

SPECIAL REPORT

CAREER SOLUTIONS:
CULTIVATING SUPPLY
CHAIN TALENT

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THE MAGAZINE FOR DEMAND-DRIVEN ENTERPRISES

COLD CHAIN INNOVATIONS

ALSO IN THIS EDITION

Customer Experience:
Going the Extra Mile

Food Logistics:
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DECEMBER 2021



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Info SNACKS

BITE SIZED SUPPLY CHAIN/LOGISTICS INFORMATION

WHAT WOULD YOU Do?

Businesses want to avoid disruptions at all costs. All SME respondents to a DHL survey say they are willing to go to great lengths for a seamless and successful holiday season.

- 44% say they would listen to Jingle Bells on repeat if it meant their business would have a seamless and successful holiday season
- 23% would sleep in the snow
- 18% would take an egg nog bath
- 16% would be Scrooge's roommate

—DHL survey of U.S. small and mid-sized enterprises

40%

Percentage of America's trucking capacity left on the table every day.

—Testimony from David Correll, a research scientist at MIT's Center for Transportation and Logistics, before the House Transportation and Infrastructure Committee. Long-haul, full-truckload drivers spend an average of 6.5 hours every workday driving, even though federal safety regulations let them drive for 11 hours a day. Adding just 18 minutes of driving time to every driver's day "could be enough to overcome what many of us feel is a driver shortage," Correll testified.

50 Years

The amount of idle time that was wasted in 2021 by trucking trips originating around the busiest ports in the United States.

1 Day+

The amount of idle time per vehicle, up from 17 hours per vehicle in 2019 and 21.5 hours in 2020.

50%

Increase in idle time per vehicle from the start of 2018 through October 2021.

— Lytx Inc. data



RECORD BOOK GETS A CHARGE

The Guinness World Record for the longest continuous journey by an electric vehicle (non-solar) in a single country was awarded to a tour team from HARTING. The team drove a Volkswagen ID.4 EV. Their mileage more than doubled the driven mileage set by the previous record. Based in Germany, HARTING develops charging cables and plugs to support the shift to electric vehicles.

"You hear a lot about the supply chain in the news, but frankly not a lot of people have a clear understanding—whether they have a Ph.D. or they didn't go to school—about how a supply chain works."

— President Joe Biden

DOES YOUR BREAD TASTE LIKE CARDBOARD?

Some grocery stores use cardboard cutouts of food to persuade customers that the supply chain crisis isn't as much of a big deal as they might think. That's what retail analyst Phil Lempert recently told *Inside Edition*.

Lempert says he believes retailers are attempting to curtail panic shopping and hoarding by filling shelves that used to hold food with seasonal items and placing cardboard pictures of grocery items and price tags over empty shelves.

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Items that need to stay cool range from containerloads of fish to human tissues, and each requires special techniques to maintain conditions door to door. Here's how shippers keep the cold chain intact.



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Gaining ground on seamless customer service



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IMPROVING CX: GOING THE EXTRA MILE

Companies that reliably meet customers' needs outpace those that can't. These supply chain moves improve the customer experience, from the supplier's customer to the end consumer.

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The shift to home dining and takeout altered the recipe for manufacturing, packaging, and distribution operations. Here's how food companies cook up solutions for new challenges.



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CULTIVATING SUPPLY CHAIN TALENT

This year was notable for labor challenges and new approaches to employee engagement. These companies lean into education and the profession's societal impact to attract workers and nurture job satisfaction.

NASA's crawler machines can transport 18 million pounds



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Amy Davis leads Cummins' new zero-carbon power business by evaluating the right pace for her team so they don't take on too much, and thinking about where the company needs to be in 2030, 2040, and beyond.

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When sales grew from 800 cases per year to 10,500, with just one full-time employee, natural wine company BREA Wine accelerated distribution by working with alcohol compliance expert Eleny Imports.

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Lift-Rite's compact pallet jack maneuvers tight spaces



CHECKING IN

Robots Do Yardwork, Too



Keith Biondo, Publisher

Efficient warehouse operations provide the levels of service that customers demand as America's economy scales up. In many instances, yard operations impede that efficiency.

Safety, driver facilities, cooperation, and consideration for truckers' time are ongoing challenges. One driver tells us that a yard he regularly serves is "like a moonscape."

The confluence of e-commerce growth in retail and business-to-business with the consumption explosion driven by the recovering economy has made any time a driver spends dwelling in a warehouse yard more damaging than ever.

Is there an automated yard solution just over the horizon? Andrew Smith says there is. Smith is the CEO and founder of Outrider, a company that builds driverless computer-guided EV trucks designed to efficiently and quickly move trailers from the yard to warehouse and DC doors.

"Over-the-road truckers can waste hours dropping off and picking up trailers in busy hubs," Smith says. "These yards are one of the many bottlenecks in our current supply chain."

Outrider's main test site is in Brighton, Colorado, and is billed as one of the most automated yards in the country.

Here is how it works. A driver drops a trailer to an assigned spot. Then, warehouse personnel assign a robotic yard dog to that trailer and the robot takes over. The robot navigates through the yard, locates that trailer, gets in position, scans the trailer to confirm it is the correct one, and connects a pressurized air hose to release the trailer's parking brakes. Then a robotic arm extends and hooks up the trailer.

Next stop? The designated warehouse door to back in and unhitch. Done.

That process happens hundreds of times 16 hours a day at the test site. Outrider recently announced that its trucks had completed 1,000 trailer moves at a Georgia-Pacific DC near Chicago.

"It's a monotonous task that takes place millions of times a day in yards," Smith says. "The idea here is that the person that was in that yard truck cab is now available to operate the system or do other work inside the warehouse, or (more importantly) be in the trucks that are over the road."

Add up the thousands of warehouse yards and tens of thousands of truckers serving them, and you can quickly see how millions of hours are slowing down logistics operations across the country. Considering the driver shortage, gaining back those hours for those truckers would speed operations nationwide if robot yard solutions catch on.

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GOODQUESTION

Readers Weigh In

How would you summarize the supply chain in 2021 in five words?

BIGGEST DUMPSTER FIRE EVER.

—Chris Peckham
VP, Operations, FreightPlus

BUCKLE UP FOR THE RIDE.

—Darlene Wolf
SVP, Strategic Partners
Arrive Logistics

ONE DOWN, TWO TO GO.

Supply chains have weathered the first phase of the pandemic—with immediate impacts like manufacturing disruptions and demand swings. We are now in phase 2; we are seeing the non-intuitive impacts resulting from a complex ecosystem, for example, container capacity and raw material supplies. In phase 3, we will understand the new normal and demand will have been adjusted for the abnormal swings experienced in phases 1 and 2.

—Allen Jacques
Industry Leader, Kinaxis

EVERYBODY'S RETHINKING THEIR SUPPLY CHAIN.

