment of the destination forwarder. Other benefits—in multiple languages (English, Japanese, Simplified Chinese, Spanish, French and German)—include shipment compliance for US, Canada, EU, UK, Japan, Israel and South Africa; as well as air and ocean carrier integration. CDM Web Freight also includes cutting-edge technologies such as RFID, IoT, and Blockchain to further enhance the product offering.



BULK: LIQUID-DRY



AAA COOPER TRANSPORTATION • www.aaacooper.com

AAA Cooper Transportation has been providing safe and efficient transportation solutions for more than 65 years. With 70-plus strategically located service centers, we give individual attention to your transportation needs. Services include Less-than-Truckload, Dedicated Contract Carriage, Managed Services, International, and Fleet Maintenance. AAA Cooper Transportation is committed to the long-term sustainability of the environment. It continues to implement processes that will make the world a better place to live for generations to come. Visit our website to learn more.

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.



IN THIS SECTION:

Cartonization/Palletization Software - Cold Chain Logistics

CARTONIZATION/ PALLETIZATION SOFTWARE

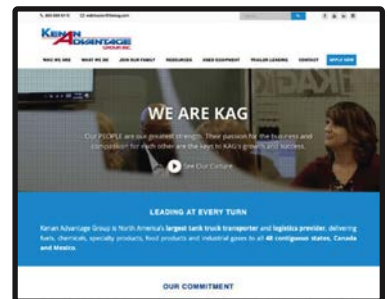
MAGICLOGIC OPTIMIZATION • www.magiclogic.com

MagicLogic provides complete Load Planning solutions using advanced algorithms developed in-house. Our software is capable of handling the most complex requirements, including mixed-mode Load Planning, mixed case Palletization software for packstations and robots, and high-speed Cartonization. Industry-standard APIs ensure our software is adaptable and fast to integrate. Comprehensive loading and stacking rules are modeled with ease. Solutions are available on-premise or the cloud.

CHEMICAL LOGISTICS

KAG LOGISTICS • www.thekag.com

KAG Logistics provides transportation management, capacity solutions, and a variety of logistics services across North America—all tailored to meet your unique needs. Our experienced logistics team is here for you 24/7/365, with our extensive carrier network, proven processes, industry-leading technology, and analytics to support your supply chain initiatives while driving value into your business. Serving the fuels, chemicals, specialty products, food, and merchant gas industries, we deliver on-time, error-free results—guaranteed.

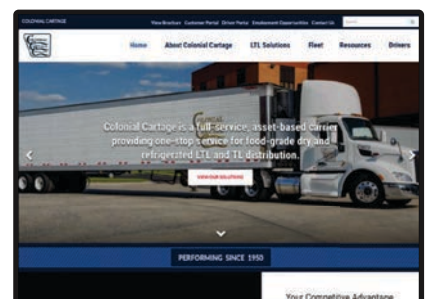
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COLD CHAIN LOGISTICS

COLONIAL CARTAGE CORPORATION • www.colonialcartage.com

Colonial Cartage Corporation, the in-house carrier for Atlanta Bonded Warehouse, is a full-service asset-based carrier providing food-grade, dry and refrigerated TL, LTL, and pool distribution services for over 64 years. Colonial provides weekly scheduled temperature-controlled LTL delivery to all points in the Southeast, Midwest, Southwest, and Great Plains, as well as truckload and plant support services throughout its service area from its Atlanta terminal. Colonial's services include cross dock, consolidated order selection (bulk picking), and inbound consolidation to outbound cross-dock.



IN THIS SECTION:

Courier Services - Distribution Center Management

COURIER SERVICES



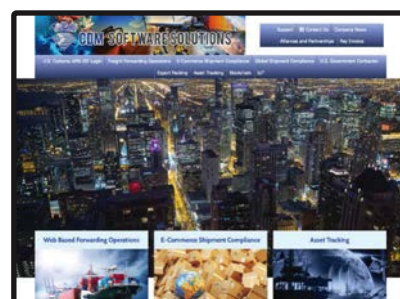
GoFor • www.gofordelivers.com

GoFor delivers small to big and bulky, locally within three hours. Our Express, Same-Day or Scheduled on-demand service helps North American businesses of all sizes get their products into the hands of customers fast.

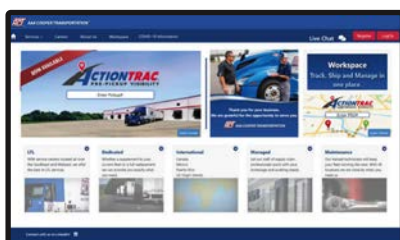
CUSTOMS COMPLIANCE/DUTY DRAWBACK

CDM SOFTWARE SOLUTIONS, INC. • s-c-technology.com

CDM Web Freight is a true global web-based freight forwarding and NVOCC solution. Key benefits include CDM Shipment Flow where export shipment data—documents, compliance details, tracking—from an origin forwarder easily transfers to an import shipment of the destination forwarder. Other benefits—in multiple languages (English, Japanese, Simplified Chinese, Spanish, French and German)—include shipment compliance for US, Canada, EU, UK, Japan, Israel and South Africa; as well as air and ocean carrier integration. CDM Web Freight also includes cutting-edge technologies such as RFID, IoT, and Blockchain to further enhance the product offering.



DEDICATED CONTRACT CARRIAGE



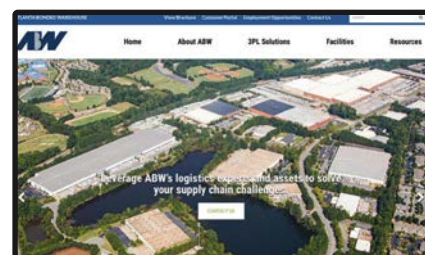
AAA COOPER TRANSPORTATION • www.aaacooper.com

AAA Cooper Transportation has been providing safe and efficient transportation solutions for more than 65 years. With 70 plus strategically located service centers, we give individual attention to your transportation needs. Services include Less-than-Truckload, Dedicated Contract Carriage, Managed Services, International, and Fleet Maintenance. AAA Cooper Transportation is committed to the long-term sustainability of the environment. It continues to implement processes that will make the world a better place to live for generations to come. Visit our website to learn more.

DISTRIBUTION CENTER MANAGEMENT

ATLANTA BONDED WAREHOUSE • www.atlantabonded.com

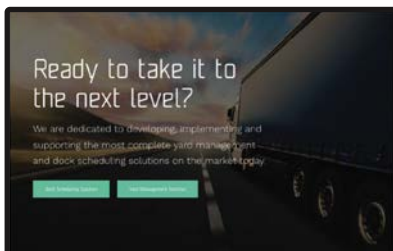
Atlanta Bonded Warehouse (ABW) has been providing public and contract food-grade, temperature controlled distribution services for 70 years. ABW is a leader in providing integrated asset-based logistics solutions for the food, pharmaceutical, household durables, and CPG industries. Our goal is total customer satisfaction through continuous innovation in technology and in best practices by focusing on teamwork, integrity, and accountability, all in a safe working environment.



IN THIS SECTION:

Dock Appointment Scheduling - Expedited Ground

DOCK APPOINTMENT SCHEDULING

**C3 SOLUTIONS • www.c3solutions.com**

C3 Solutions is an information technology company specialized in yard management (YMS) and dock scheduling (DSS) systems. Since its founding in 2000, C3 has gained the confidence of clients around the world and across many industries including retail, grocery, distribution, manufacturing and parcel post. Headquartered in Montreal (QC), Canada and privately owned, C3 is dedicated to developing, implementing and supporting the most complete yard management and dock scheduling products on the market today. For more information on C3's products, schedule a free online demonstration.

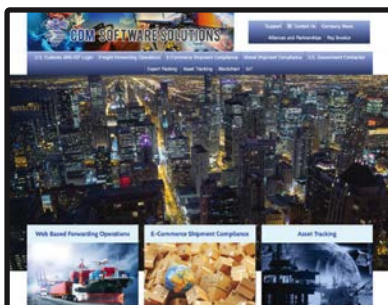
E-COMMERCE

NORTH AMERICAN ECOMMERCE SOLUTIONS • www.naecsol.com

If you do e-commerce imports, you need North American ECommerce Solutions (NAEC SOL) on your team. NAEC SOL specializes in Section 321/De Minimis import solutions and can help clear your goods through Customs quickly and easily. Choose from a menu of import services, including consolidation software and end-mile delivery service integration. NAEC SOL is a Manifest submissions ACE CBP certified Air Manifest service provider and US Customs Sec 321 participation consultant. Get started today by visiting www.naecsol.com.



E-COMMERCE CUSTOMS COMPLIANCE

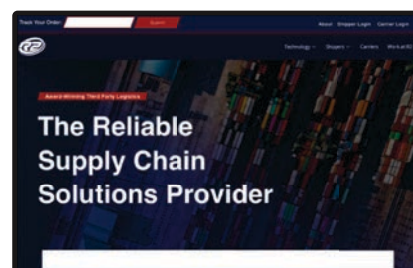
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EXPEDITED GROUND

R2 LOGISTICS • www.r2logistics.com

Founded in 2007, R2 Logistics is a national provider of transportation services and logistics solutions. As a third-party logistics (3PL) company, we provide access to thousands of contracted transportation providers. With offices located across the United States, we are able to provide your company with any possible over-the-road shipping need nationwide, including Mexico and Canada. Backed by game-changing technology and our culture for Reliable Service and Relentless Passion, we've built a strong reputation as an industry leader.



IN THIS SECTION:

Food Logistics - Freight Payment/ Audit Services

FOOD LOGISTICS

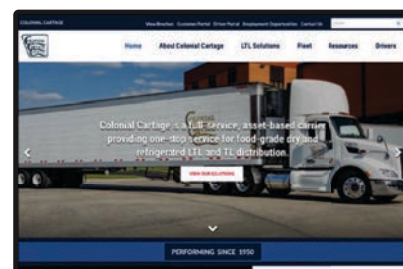


ATLANTA BONDED WAREHOUSE • www.atlantabonded.com

Atlanta Bonded Warehouse (ABW) has been providing public and contract food-grade, temperature controlled distribution services for 70 years. ABW is a leader in providing integrated asset-based logistics solutions for the food, pharmaceutical, household durables, and CPG industries. Our goal is total customer satisfaction through continuous innovation in technology and in best practices by focusing on teamwork, integrity, and accountability, all in a safe working environment.

COLONIAL CARTAGE CORPORATION • www.colonialcartage.com

Colonial Cartage Corporation, the in-house carrier for Atlanta Bonded Warehouse, is a full-service asset-based carrier providing food-grade, dry and refrigerated TL, LTL, and pool distribution services for over 64 years. Colonial provides weekly scheduled temperature-controlled LTL delivery to all points in the Southeast, Midwest, Southwest, and Great Plains, as well as truckload and plant support services throughout its service area from its Atlanta terminal. Colonial's services include cross dock, consolidated order selection (bulk picking), and inbound consolidation to outbound cross-dock.



FREIGHT FORWARDING



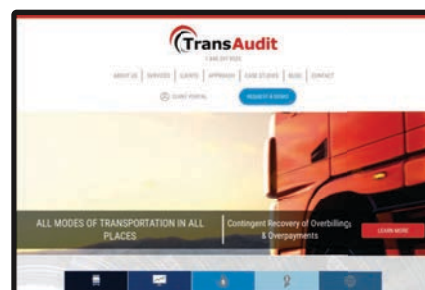
LYNDEN • www.lynden.com

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.