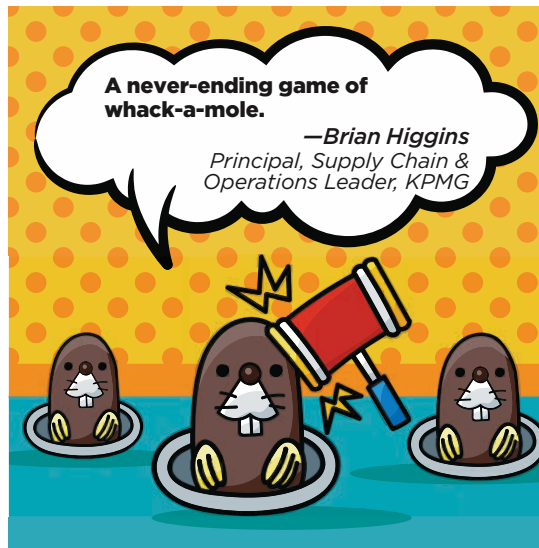
—Mark Robinson
President, UPS Capital

ANTIQUATED PROCESSES UNEARTHED SIGNIFICANT DISRUPTION.

—Michael Hung
CEO, CBX Software

STRAINED, UNRELIABLE, AND UNDER SUPPORTED.

—Allen Polk
VP, Sales, Kenco



UNPRECEDENTED, VOLATILE, DYSFUNCTIONAL, BUT HOPEFUL.

—Neil Wheeldon
Chief Strategy & Innovation Officer
BDP International

EVOLVING AT AN ACCELERATED PACE.

—Greg White
SVP, Corporate
Development, TrueCommerce

OPPORTUNITY TO IMPROVE BUSINESS STRATEGIES.

—Greg Forbis
EVP, Strategy & Business Development
RJW Logistics Group

BOTTLENECKS, BULLWHIPS LEAD TO RESILIENCY.

—Christina Vali
Director, Client Solutions, Tecsys

A MASSIVE BROKEN UNPREDICTABLE MESS.

—Kevin Ledversis
Sales Director, Newcastle Systems

GLOBAL, VOLATILE, LONG, EXPENSIVE, RECOVERING.

—Arjun Chandar
Founder & CEO, IndustrialML

OPPORTUNITY TO EXCEL AND EVOLVE.

—Bruce Lancaster
CEO, Wilson Electronics

UNBRIDLED CONSUMERISM CAUSING RECORD DELAYS.

—David Bowers
VP, Warehouse Operations
TA Services

A DIGITAL REVOLUTION IS HAPPENING. Massive disruption, wild unpredictability, and sky-high customer expectations have combined to produce a perfect storm for global supply chains. Shippers have no choice but to abandon outdated ways of working and get on board with the digital revolution at hand.

—Virgil Ferreira
COO Rate Management, Magaya

A SLOW MOVING GOAT RODEO.

—Dale Young
VP, Warehousing & Distribution
World Distribution Services LLC

NECESSITY = MOTHER OF INVENTION.

—Tom Martucci
Vice President &
Chief Technology Officer
Consolidated Chassis Management



Scale matters for everything shortages.

Home Depot, Walmart, and Costco are among those who can charter entire vessels to ensure capacity. Companies from Nike to Amazon increased air freight, despite costs of up to \$2 million a charter.

Large fast-moving consumer goods firms can procure more of everything from raw materials to packaging and transport. Large retailers can purchase “panic pallets” and absorb the inventory costs. They have the means to lessen exposure as compared to the markets overall.

—Susan Beardslee

Principal Analyst, Supply Chain Management and Logistics, ABI Research

Challenging
Hectic
Absurd
Obscure
Somber

—Jeff Pepperworth
President & CEO, iGPS Logistics

MORE CAPACITY STARTS WITH LABOR.

—Gregory W. Tuthill
Chief Commercial Officer
SeaCube Containers

CONGESTED. ESSENTIAL. GRITTY. PAINFUL. HEROIC. How people are overcoming the influx of shipments and pain points to fulfill orders is heroic.

—Dustin Hansen
CEO, InXpress

DISRUPTION, UNCERTAINTY, WATERSHED, RISK-MANAGED, DIGITAL. Over the past 20 months, supply chains have been faced with unpredictability and disruptions on a global scale. 2021 has shown supply chains need to become more resilient and adapt digitally.

—Mick Jones
Strategic Supply Chain Advisor
Zencargo

PUSHING LIMITS AND PRIORITIZING PEOPLE.

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

CONGESTION, VOLATILITY, COMPLEXITY MEET PERSEVERANCE.

—Patrick Campbell
U.S. Chief Operating Officer
Coyote Logistics

CHALLENGING, UNDERINVESTED, RIPE FOR DISRUPTION.

—Gonzalo Galindo
Head, CEMEX Ventures

SMALL BOTTLENECKS CREATE MAJOR DISRUPTIONS.

—Nathan Strang
Director, Ocean Trade Lane
Management, Flexport

RIPE FOR DIGITAL DISRUPTION.

Particularly for retailers, 2021 revealed the urgent need for innovative supply chain strategies and disruptive technologies.

—Guy Bloch
CEO, Bringg

WE NEED OPERATIONAL RESILIENCE NOW.

—Jennifer Bisceglie
CEO & Founder, Interos

HIGH DEMAND, OVER STRESSED, LACKING.

—Lonny Holston
Export Operations Coordinator, Mickey

BROKEN, OPPORTUNITY, OPAQUE, UNSUSTAINABLE, INFLATIONARY.

—Scott Evans
Co-founder, Waybridge

DRINKING FROM A FIRE HOSE.

—Patrick J. Allen, CSCP
Client Solutions Director
Transportation Insight

CHANCE FAVORS THE PREPARED MIND.

—Lior Elazary
CEO, inVia Robotics

SMBs FACE THREAT AND OPPORTUNITY.

—Dennis Oates
Chief Logistics Officer, Sendle

MUCH ADO ABOUT NOTHING DELIVERED.

—Eric Allais
President & CEO
PathGuide Technologies

ADAPT AND INNOVATE TO SURVIVE.

—Alex Wakefield
CEO, Longbow Advantage

CRISIS EXPOSED NEED FOR VISIBILITY.

—Sam Lurye
CEO & Founder, Kargo

Have a great answer to a good question?

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

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

We'll publish some answers.

Tell us at editorial@inboundlogistics.com or tweet us @ILMAGAZINE #ILGOODQUESTION






[INSIGHT]

DIALOG

@ILMagazine

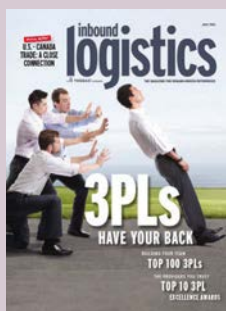
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Who Has Your Back?

I think the people on the July 2021 *IL* cover are:

- The inexperienced shipper staffs who don't understand the fine points of transportation—that's the falling person.
- The ones catching him are the experienced staffs of any group—mostly asset companies who actually have trucks, docks, and other hard assets.

—**Danny R. Schnautz**
Clark Freight Lines

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

bit.ly/driver_shortage_solutions

We are not short professional drivers; we are short imagination and effort.

Our government and our trucking association say we must go to the other side of the world to find drivers.

No one says go to main street Canada and ask individuals if they would like to trade their \$30,000 job for an \$85,000 job.

Go with a professional 355-hour training course, help the working poor to finance it, show them how this can work, and gain thousands of new professional drivers.

We need to stop telling ourselves we can't find professional drivers and start doing something different.

—**Roy Craigen**

TRANSCOM Fleet Services Inc., Edmonton

Re. October 2021 Checking In: Twinning Your Supply Chain from Google

bit.ly/supplychainTWIN

The concept of modeling has been practiced and refined by the financial services industry. One need only look

at the stress tests of banks and the banking system to see these modeling systems at work.



But even before that, Monte Carlo Simulations were used first for war games around World War II and then in finance. The simulations are focused on the probability of outcomes.

The financial crisis of 2008 demonstrated the need for testing and resiliency in the critical financial services sector.

Likewise, the pandemic has highlighted the essential role of the supply chain and the need for a model of operational testing like twinning. We must ensure critical infrastructure can endure the next crisis, whatever that may be.

—**Name withheld by request**

Quick TIP

To save time, establish a single point of contact for expedited shipments. The same expeditor stays with the client throughout the shipping process, is available 24/7/365, eliminates hold times, and saves you from having to explain your situation during each call to a new representative.

—**Dan Boaz**

President and CEO, AirFreight.com

Fast TAKES

With e-commerce continuing to boom, the last mile is where the battle is being fought and won.

For last-mile delivery companies in the United States, their greatest challenge has been finding enough drivers to meet demand. This is where technology comes in—not to replace our workforce, but to enhance, augment, and empower what they're able to do.

—**Samuel Mueller**
CEO, Scandit

Facing delayed ships, many looked to pay premium rates to expedite faster services—creating even more bottlenecks and disruption.

The key to resolving this crisis is making disruptions and volatility shorter and more predictable.

Companies must use agile decision making and scenario planning to make quick decisions and answer questions like: What is the cost and delivery risk to go overland or by train? Or can I “pool” risk with other companies—possibly competitors—to gain preferential pricing?

—**Evan Quasney**

Global VP, Supply Chain, Anaplan

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epa.gov/smartway



10 TIPS

Advancing Your Supply Chain Career

Career opportunities in supply chain are practically limitless. To avoid career stagnation and advance with your evolving interests and desires, take a proactive approach.

1 BE COURAGEOUS AND MAKE BOLD MOVES.

Wayne Gretzky said, “You miss 100% of the shots you never take.” This applies to the supply chain workplace as well as the hockey rink. Be bold and make moves that lead you closer to your goals. Share ideas and push back (respectfully) if you feel your voice isn’t being heard.

2 JUST SAY YES.

When a chance for change or new experience emerges, respond in the affirmative when possible. Whether it’s a lateral move or a significant promotion, consider what you can gain by saying yes. If your company asks you, it’s probably because there is a business need, and they see something in you that they want to nurture.

3 STRETCH BEYOND YOUR COMFORT ZONE.

Reaching your true potential requires putting yourself out there, even when you fear failure. Assess what parts of your job make you uncomfortable and seek additional opportunities in these areas. Supply chain leaders are pros at being comfortable with being uncomfortable.

4 VOLUNTEER FOR PROJECTS.

Don’t sit around and wait to be asked. Raise your hand

and volunteer, even if you weren’t initially asked to be on the project team. If you’re exploring other roles in the supply chain, keep your ear to the ground to understand what’s going on in your company and stay on top of potential volunteer opportunities.

5 FIND A MENTOR.

Start by defining your career goals and identifying the qualities and attributes you want your colleagues to see in you. Is there someone in your network who matches this desired career path and professional style? Reach out, tell them why you admire

them, and ask for guidance. Most people will be flattered and willing to help. Human resources and mentorship programs are also great resources.

6 STUDY CONNECTIONS BETWEEN FUNCTIONS.

With many moving parts in the supply chain, it can be easy to develop a narrow focus. Look across functions and understand how each connects. Make lateral moves when you can, especially early in your career. A macro view gives you the foundation to become a great leader.

7 LOOK WHERE THE BALL IS GOING, NOT WHERE IT IS TODAY.

In the rapidly evolving supply chain, advancement-minded individuals understand trends and prepare for the future. The pandemic exposed weaknesses that opened new opportunities in growing areas such as software and automation.

Look at the changes experts are predicting, and prepare yourself.

8 MAKE YOUR CAREER INTERESTS KNOWN.

Your career aspirations may be very different than what your co-workers and superiors assume. Talk about goals in a positive and appropriate way. Attend conferences and webinars that focus on your supply chain interest areas. Use these experiences as a springboard to start a conversation about your ambitions.

9 LISTEN TO FEEDBACK.

Criticism may not be pleasant to hear, but it gives you the insight necessary to adjust, improve, and grow. Instead of making excuses, really listen. Ask clarifying questions to better understand your perceived weak spots. Then sit down and make an actionable plan to strengthen your performance based on the feedback.

10 TRAIN LIKE AN ATHLETE WHOSE WORK EXTENDS FAR BEYOND THE FIELD, COURT, OR RINK.

It often involves unexpected training designed to expand core competencies. A notable example: football players taking ballet lessons. Think outside the box when growing your skills for your future supply chain career. Also, professional athletes know they need to work harder than anyone else. The same goes for you. As Theodore Roosevelt said, “Nothing worth having comes easy.” If you want it, you have to work for it.

SOURCE: KHARA JULIEN, CHIEF PEOPLE OFFICER, TRANSPORTATION INSIGHT



EXPERIENCING STICKER SHOCK FREIGHT RATES?

It's no secret that capacity remains tight and freight rates stay high. This is affecting all markets, but temperature-controlled products are being hit the hardest.

With cold chain demand rising, it's becoming even more difficult to find providers that can keep your temperature-controlled shipments moving. Stress less with Trinity Logistics. With a network of over 70,000 qualified carriers and integrated cold chain solutions offered as being a part of Burris Logistics, we can help you from production to delivery.

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READERPROFILE *as told to Karen Kroll*

Star Power



AMY DAVIS is vice president and president of the New Power segment of Cummins Inc.