FREIGHT PAYMENT/ AUDIT SERVICES

TRANS AUDIT • www.transaudit.com

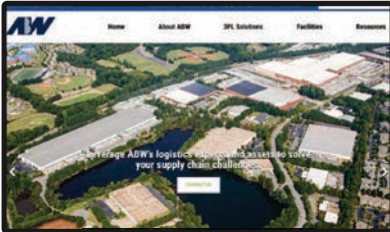
Trans Audit, the world's largest and most successful global transportation post payment audit specialist, has performed worldwide post payment transportation audits on a contingent basis for hundreds of Fortune and Global 1000 corporations. Trans Audit's transportation post payment audit services address all modes of global transportation and have delivered over \$1 billion of benefit to our clients' bottom line by recovering overbillings and overpayments, correcting erroneous billing, and reducing future expenses. With less than one hour invested a month, Trans Audit's services can regain tens of thousands of thousands or more.



IN THIS SECTION:

Fulfillment - Global Logistics

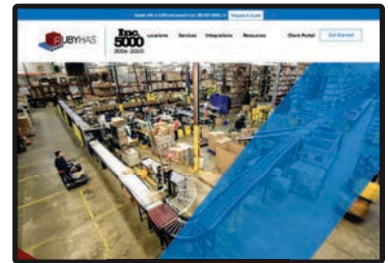
FULFILLMENT

ATLANTA BONDED WAREHOUSE • www.atlantabonded.com

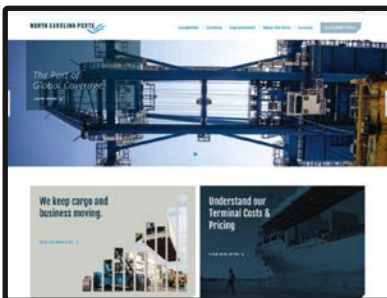
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RUBY HAS FULFILLMENT • rubyhas.com

Ruby Has Fulfillment is a rapidly growing e-commerce fulfillment provider with six state-of-the-art distribution centers in New York, California, Nevada, Kentucky, New Jersey and Ontario, Canada. They specialize in e-commerce fulfillment and logistics for direct-to-consumer brands, with a strong commitment to investing in automation, robotics, and technology to help e-commerce brands quickly scale. Visit rubyhas.com for more info.



FURNITURE TRANSPORT & LOGISTICS

NORTH CAROLINA STATE PORT AUTHORITY • www.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.

GLOBAL LOGISTICS

FLORIDA INTERNATIONAL UNIVERSITY • logistics.fiu.edu

Drive Innovation in Logistics! The Master of Science in Logistics and Supply Chain Management degree prepares students for careers in this demanded industry. The 10-month program features a unique three-part focus on logistics technology, data analytics, and distribution modeling. Graduates will gain technical knowledge, human interactive skills, and market knowledge from this STEM-designated program and become familiar with software that utilizes digital technology to analyze data available in the global marketplace. Please visit: logistics.fiu.edu



IN THIS SECTION:

Insurance - Logistics IT

INSURANCE



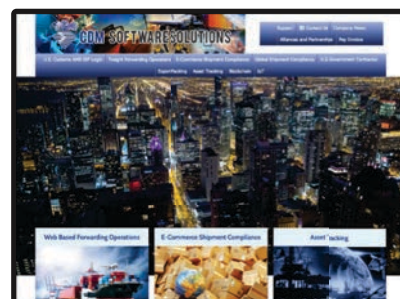
ROANOKE INSURANCE GROUP • www.roanokegroup.com

Roanoke Insurance Group Inc., a division of Munich Re Specialty Group North America, is a retail and wholesale broker representing several top-rated insurance carriers. It is also a Lloyd's of London cover holder for Munich Re Syndicate Limited and Managing General Underwriter for American Alternative Insurance Corporation. Roanoke focuses on various insurance, surety bond, ATA Carnet products and services for companies involved in transportation, logistics or shipping whether digital or traditional.

LOGISTICS IT

CDM SOFTWARE SOLUTIONS, INC. • s-c-technology.com

CDM Web Freight is a true global web-based freight forwarding and NVOCC solution. Key benefits include CDM Shipment Flow where export shipment data—documents, compliance details, tracking—from an origin forwarder easily transfers to an import shipment of the destination forwarder. Other benefits—in multiple languages (English, Japanese, Simplified Chinese, Spanish, French and German)—include shipment compliance for US, Canada, EU, UK, Japan, Israel and South Africa; as well as air and ocean carrier integration. CDM Web Freight also includes cutting-edge technologies such as RFID, IoT, and Blockchain to further enhance the product offering.



CLEARTRACK INFORMATION NETWORK • www.cleartrack.com

ClearTrack operates a global cloud-based business network and collaboration platform for supply chain management software enabling the global sourcing of goods, management of supplier and product compliance, logistics collaboration and visibility and the sourcing of ocean and domestic freight. ClearTrack's configurable software solutions and services connect over 26,000 suppliers, factories, service providers and shippers to improve the flow of goods, reduce costs and minimize risk every day. Contact us to learn how ClearTrack can help you transform the management of your multi-enterprise supply chain.

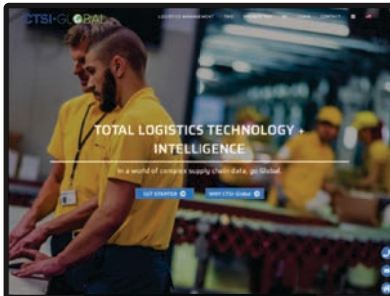
CT LOGISTICS • www.ctlogistics.com

Since 1923, organizations have leveraged CT Logistics to provide global freight audit and 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 9001:2008 certified processes. Services also include: Shipment Execution, Bid Management, Shipment Planning and Execution Software, and Professional Services for consulting and advising.



IN THIS SECTION:
Logistics IT

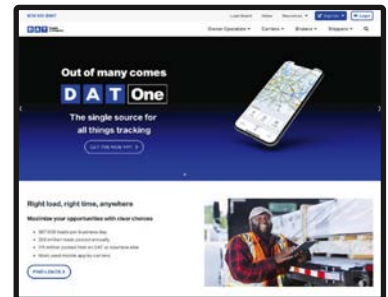
LOGISTICS IT

**CTSI-GLOBAL • www.ctsi-global.com**

Since 1957, CTSI-Global has developed industry-leading supply chain management expertise and technology. Shippers and 3PLs manage their global supply chains through CTSI-Global's transportation management system, business intelligence solutions, freight audit and payment, and consulting services. Partnering with one expert provider for all your logistics needs ensures seamless integration to eliminate redundant processes and costs while providing the visibility you need. CTSI-Global is your link to supply chain solutions.