RESPONSIBILITIES: Comprehensive accountability for Cummins' alternative power segment, including manufacturing, supply chain, operations, sales, and other functions within the business.

EXPERIENCE: Vice president and general manager, Cummins filtration business unit; president, Cummins distribution business; vice president, sales, Alcan; executive director, medium duty truck and bus business, and director, market strategy and planning, both with Cummins; managerial positions with AT&T.

EDUCATION: B.A., English, Northwestern University.

Cummins took a chance on me years ago. I don't have a science or supply chain background. And 26 years ago, I was probably one of the first women in trucking.

In my first job as a field sales rep, I worked with customers. If an engine broke down, I was out there handling it. I also leaned on some talented engineers to pick up the technical side. It was a great way to learn.

One of the most pivotal roles in my career was as owner of a Cummins distributorship, providing parts and service and selling products into end markets. It changed my mindset around how I think about my job and the people I lead, because it was my own money at risk. It also made me appreciate the resources available within a large company.

FROM SMB TO GLOBAL BUSINESS

In 2015, after a strategy shift within Cummins, I sold my shares and rejoined the company as leader of the filtration business. I had moved from being a small business owner to running a global business. As a distributor, I'd been a customer of filters. When I led the filtration side, my customers were distributors around the world. It was a privilege to do both.

I started my current role about one year ago. Cummins' new power business encompasses zero-carbon technology, including batteries; electric vehicle components; fuel cells; and electrolyzers, which generate hydrogen from water through electrolysis. Our joint venture,

"One of my most important responsibilities is to step back and figure out where we'll be landing at key points in time. I need to keep a long-term mindset and think about where we need to be in 2030, in 2040, and beyond."

NPROXX, also makes high-pressure storage tanks for hydrogen.

This business changes rapidly. We are constantly looking at partners, acquisitions, and other ventures to round out our portfolio. It's a challenge because we work with both leading-edge technology that's not ready for commercialization, as well as products we're starting to commercialize. They're very different mindsets.

LESSONS LEARNED

I've learned a few things. One is to evaluate the pace your team can go. In this exciting space you cannot go fast enough or hard enough, but you also can end up taking on too much. We try to figure out our resource planning and pace.

We also have to be okay with failure, learn from our milestones, and move on to the next project. That way, we maintain a long-term, winning perspective.

Our supply base is immature and includes a lot of startups. Any operational issue can impact delivery if we're not right on it, solving the problem. That also can be a big distraction from the long term.

One of my most important responsibilities is to step back and figure out where we'll be landing at key points in time. I need to keep a long-term mindset and think about where we need to be in 2030, in 2040, and beyond.

This is an amazing industry and the backbone of the economy. I'm grateful Cummins took that chance on me. ■

Amy Davis Answers the Big Questions

1 What are two or three things you wish you'd known before starting your current role?

The technology is so new, it's foreign even to experienced engineers. Yet it helps that we all are grabbing information as fast as we can. The other thing that I wasn't prepared for is this fast-moving space. Many of our competitors are startups. We spend a lot of time trying to keep a start-up mentality.

2 What's the best leadership or supply chain advice you've received?

Early in my career, a leader at AT&T told me there would always be more things to be done than you can do well. The art is knowing what to knock out of the park. You have to be thoughtful about what you choose. I don't always get it right but focusing on this advice has helped me.

3 What are the first few things you check about the business each morning?

First is our people and safety. Second, employee morale. After that, customers. For all these, I ask if we have the right people on the challenges so daily operations keep humming, and I can focus on strategic issues.



FROM VINE TO MARKET

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Pet Supplies



PETS GET THEIR PAWS ON TABLE FOOD

With 89% of dog and cat owners saying it's important for their pets to eat the highest-quality ingredients, a Chewy.com survey reports, dog and cat food manufacturers shift their products from pet food facilities to human food supply chains.

Two examples: The Honest Kitchen recently launched a 100% human-grade cat product line in which all ingredients are sourced from the human food supply chain, and is set to open a new facility in Kansas that produces human-grade pet food. And Australia-based ilume created a "smart bowl" and "smart collar" that analyze a dog's activity and make diet recommendations.

Trends from the Chewy.com survey reveal:

- 52% of pet owners seek pet food that has strictly "clean" ingredients.
- 75% of millennial and Gen X pet parents are especially interested in grain-free, organic, and non-GMO food.
- 87% of pet owners say it's important to check pet food labels, looking for keywords such as organic, high-quality nutrition, high protein, superfood, limited-ingredient, non-GMO, farm-fresh, and preservative-free.
- 84% of pet owners opt for pet foods made in the United States, with a growing trend toward domestically produced food.
- 82% are interested in geographic origins and physical production locations, such as factories or farms.

PETS CONSUME ABOUT 20% OF THE WORLD'S MEAT AND FISH. THAT NUMBER WILL RISE AS MORE CONSUMERS FEED THEM HUMAN-GRADE PRODUCTS.

— The Guardian

INSECTS HAVE GONE TO THE DOGS

Don't bug out—finding insects in your dog's food could be a good thing. High-end dog food startup Pure Simple True whips up dog treats made with sustainable insect protein.

The e-commerce-only brand uses Ynsect's Molitor larvae in its human-grade Bernie's Tender Medallion dog treats, Ynsect's first insect-based product in the United States. The ingredient is high in protein and hypoallergenic.

Pure Simple True controls its own production and supply chain, operating Bernie's Cookhouse and fulfillment center in Seattle. The company's coastal location provides easy access to key seafood ingredients.

Ynsect's vertical insect farm in France uses mealworms to create sustainable insect ingredients, which are fully traceable, antibiotic-free, and applicable for dry and wet pet food.

Indoor vertical farming allows the supplier to be fully carbon-negative. Insect protein requires 98% less land and 45% fewer resources than traditional livestock farming, making it a sustainable protein alternative, the company says.



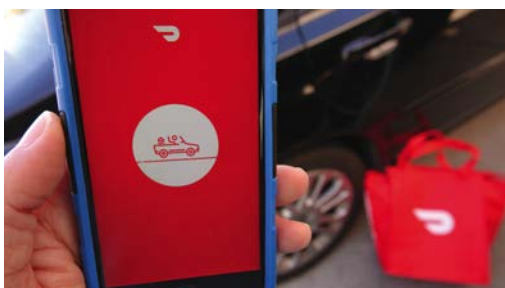
RETAILERS FETCH ON-DEMAND DELIVERY

Pet parents across the United States can now get their pets' food and supplies delivered to their doorstep within one hour as independent and big-box pet retailers jump on on-demand delivery services.

Independent Pet Partners, parent company of Chuck & Don's, Loyal Companion, Kraser's, and the Natural Pawz pet chains, teamed up with DoorDash to offer same-day delivery. The stores now make deliveries in under an hour on average.