DAT FREIGHT & ANALYTICS • 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.

**FORTIGO • www.fortigo.com**

Fortigo's team of experts specializes in logistics optimization and enterprise web-based software. For companies seeking to reduce costs, improve customer satisfaction, and increase profitability, Fortigo automates, optimizes, and audits logistics decisions. Fortigo plugs into established supply chain applications and provides rapid return on investment by optimizing and deploying closed-loop logistics processes, minimizing ship-to-order times and streamlining collaboration with logistics providers.

HIGHWAY 905 • www.highway905.com

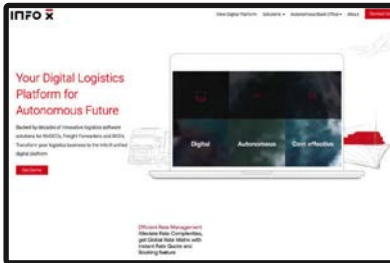
Over the past 25+ years, Highway 905's cloud based and highly customizable logistics IT solutions have been enabling seamless digital transformation of the end-to-end global logistics for businesses of all sizes from global enterprises to SMEs.

From smarter warehouses to optimized transportation to enhanced AI-powered shipment visibility at your fingertips, our technologies enable you to deliver the best customer experiences at reduced logistics costs. For digital solutions to your logistics challenges, connect with us at +1 908-874-4867 or visit: www.highway905.com.



IN THIS SECTION: Logistics IT

LOGISTICS IT

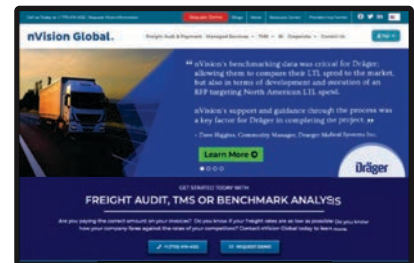


INFO-X • www.infoxusa.com

Since 2001, Info-X has been a premier provider of logistics management software and back-office support services for global transportation companies in the ocean, air and ground sectors. Info-X specializes in outsourced back-office services and is a quality-driven, professional, and experienced outsourcing partner. Leveraging its extensive industry knowledge of logistics, and understanding of the complexities involved, it helps companies improve efficiencies, get 99.9% accuracies, and experience cost reductions of up to 40%.

nVISION GLOBAL TECHNOLOGY SOLUTIONS • 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.



POLARIS TRANSPORTATION GROUP • www.polaristransport.com

Polaris Transportation Group is best known for scheduled LTL service between Canada and the United States. Polaris specializes in the shipment of dry goods. But it also has developed complementary transportation services including: specialized movement of trade show displays and exhibits, third-party cross-border and domestic freight management, cross-border and domestic intermodal service, expedited ground and air service, and global air and ocean freight forwarding.

RATELINX • www.ratelinx.com

RateLinx delivers all your logistics data in one cloud-based platform with accurate data, advanced analytics, and reports to power visibility across orders, tracking, and invoices. The PayLinx module uses AI-driven data quality to enable freight spend control and real-time visibility, eliminating exceptions, and rate tolerances. Improve decision making and carrier partnerships with PayLinx. Accelerate your supply chain and connect with other RateLinx modules to maximize your visibility and savings.



IN THIS SECTION:
Logistics IT - Ocean

LOGISTICS IT

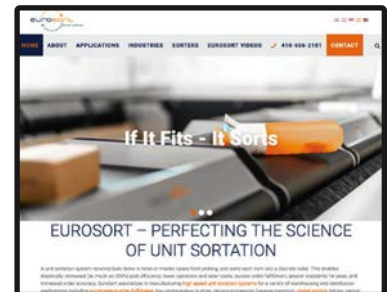
TRANSPORTGISTICS • www.transportgistics.com

TransportGistics is a global, multi-product and services provider of market leading, simple, incremental solutions for transportation management and logistics functions within the supply chain. Our cloud solutions enable our customers to source, procure, and execute transportation services; enable collaboration; reduce costs; improve processes; identify hidden costs of transportation; improve compliance; improve Supplier Relationship Management; monitor vendor performance; improve shipment visibility; generate automatic, status-driven alerts; and monitor carrier performance with respect to time in transit, service failure, and billing.

MATERIALS HANDLING

EUROSORT • eurosort.com

Eurosort is a recognized industry leader in state-of-the-art technology in Bomb Bay, Push Tray, Cross-Tray and Sweeper sorters. We design and manufacture high-speed unit sortation systems using simple, efficient, space-saving designs at a higher quality, a lower price, and a smaller footprint than other technology on the market. Our proven technology and effective partnerships allow us to remain one of the last independent sortation companies in the industry.



MULTI-MODAL

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.

OCEAN

COSCO SHIPPING LINES (NORTH AMERICA) INC. • www.cosco-usa.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:

Oil/Gas/Energy Logistics - Rapid Response Logistics

OIL/GAS/ENERGY LOGISTICS



CDM SOFTWARE SOLUTIONS, INC. • s-c-technology.com

CDM Web Freight is a true global web-based freight forwarding and NVOCC solution. Key benefits include CDM Shipment Flow where export shipment data—documents, compliance details, tracking—from an origin forwarder easily transfers to an import shipment of the destination forwarder. Other benefits—in multiple languages (English, Japanese, Simplified Chinese, Spanish, French and German)—include shipment compliance for US, Canada, EU, UK, Japan, Israel and South Africa; as well as air and ocean carrier integration. CDM Web Freight also includes cutting-edge technologies such as RFID, IoT, and Blockchain to further enhance the product offering.

PORTS

PORT OF LOS ANGELES • www.portoflosangeles.org

The Port of Los Angeles is the busiest container port in the United States, sustaining its rank as number one for over two decades with record volumes for containerized trade. An industry linchpin, the Port is an established leader of maintaining an efficient, sustainable supply chain, and a trailblazer in modernization and cybersecurity, taking a leadership role in adopting new technologies to improve the reliability, predictability, and efficiency of the flow of cargo across global seaborne trade. Both competitive and collaborative, the Port of Los Angeles serves as an economic bellwether and the premier international trade gateway of Southern California.



PROJECT LOGISTICS



LYNDEN • www.lynden.com

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RAPID RESPONSE LOGISTICS

LYNDEN • www.lynden.com

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IN THIS SECTION:

Real Estate - Reverse Logistics

REAL ESTATE



MERICLE COMMERCIAL REAL ESTATE SERVICES • www.mericlereadytogo.com

Mericle Commercial Real Estate Services has developed more bulk industrial space and fully prepared sites than any other private developer along Pennsylvania's I-81 Corridor. Mericle has a wide variety of space available—all with ceiling clear heights in excess of 30 feet and all located immediately adjacent to an interstate. Mericle lists many 3PLs and 13 of the nation's top e-commerce fulfillment companies among its numerous tenants and clients. All of Mericle's available industrial properties can be reviewed at www.mericlereadytogo.com.

RETAIL LOGISTICS

AAA COOPER TRANSPORTATION • www.aaacooper.com

AAA Cooper Transportation has been providing safe and efficient transportation solutions for more than 65 years. With 70 plus strategically located service centers, we give individual attention to your transportation needs. Services include Less-than-Truckload, Dedicated Contract Carriage, Managed Services, International, and Fleet Maintenance.

AAA Cooper Transportation is committed to the long-term sustainability of the environment. It continues to implement processes that will make the world a better place to live for generations to come. Visit our website to learn more.



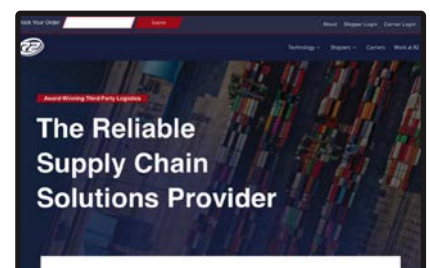
RATELINX • www.ratelinx.com

RateLinx delivers all your logistics data in one cloud-based platform with accurate data, advanced analytics, and reports to power visibility across orders, tracking, and invoices. The PayLinx module uses AI-driven data quality to enable freight spend control and real-time visibility, eliminating exceptions, and rate tolerances. Improve decision making and carrier partnerships with PayLinx. Accelerate your supply chain and connect with other RateLinx modules to maximize your visibility and savings.

REVERSE LOGISTICS

R2 LOGISTICS • www.r2logistics.com

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IN THIS SECTION:

Shipping Software - Supply Chain Mgmt/Optimization

SHIPPING SOFTWARE



RATELINX • www.ratelinx.com

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SOURCING/NEGOTIATIONS

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SUPPLY CHAIN MGMT/OPTIMIZATION



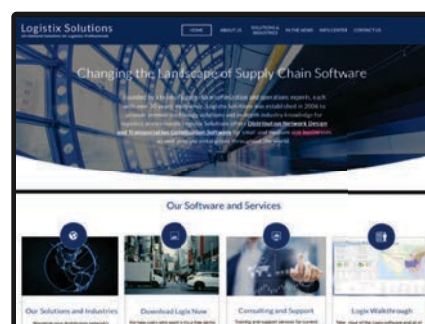
FLORIDA INTERNATIONAL UNIVERSITY • logistics.fiu.edu

Drive Innovation in Logistics! The Master of Science in Logistics and Supply Chain Management degree prepares students for careers in this demanded industry. The 10-month program features a unique three-part focus on logistics technology, data analytics, and distribution modeling. Graduates will gain technical knowledge, human interactive skills, and market knowledge from this STEM-designated program and become familiar with software that utilizes digital technology to analyze data available in the global marketplace. Please visit: logistics.fiu.edu

LOGISTIX SOLUTIONS • www.logistixsolutions.com

Logistix Solutions was established in 2006 to provide premier technology solutions and in-depth industry knowledge for logistics professionals. Logistix Solutions offers

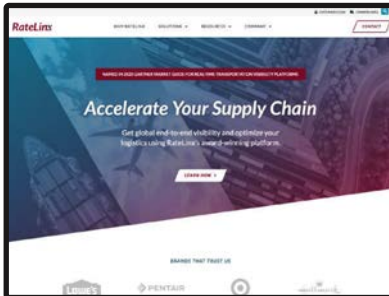
Distribution Network Design and Transportation Optimization Software for small, medium, and large enterprise businesses throughout the world who want to build a resilient, cost effective, and competitive supply chain. Our users report that Logix is the easiest and quickest tool on the market for network and transport optimization, with all the features that power users would expect.



IN THIS SECTION:

Supply Chain Visibility - TMS

SUPPLY CHAIN VISIBILITY

**RATELINX • www.ratelinx.com**

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TMS

ARCLINE (2000) INC. • www.arcline2000.com

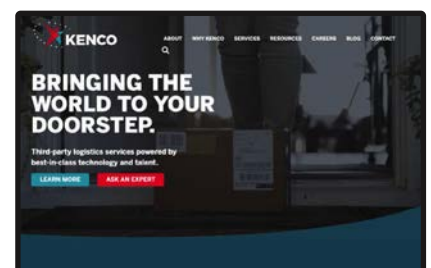
Arcline (2000) Inc. develops Dispatch Management Software for freight brokers and trucking companies with small to medium sized fleets. Manage all aspects of your transportation business with our industry and time tested software since 1991. Some Arcmodules include: US and Canadian Customs integrations to both ACE & ACI Manifest, Mobile Driver App, Customer load tracking Apps, Internet shipment tracking, email notifications, and even your company's own private loadboard. Free 30 day trials available. Contact us today at 800-364-4905.