Dollar Tree now offers same-day delivery of its grocery items and pet products in as quick as one hour from 7,000 stores through its partnership with Instacart, creating more competition with pet retailers for budget-conscious shoppers.

PetSmart is also using DoorDash for on-demand delivery of its pet food, toys, and supplies from 1,500 stores through its app and website. PetSmart also uses the DoorDash Drive white-label fulfillment platform, meaning Dashers can deliver native orders from its website, app, and third-party platforms.



Petco, which started using DoorDash to offer same-day delivery in 2020, reports the partnership has given it an advantage over e-commerce-only pet retailers, because fulfilling orders directly from its physical stores costs less than shipping.



PET OWNERS BEG FOR SUBSCRIPTIONS

BARK, maker of BarkBox dog toy subscription boxes, continues to benefit from growing dog ownership, increased spending on pets, and increased online sales, says CEO Manish Joneja. The company added 271,000 active subscriptions in Q2 of fiscal 2021, a 39% increase compared to last year. Here are some contributing factors:

E-commerce focus: A rising share of pet sales occurs online. In 2015, e-commerce represented 3% of total pet sales, rising to 25% in 2020 and 35% by 2024. BARK is investing in new talent to grow its online ecosystem. Anil Nair, previously at Amazon, is now its chief supply chain officer.

Add-to-box feature: The add-to-box feature allows consumers to add specific toys and treats to their existing subscription box each month. It's a significant driver of revenue that enables BARK to recommend items tailored to each shopper. Last quarter, add-to-box drove \$6 million of direct-to-consumer revenue, a 75% increase compared to the same period last year.

Food and health: The company has ramped up BARK Eats, a highly personalized subscription-based meal plan that can be added to existing subscriptions. It tailors each dog's food by breed, size, age, and lifestyle. The company also launched BARK Bright, a dental treat and toothpaste kit and the first product in its health vertical sold as a subscription, a one-off add-to-box item, and in stores.

Facility upgrade: The company recently expanded its Ohio-based BARK Eats fulfillment center from 12,000 square feet to 100,000 square feet. This expansion, as well as packaging automation, increases its ability to ship to customers throughout the United States quickly and cost-effectively. The company also introduced operational efficiencies, such as automated packaging.

BARK'S GROSS MARGIN RESULTS ARE IMPRESSIVE CONSIDERING THE RISING FREIGHT RATES THAT WE AND THE REST OF THE WORLD ARE EXPERIENCING.

— John Toth, Chief Financial Officer, BARK



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MGN Logistics has long been a leading provider of IT solutions for the freight management and transportation industry. Its TMS platform is the backbone of some of the country's largest 3PLs. This innovative TMS has been further enhanced with a parcel management technology solution and is now available to help companies of all sizes improve operational efficiencies.

MGN's parcel invoice auditing and management provides the business intelligence package shippers need to optimize costs in a continuously evolving marketplace. Deploying this technology for your company is simple, efficient, and the return on investment is immediate. All you need is this one powerful, easy to use platform to manage your entire supply chain.

[IN FOCUS]

NOTED

The Supply Chain in Brief

> GOOD WORKS

• Participating in the Pink October global breast cancer initiative, **Bolloré Transport & Logistics** provided free screenings to employees in Côte d'Ivoire, Guinea, and Italy at partner health centers or in their workplace. The company is also working with Florida Mobile Mammography to offer 3D mammograms to employees.



• **Ruan** and **Bobcat** accepted an Outstanding Disability Employer Award from the Minnesota Organization for Habilitation and Rehabilitation for partnering with Rise, a nonprofit that supports people with disabilities. Rise provides two groups of people to work six hours per day at a facility where Ruan houses and distributes thousands of Bobcat parts and products.



• **Old Dominion Freight Line** is partnering with the United Service Organizations (USO) to support active service members and their families, and provide resources that help service members prepare to transition out of the military. As part of the partnership, Old Dominion will make an annual contribution to the USO.

> SHOVEL READY



■ **Walmart** plans to open a 1.5 million-square-foot automated fulfillment center in 2023 and a 730,000-square-foot grocery distribution center in 2024 near Dallas-Fort Worth to support its growing supply chain network.

■ **GE Appliances** will invest \$450 million at its Appliance Park headquarters and manufacturing site in 2023 to upgrade the facilities, expand capacity, and launch new products.

> GREEN SEEDS

• **Blue Bottle Coffee** aims to achieve carbon neutrality by 2024 for its products and packaging, from sourcing to end-of-life emissions. The company reduced emissions in its coffee sourcing, electricity, dairy, and waste, and is scaling regenerative agriculture.

• **Dachser** will only purchase electricity generated from renewable resources, and will ramp up its in-house renewable energy generation. The freight company will also install photovoltaic systems on its European logistics facilities and office buildings.

• **Duke Realty** targets carbon neutrality for its operations by 2025 as well as carbon neutrality in line with the Paris Climate Accords by 2040. The company continues to build only energy-efficient facilities.

and
m&a

■ Global supply chain solutions provider **AIT Worldwide Logistics** agreed to acquire New York-based

Select Express & Logistics, a final-mile delivery and assembly services provider for oversized goods.

■ **Rockwell Automation** acquired **AVATA**, a services provider for supply chain management, enterprise resource planning, and enterprise performance management solutions.

■ PS Logistics subsidiary **P&S Transportation** acquired all transportation assets of **JLT Services**.

■ **Uber Freight** acquired transportation management software company **Transplace**.

■ Denmark-based **A.P. Moller-Maersk** will acquire freight forwarder **Senator International** along with two Boeing aircraft.

> RECOGNITION



• **Geek+**, a global autonomous mobile robot company, received the **Supply Chain Excellence Innovation Award 2021** for its robotic sorting solution. The award recognizes companies that excel in their global supply chain operations.

• **Penske Logistics** received the **North America Supplier Award** from aluminum rolling and recycling company Novelis. Penske is an essential component of Novelis' closed-loop aluminum supply chain serving automakers. The award recognizes Penske's outstanding performance in overall logistics while receiving the best score from Novelis' key carriers throughout North America in 2020.

> SEALED DEALS



• **Port Manatee** is collaborating with **Del Monte Fresh Produce** to keep the company's fruit imports coming into the seaport through at least 2026, with options through 2036. Coral Gables, the Florida-based Del Monte unit, will lease Port Manatee's warehouse facilities through at least August 2026.

• **Metapack**, an e-commerce delivery technology, was selected to run global shipping and returns services for coffee company **Nespresso** to enhance its consumer experience. Metapack provides Nespresso with a global standardized suite of products as it streamlines delivery and returns operations. It also removes the complexities around carrier integrations and management.