**HUB GROUP • www.hubgroup.com**

Hub's extensive service network—built over many years—enables it to provide innovative transportation solutions that are versatile, flexible, and designed to deliver maximum efficiency. With this advantage, Hub Group is able to collaborate with customers daily to help them meet their transportation challenges. With intermodal, highway, and logistics transportation offerings, the Hub Network is your single source—coast to coast, border to border. Visit the website to learn what Hub can do for you.

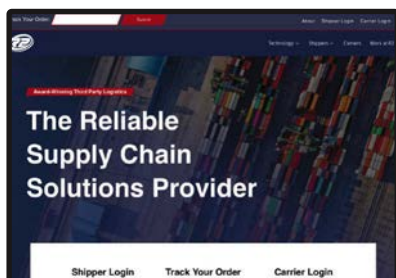
KENCO • www.kencogroup.com

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: TMS

TMS



R2 LOGISTICS • www.r2logistics.com

Founded in 2007, R2 Logistics is a national provider of transportation services and logistics solutions. As a third-party logistics (3PL) company, we provide access to thousands of contracted transportation providers. With offices located across the United States, we are able to provide your company with any possible over-the-road shipping need nationwide, including Mexico and Canada. Backed by game-changing technology and our culture for Reliable Service and Relentless Passion, we've built a strong reputation as an industry leader

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SaaS TRANSPORTATION, INC • www.saastransportation.com

SaaS Transportation, Inc. is a provider of cloud-based TMS solutions to third-party logistics companies, freight payment companies, shippers and carriers. The TMS solution is unique in that it uses APIs, which allows for easy integration with numerous trading partners with minimal set up time. Rates and carrier communications can also be managed using traditional techniques such as SMC contract management and EDI services. SaaS API services also include automation of truckload and LTL spot quotes. These integrated solutions automate freight management from carrier selection, shipment execution and visibility to final delivery enabling full transparency. It also provides shipment exception alerts that can be used to proactively resolve issues in addition to identifying rate and shipment discrepancies.

TRANSPORTGISTICS • www.transportgistics.com

TransportGistics is a global, multi-product and services provider of market leading, simple, incremental solutions for transportation management and logistics functions within the supply chain. Our cloud solutions enable our customers to source, procure, and execute transportation services; enable collaboration; reduce costs; improve processes; identify hidden costs of transportation; improve compliance; improve Supplier Relationship Management; monitor vendor performance; improve shipment visibility; generate automatic, status-driven alerts; and monitor carrier performance with respect to time in transit, service failure, and billing.



IN THIS SECTION:

Transportation

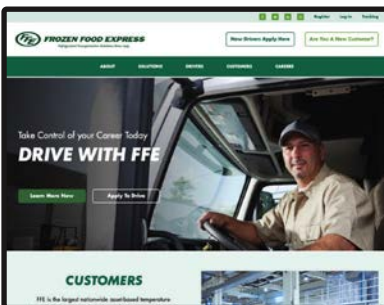
TRANSPORTATION

**AAA COOPER TRANSPORTATION • www.aaacooper.com**

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**FROZEN FOOD EXPRESS • www.ffeinc.com**

Frozen Food Express strives to be the leader in the temperature-controlled LTL market. As an asset-based carrier we leverage our core competencies in refrigerated transportation and storage that have been developed over 78 years to provide customers with the highest levels of service which represent great value. We offer both frozen and cooler capacity in state-of-the-art dual temp trailers. In an industry where temperatures are most important, we are proud to lead the way in technology that monitors and reports temperatures at every point along the cold chain. We will always strive to deliver a great customer experience and perform with honesty, integrity, and a sense of urgency to deliver on what we promise.

LYNDEN • www.lynden.com

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IN THIS SECTION:

Transportation Mgmt/Freight Mgmt - Trucking-Flatbed

TRANSPORTATION MGMT/FREIGHT MGMT

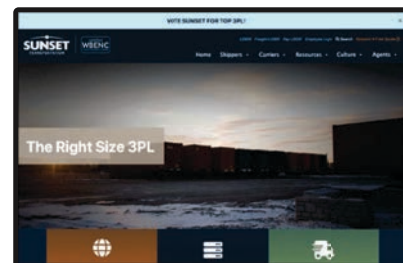


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SUNSET TRANSPORTATION • www.sunsettrans.com

Sunset Transportation is a women-owned (WBENC) 3PL with 2nd generation, family-style Midwest roots. Founded in St. Louis with nine branch offices in the US and Mexico, we're driven by the right-size fit for each customer, using domestic and global supply chain resources to be the ultimate service provider for shippers looking to streamline their logistics programs.



TRUCKING



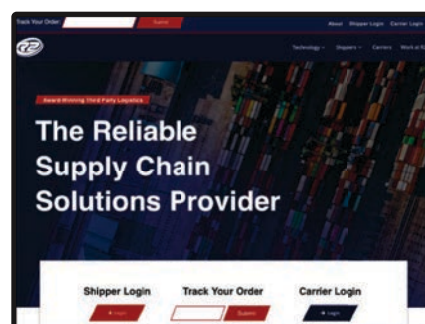
POLARIS TRANSPORTATION GROUP • www.polaristransport.com

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TRUCKING-FLATBED

R2 LOGISTICS • www.r2logistics.com

Founded in 2007, R2 Logistics is a national provider of transportation services and logistics solutions. As a third-party logistics (3PL) company, we provide access to thousands of contracted transportation providers. With offices located across the United States, we are able to provide your company with any possible over-the-road shipping need nationwide, including Mexico and Canada. Backed by game-changing technology and our culture for Reliable Service and Relentless Passion, we've built a strong reputation as an industry leader.



IN THIS SECTION:

Trucking-LTL

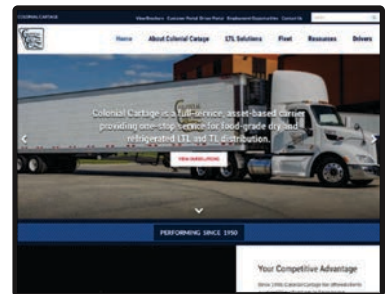
TRUCKING-LTL

**AAA COOPER TRANSPORTATION • www.aaacooper.com**

AAA Cooper Transportation has been providing safe and efficient transportation solutions for more than 65 years. With 70 plus strategically located service centers, we give individual attention to your transportation needs. Services include Less-than-Truckload, Dedicated Contract Carriage, Managed Services, International, and Fleet Maintenance. AAA Cooper Transportation is committed to the long-term sustainability of the environment. It continues to implement processes that will make the world a better place to live for generations to come. Visit our website to learn more.

COLONIAL CARTAGE CORPORATION • www.colonialcartage.com

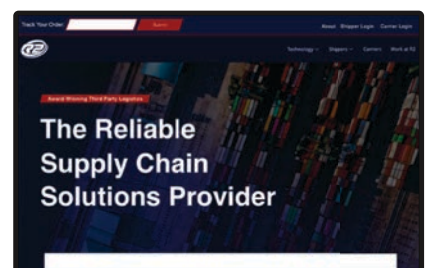
Colonial Cartage Corporation, the in-house carrier for Atlanta Bonded Warehouse, is a full-service asset-based carrier providing food-grade, dry and refrigerated TL, LTL, and pool distribution services for over 64 years. Colonial provides weekly scheduled temperature-controlled LTL delivery to all points in the Southeast, Midwest, Southwest, and Great Plains, as well as truckload and plant support services throughout its service area from its Atlanta terminal. Colonial's services include cross dock, consolidated order selection (bulk picking), and inbound consolidation to outbound cross-dock.

**FROZEN FOOD EXPRESS • www.ffeinc.com**

Frozen Food Express strives to be the leader in the temperature-controlled LTL market. As an asset-based carrier we will leverage our core competencies in refrigerated transportation and storage that have been developed over 78 years to provide our customers with the highest levels of service which represent great value. We offer both frozen and cooler capacity in state-of-the-art dual temp trailers. In an industry where temperatures are most important, we are proud to lead the way in technology that monitors and reports temperatures at every point along the cold chain. We will always strive to deliver a great customer experience and perform with honesty, integrity, and a sense of urgency to deliver on what we promise.

R2 LOGISTICS • www.r2logistics.com

Founded in 2007, R2 Logistics is a national provider of transportation services and logistics solutions. As a third-party logistics (3PL) company, we provide access to thousands of contracted transportation providers. With offices located across the United States, we are able to provide your company with any possible over-the-road shipping need nationwide, including Mexico and Canada. Backed by game-changing technology and our culture for Reliable Service and Relentless Passion, we've built a strong reputation as an industry leader.



IN THIS SECTION:

Vendor Compliance - WMS

VENDOR COMPLIANCE



TRANSPORTGISTICS • www.transportgistics.com

TransportGistics is a global, multi-product and services provider of market leading, simple, incremental solutions for transportation management and logistics functions within the supply chain. Our cloud solutions enable our customers to source, procure, and execute transportation services; enable collaboration; reduce costs; improve processes; identify hidden costs of transportation; improve compliance; improve Supplier Relationship Management; monitor vendor performance; improve shipment visibility; generate automatic, status-driven alerts; and monitor carrier performance with respect to time in transit, service failure, and billing.

WAREHOUSING

D&D DISTRIBUTION SERVICES • www.dd-dist.com

D&D is a full-service public warehousing and distribution services provider. We are located in York, PA placing us near the mid-Atlantic region's major metropolitan areas and seaports. We serve customers around the globe, developing customized logistics and customer service solutions. We handle raw materials at the front end of the supply chain and finished goods at the back end. D&D develops flexible programs to accomplish customers' goals.



METRO PARK WAREHOUSES • www.mpwus.com

Metro Park Warehouses is a full-service 3PL offering 2 million square feet in Kansas City of modern food-grade warehousing space, including air-conditioned and medical temperature-controlled space with licensed beverage & med/vet/pharma distribution, AIB Superior rating, and 5 rail facilities, all open to reciprocal switching. We also provide in-house local & regional trucking transportation and value-added services such as retail store displays, kitting, labeling and light assembly. Contact Metro Park to gain the competitive edge.

WMS

CAMELOT 3PL SOFTWARE • www.3plsoftware.com

A market leader since 1987, Camelot 3PL Software provides Warehouse Management Systems (3PL WMS) exclusively for third-party logistics warehouses to streamline their operations, eliminate costs and increase service levels. Offering cloud (SaaS) and on-premise solutions, Camelot's highly configurable solutions are ideal for small, medium and enterprise-level warehouses.



IN THIS SECTION:

WMS - Yard Management

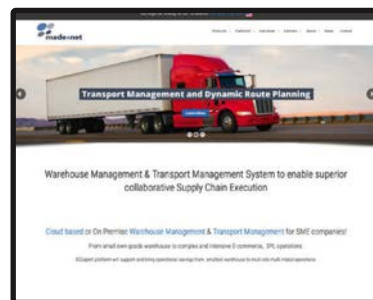
WMS

**INTERLINK TECHNOLOGIES • www.thinkinterlink.com**

Discover the full potential of your warehouse with Warehouse-LINK® Warehouse Management Systems (WMS). Warehouse-LINK® utilizes barcode and mobile computing technology to support real-time distribution activities—Multi-Building/Company/ Locations Management; Expiration, Lot/Batch/Serial Tracking, Raw Materials and Finished Goods; Characteristic Management (FIFO, ABC, UPCs); Location Management (cubic capacity, environmental, temporary, seasonal); Work Orders, Kitting, Cross Dock, Replenishment, QC, Wave Planning and Yard Management. Warehouse-LINK® integrates with business systems and material handling systems. Think Interlink for WMS expertise!