> UP THE CHAIN

• Global philanthropy company **Good360** named **Susan Brownell** as the newest addition to its board of directors. Brownell is an experienced supply chain executive, with a 34-year federal career in the Department of the Navy and the U.S. Postal Service, where she oversaw billions of dollars of inventory. She will help utilize more than 100,000 diverse nonprofit partners and socially responsible companies.

• Seattle-based outdoor retailer **REI Co-op** hired **Cameron Janes** as its new senior vice president and first-ever chief commercial officer to help create a seamless physical and digital experience. Janes previously served more than 14 years at Amazon, most recently as a vice president working on the company's physical retail stores.

> MILESTONES

Georgia-Pacific, a manufacturer and distributor of consumer packaged goods, is the first company to perform autonomous yard operations in a production environment. Autonomous yard operations provider **Outrider** completed 1,000 autonomous, zero-emission trailer moves at Georgia-Pacific's Chicago distribution center.



On-demand transportation management system and freight audit solution provider **Fortigo Collaborative Logistics** celebrates its 20th anniversary. Founded by George Kontoravdis in 2001, the company provides on-demand decision-making opportunities for optimal supply chain execution on behalf of large, multinational enterprises operating with unique logistics requirements.

[IN FOCUS]

TAKEAWAYS

Shaping the Future of the Global Supply Chain



THINGS GO BETTER WITH BULK

Due to shortages delaying and even halting transportation, big brands get creative to keep their product and materials moving. For example, Coca-Cola now transports materials in bulk shipping vessels, which are typically used for raw materials such as grain and coal.

The beverage company chose the bulk carriers because it could not access containers and cargo space, the company says. Coca-Cola currently uses three of these ships to transport its manufacturing materials.

Other retailers, such as Costco and Target, have chartered their own cargo ships to combat supply chain issues, but ports are still backed up due to the ongoing labor shortage and increasing number of ships back on the ocean. Coca-Cola is attempting to avoid major ports to prevent delays, the company says.

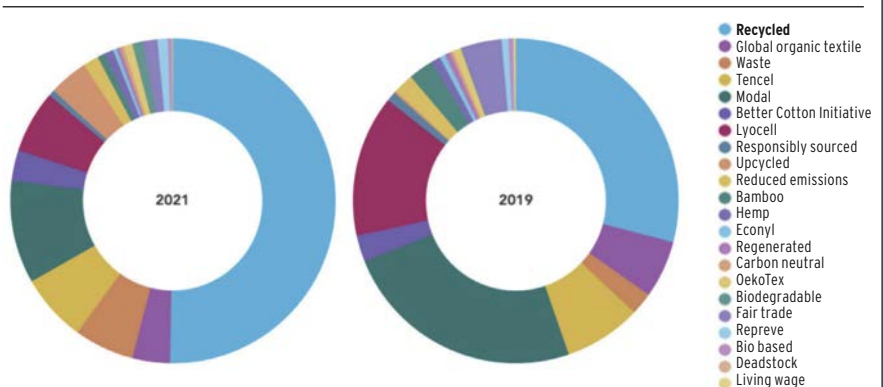
In September 2021, Coca-Cola's New York distributor said it was having a hard time recruiting truckers, further disrupting the supply chain. Other goods such as paper, computer chips, and plastic goods are also in short supply amid the delays.

Latest Fashion Trend? Sustainability

Sustainability is more important than ever as fashion supply chains become more environmentally conscious, says a report from intelligence platform Edited. The biggest shift has been the number of products labeled “recycled” or “containing recycled materials” (see chart), which now account for 51% of sustainable products versus 29% in 2019. Highlights from the report reveal:

- **Move away from cotton.** The fashion supply chain's overreliance on cotton has led to environmental impacts with natural resources at stake. Retailers must look beyond conventional materials to create more responsible garments. Products containing Better Cotton Initiative cotton have increased 190% in the United States compared to 2019.
- **Repurpose unsold inventory.** This will be critical in managing waste amid post-pandemic purchasing and discarding. With backing from Gen Z, the secondhand market is predicted to be valued at \$64 billion by 2024.
- **Look beyond apparel.** Working from home has led to upgraded home spaces, with 97% of consumers interested in buying environmentally friendly home furnishings. If the cost and style were comparable, 87% of respondents would be willing to pay more, creating visible demand for sustainable products across every retail category.
- **Education is imperative.** To encourage consumers to dispose of clothing with the planet in mind, retailers need to provide education and incentives to recycle or return used goods to improve circularity. 72% of U.S. consumers are aware of environmental issues in fashion, but 42% are confused about what makes a garment sustainable.
- **Tighten sustainability timelines.** What companies do in the next five to 10 years will be critical. To achieve net-zero emissions, retailers need to revamp their processes at every point in the value chain, not just offset emissions.

Keywords Used on Sustainable Product Labels 2021 vs. 2019



Old Processes Impede New Inventory Strategies

Few businesses use new technologies to tackle supply chain issues caused by the pandemic due to tighter costs and dependence on legacy work processes, says a recent survey from intelligence platform Verusen. This results in lost revenue and increased inventory costs.

Global supply chain executives responding to the survey cite poor data quality, siloed materials data, and legacy software systems as the main causes of poor materials management and supply chain planning. The report reveals:

- **43%** of executives say they intentionally inflate their inventories to protect against further disruptions, raising their cost structures.
- **90%** are focused on cost reduction and **75%** are focused on operational risk reduction as their top procurement and sourcing strategies; however, these areas often conflict with one another.



- **65%** of businesses' materials management strategies haven't changed since the beginning of the pandemic.
- **42%** of executives say a one-off data cleanse project is still the leading approach to improving their data.
- **37%** say they still use common tools, such as manual spreadsheets, to optimize materials management.
- **65%** cite a lack of resources as the greatest barrier to digitizing materials management.
- **81%** of respondents incorrectly believe it would take more than one year to implement an artificial intelligence-driven materials management solution.



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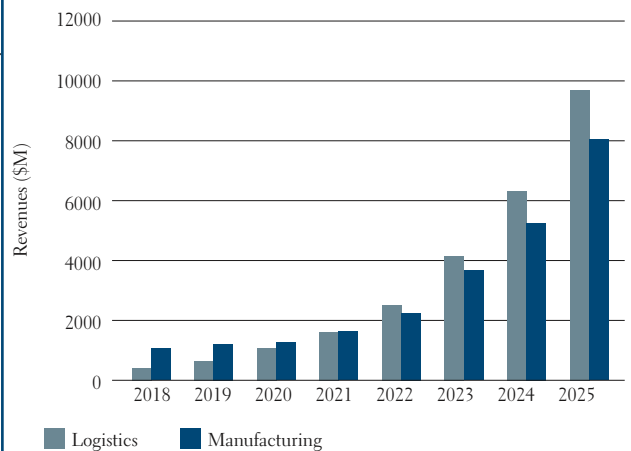
Lots of Bots: Mobile Robot Market Grows

Mobile robot revenues and shipments increased by more than 25% in 2020 compared to 2019, despite project delays resulting from the pandemic, according to research from market intelligence firm Interact Analysis. The firm forecasts robust and exponential growth, despite lower short-term projections, with 2.1 million mobile robots due to ship by the end of 2025 (see *chart*).

At the end of 2020, more than 9,000 separate customer sites, mainly warehouses and factories, had deployed mobile robots. This will increase to more than 53,000 deployments by the end of 2021, Interact Analysis says.

Growth in autonomous mobile robots was significantly higher than autonomous guided vehicles, which faced greater delays and cancellation rates due to its tendency to

MOBILE ROBOT REVENUES SET TO INCREASE



Source: Interact Analysis

be more expensive and less scalable, as well as take longer to install.

In 2020, autonomous guided vehicles accounted for more than half of all mobile robot revenues. However, by 2025, autonomous mobile robot revenues will dwarf that, partly due to the greater diversity of applications, the report says.

A partnership of trust and transparency.

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

Because when we make a promise, we deliver.



Fixing Supply Chains While Still Making Money

By taking the following three steps, business leaders can help their supply chains shift from contributing to disruption, climate change, and employee fatigue to improving today's most pressing issues while maintaining profits, Gartner says:

1. Pivot to Sustainable Profit

Focus on the longevity of profit and make changes that allow your organization to conduct business successfully into the future. Supply chains must cope with the rising rate of disruption, such as global chokepoints and shortages in materials

TAKEAWAYS

and workers. Adapt to new realities to deliver profit in the long term, and account for external consequences that may affect other parties, such as air and soil quality.

2. Make Purpose Personal

Today's professionals want to do meaningful work and help organizations do the right thing. However, they don't want to burn out. Leaders must make clear the connections between their hard work and the company's objectives to create a shared purpose, which has a clear business payoff. Businesses see a 26% increase in workforce health when work is personally relevant to an employee and a 50% improvement in employee engagement when a company takes action on social issues.

3. Build Value-Aligned Ecosystems

A value-aligned ecosystem is a network of equal partners where all participants exchange their capabilities. They differ from today's supplier ecosystems in that there's no dominant entity. Ecosystems will become the prime competitive entity in the future. Today's main drivers of ecosystem partnerships are efficiency and service; however, in three years the main drivers will be innovation and purpose.



An American Tradition in Transportation

— IN GOD WE TRUST —

Balancing Just-in-Time with Just-in-Case

Supply chain leaders must adjust their inventory management strategies, balancing the Lean efficiencies of Just-in-Time with the higher inventory levels of Just-in-Case.

Supply chain best practices have trended toward Lean inventory and production models for decades. The basis of modern Lean practices began with the development of the Toyota Production System in the mid-20th century, with one of the premier concepts of this model being a practice called “Just-in-Time.”

In a Just-in-Time production model, all parts and components used to produce a finished good arrive “just in time” for use on the assembly line.

Under Just-in-Time, manufacturers reduced costs associated with held inventory. This practice spread to retailers and distributors, who implemented Just-in-Time inventory management based on sales projections and forecasts to ensure finished goods would only sit briefly in warehouses.

Over the past decade, Just-in-Time capabilities have been streamlined further thanks to advances in technologies like artificial intelligence and machine learning until every link in the supply chain learned how to carry as little inventory as possible. Then, a pandemic took the world by surprise.

Creating New Best Practices, Just in Case

As outbreaks of COVID-19 shut down production worldwide, businesses realized the flaws in Lean inventory.

Manufacturers couldn’t access raw materials from suppliers, who then couldn’t deliver parts and components to their original equipment manufacturer (OEM) customers.



As a result, OEMs couldn’t produce finished goods to sell to retailers, and retailers couldn’t restock their shelves.

Though COVID-19 recovery efforts are ongoing, supply chain leaders around the world have recognized the need for a better balance between efficiency and cost. Businesses are transitioning from Just-in-Time to what has become known as a “Just-in-Case” strategy. Just-in-Case refers to the practice of holding larger amounts of “safety” stock, enabling a company to avoid stockouts.

What Will a Post-Pandemic Inventory Strategy Look Like?

Spending a little more to hold extra safety stock in a warehouse is now considered justifiable if it will mitigate the next supply disruption that comes along.

Though C-suite executives and supply chain leaders have demonstrated a willingness to spend more on supply chain strategies that will mitigate disruption, a literal implementation of Just-in-Case inventory practices is not financially sustainable for most organizations.

As a compromise, a good post-pandemic inventory strategy will need:

- **Multi-sourcing.** Procurement teams learned early in the pandemic that having a single provider for a particular widget, material, or finished product created opportunities for disruption.

Moving forward, procurement leaders will establish multiple sources for everything. Ideally, each redundant supplier will be located in a different region.

- **Regionalization.** An ocean between suppliers and customer markets proved less than ideal for U.S. retailers and other businesses, who now understand the importance of shortening the supply chain. Updated inventory strategies will seek to source goods domestically and from nearshore locations to avoid disruptions.

- **Safety stock.** Businesses are still trying to calculate appropriate inventory levels to carry. Filling a warehouse with years of inventory isn’t feasible. Neither is running out of inventory after a disruptive week in the supply chain.

Over the next several years, supply chain, logistics, and procurement leaders will need to establish new best practices regarding ideal safety stock percentages for their respective industries.

New inventory management strategies should balance the Lean efficiencies of Just-in-Time with the higher inventory levels proposed by Just-in-Case.

By making sacrifices on both ends of the spectrum, businesses will achieve some of the main benefits of each strategy.

.....
—By Robert Kriewaldt



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Making Decisions and Adapting Warehouse Operations with WMS + MES



Ann Yates
Presales Engineer
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www.generixgroup.com/en-na

Q How does adaptability in warehouse operations allow for a quick response to consumption changes?

A In the past two years the way consumers shop has changed. We witnessed 10 years' worth of e-commerce growth in 3 months. It also caused a drastic change in consumption patterns where some products saw a 75-85% increase in demand, while others saw a drop. This means suppliers must adapt to unexpected fluctuations in demand and still meet customers' expectations in terms of service quality.

What this means for warehouse processes is a greater than usual need for adaptability. Processes responding to variable needs can no longer be uniform or one-size-fits-all. Agile systems capable of adapting to change quickly must be implemented. More specifically, the warehouse must be fitted with technology allowing it to instantly execute any type of process that a change in demand might suddenly require.

Q How can visibility concerns be addressed thanks to a WMS?

A Process visibility goes a long way towards building resiliency. SOLOCHAIN provides dashboards containing the data required and presents it through visual, intuitive, and easily interpretable charts.