MADE4NET • www.made4net.com

Made4net provides best-in-class supply chain execution and warehouse management software for organizations of all sizes to improve the speed and efficiency of their supply chain. The company's end-to-end SCSExpert platform offers a robust WMS solution that enables real-time inventory visibility, labor management, and equipment productivity with performance analytics that drive faster, more accurate order fulfillment and improved supply chain efficiency. In addition to the best-of-breed WMS, the platform offers integrated yard management, dynamic route management, proof of delivery and warehouse automation solutions that deliver true supply chain convergence.



WORKBENCHES

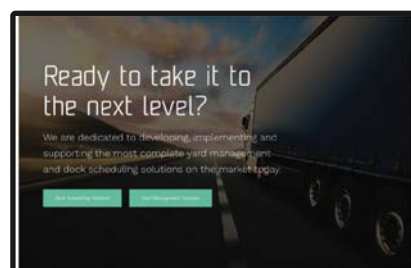
**PRO-LINE • www.1proline.com**

Pro-Line is a leader in modular ergonomic industrial workbenches and workstations. From basic four-leg stations to hand-crank or electric height-adjustable stations to top-of-the-line technical systems, we have it all. Retractable ball transfers, seating, packaging stations, and much more. Since 1979, Pro-Line has offered strength, ergonomic design and esthetics all at an affordable price, many models in stock. Our vast array of in-stock optional accessories makes it easy for you to configure a workstation to fit your needs.

YARD MANAGEMENT

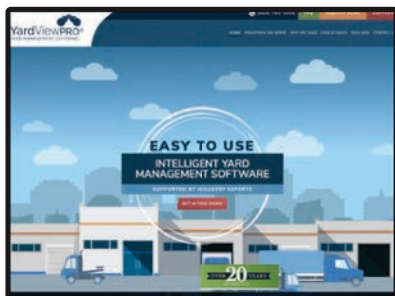
C3 SOLUTIONS • www.c3solutions.com

C3 Solutions is an information technology company specialized in yard management (YMS) and dock scheduling (DSS) systems. Since its founding in 2000, C3 has gained the confidence of clients around the world and across many industries including retail, grocery, distribution, manufacturing and parcel post. Headquartered in Montreal (QC), Canada and privately owned, C3 is dedicated to developing, implementing and supporting the most complete yard management and dock scheduling products on the market today. For more information on C3's products, schedule a free online demonstration.



IN THIS SECTION: Yard Management

YARD MANAGEMENT



CYPRESS INLAND CORPORATION (YARDVIEW) • www.yardview.com

YardView is a Web-based yard management system that is easy to learn and simple to use for operations personnel. Managing yard inventories, movements, appointments, drivers, carriers, time-related events, and other yard activities can be difficult. YardView works for any size operation. YardView is experienced with helping operations become more effective. YardView gets everyone on the same page. The benefits of a software program to help manage these processes are proven and can be realized by your operation. Contact our experts to discuss how we can translate what you are doing now into a more efficient system.

EXOTRAC • www.exotrac.com

Exotrac's Yard Management System is affordable software providing real time visibility and optimizing efficiency while minimizing detention costs. Exotrac's solutions cover a broad spectrum of industries such as: Manufacturing, Retail, Food, Chemical and Automotive Distribution as well as 3PL, Truck and Trailer Leasing and Automotive Manufacturing. Seamless integration and alerts keep you connected to your yard operations 24/7. Keep your yard moving, keep your business moving, and get a quick ROI with Exotrac.

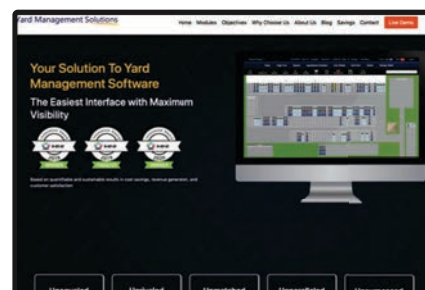


SENTIER SYSTEMS INC. (YARD COMMANDER) • www.yardcommander.com

Yard management software shouldn't be complicated or expensive. Yard Commander is a Web-based YMS that's simply effective. We've made the software fully functional while avoiding unnecessary "features." At the same time we've kept it intuitive and user friendly. Yard Commander offers the most affordable and easy-to-use YMS on the market.

YARD MANAGEMENT SOLUTIONS • yardmanagementsoftware.com

Eagle Eye by Yard Management Solutions is your ultimate partner as it works 24/7 to increase efficiencies, streamline operations and reduce costs. Real-time visibility and instant analytics on all assets, shipments and workforce activities deliver the moment-to-moment pulse on your operation. Powerful functions lighten your workload and do the heavy lifting for you and our alert system will notify your team of problems before they arise. Our cloud based software is easy to learn, simple to use and will keep your team informed, on track and in motion. Call 800-766-6197.



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Buoyed by efficiency and environmental performance gains, ocean carriers favor ever-bigger container ships. But they must gain passage through narrow channels.

LARGEST CONTAINER SHIP IN THE WORLD

THE HMM ALGECIRAS

- approx. 1,312 feet long
- beam (width): more than 200 feet
- can carry 23,964 TEUs
- is registered in Panama although it cannot transit the Panama Canal due to its beam

A large container ship engine has about

1,000 TIMES
more power than a family car.

5,360

container ships comprise the world's merchant fleet, as of January 2020

Container ships began operating in liner services more than 50 years ago. Over that time, they have increased in capacity by almost

1,500%

Ultra large container ships have a capacity of **10,000 TEUs** and up.

The world's biggest container ships are about

1,300 FEET LONG

with a width of 180 feet.

Their engines weigh

2,300 TONS

their propellers

130 TONS

The height that separates their bridge and engine room is

21 STORIES

13-person teams and a computer system can operate these ships.

WORLD'S BIGGEST CHOKEPOINTS

- Suez Canal
- Strait of Malacca
- Strait of Hormuz
- Panama Canal

For example, the Strait of Malacca, which links Asia with the Middle East and Europe, is 1.6 miles wide at its narrowest point off Singapore.

984 FEET

The width of the Suez Canal at its narrowest point

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