Having this sort of visibility over operations allows managers to improve their decision-making speed and quality. Having predictive data allows leaders to prepare for the recurring or unexpected events taking place in a

warehouse. An example is the time required to complete a certain task. Knowing the time required ahead of time means being able to plan accordingly before the alerts go off.

The dashboards essentially enable managers to be proactive versus reactive when it comes to warehouse operations.

Q How does the desire for reshoring relate to the benefits of MES-WMS integration?

A It used to be cost-effective to produce offshore, but recent events have put a strain on the supply chain, which in turn made reshoring seem like the most efficient option for 2/3 manufacturers. Aside from the pandemic's stress, the will to avoid risks related to quality also motivates some to reshore.

In this context, a close relationship between manufacturing and warehouse processes is necessary. In this crisis, efficiency means survival and having MES and WMS united allows for continuity of operational processes which in turn reduces errors. Unity of the systems maximizes production efficiency by issuing the right materials to the right place at the right time.

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Choose a 3PL with a Culture and Vision that Match Your Own



Marty Wadle
Chief Commercial Officer
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Transportation has often been considered a commodity. Equipment, fuel, software, and wages are all very similar from a cost perspective. A 3PL's culture can be a competitive advantage.

Q Why does culture matter?

A Today, cost is just one of many factors to consider when selecting a 3PL. A low-cost provider may produce short-term savings but will not deliver sustainable efficiencies and the level of service shippers expect. Strategic partnerships that are mutually beneficial stand the test of time and drive waste out of shippers' supply chains.

An organization's culture is critically important to attracting talent, creating partnerships, and sustaining outstanding performance.

Q How does cultural alignment produce results?

A Shippers are looking for long-term strategic partners that are culturally aligned. When company cultures mesh, it is difficult to determine if the 3PL team member works for the shipper or the provider. Trusting a 3PL to manage all or a portion of your supply chain is a big decision—and selecting the right culturally aligned partner makes all the difference.

A 3PL's team members who are empowered to take actions that positively impact a shipper's supply chain stay engaged in the improvement process.

The strategic shipper-3PL relationship is strengthened whenever value is created by providing proactive notification of a late load,

producing savings by combining LTL orders into a multi-stop truckload, or eliminating empty miles with a backhaul.

Q Is a cultural connection enough to sustain a business partnership?

A Culture alone won't sustain a shipper-3PL relationship. But having a culture focused on continuous improvement along with the right people, processes, and technology is a formula for success. A flexible 3PL will customize transportation management system (TMS) software to meet the needs of each shipper partner by understanding the intricacies of their unique freight.

Implementing a TMS as a shipper can be very time consuming and costly, and there is no guarantee the software will produce expected results. Shippers often don't have in-house expertise and may depend on third-party integrators for future configuration changes and upgrades. The right 3PL has a team solely focused on implementation and integration yet closely aligned with operations.

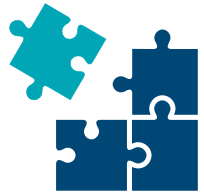
A TMS is a requirement for all 3PLs, but does the 3PL provider bring value with the right people, processes, and platform behind the software?

Find a 3PL that has a culture and vision that match your own. If you are successful at that, you will have a long and mutually beneficial partnership.

Ruan has supply chain expertise in every industry—and the right people, processes, and technology to meet your logistics management needs.

Supply Chain Challenge?

SOLVED



What to Expect and How to Prepare for Peak Season

Expect a longer and more unpredictable peak season. Here's how companies can get their logistics operations prepared for what's to come.

THE CHALLENGE

Peak season 2021 is shaping up to be especially challenging, as shippers are already dealing with tight capacity and other market-wide complications. Shippers whose volumes may not increase at this time of year will still be impacted, as strong demand for shipping from other companies can lead to higher rates and limited capacity.

Historically, peak season occurs from August to November every year; this year, peak season has the potential to last even longer than normal and have an even greater impact on shippers due to unique market dynamics.

While transportation networks have been strained over the past year due to the impact of the pandemic, peak season will likely spark even more freight shipping activity as more people get vaccinated, businesses fully reopen, and parts of the economy return to pre-pandemic levels. Closely following market trends and adjusting transportation plans if necessary will enable businesses to create a successful shipping strategy this peak season.

Because of the effects of the pandemic, there has been high demand for freight transportation, resulting in a continued tight capacity market. In fact, some carriers have had to cut back on servicing select shippers in order to maintain optimal service levels.

The tight market is causing many shippers to compete for space from carriers. As a result, carriers may increase



rates on top of the premiums and surcharges many have already added.

THE SOLUTION

Working toward becoming a shipper of choice—a company that carriers want to work with because they create a positive and valuable partnership—should be a priority right now for every company. For tips on building strong relationships with carriers, read our shipper of choice white paper at www.echo.com/resources/white-papers.

During peak season, shippers can also expect increased transit times and more delays that could hurt on-time delivery performance. Shippers can mitigate these issues by shipping freight as early as possible, building flexibility into a shipment's delivery date, factoring in the extra lead time it may take to source trucks, and exploring alternate shipping solutions.

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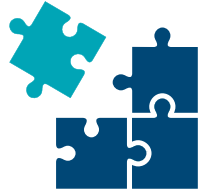
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Supply Chain Challenge?

SOLVED



Logistics Management & Chain of Custody: Securing IT Assets

Proper logistics management can be one of the most critical aspects of a successful ITAD program.



THE CHALLENGE

One critical, yet often overlooked aspect of an IT asset disposition (ITAD) program, are the logistics involved in getting the assets from their current location to the processing facility in a secure and cost-effective manner.

Without a managed program, companies may overpay for logistics—and worse—they risk facing a security breach if the assets are lost or stolen during transit. A professionally managed program assesses where the assets are, where they need to go, the number and type of assets being collected, and what data security measures need to be performed.

THE SOLUTION

Ingram Micro Commerce & Lifecycle Services offers ITAD solutions that include complete logistics management and are trusted by major organizations across the globe. Our team works closely with clients to ensure they receive the services that meet their needs.

- Our ITAD solutions include:
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 - 28 ITAD and reverse logistics processing centers across 14 countries
 - 9 logistics service centers in the United States (making transportation

- costs more affordable for clients)
- Dedicated Ingram Micro trucks for U.S. asset pick-ups
- Trusted 3PL partnerships to enhance our services
- Box Program for collecting assets from remote locations
- Secure locked shipping cases and gaylords
- Secure chain-of-custody services
- Onsite data destruction services

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Assets are most vulnerable to theft before they leave an organization's facility. The second most vulnerable time is during transit, so we have specific controls in place to ensure safe transport.

Transportation controls include:

- GPS tracking and constant driver contact through company-issued smartphones
- Cargo areas that remain padlocked (except during active loading)
- Cameras installed on our trucks and numbered seals to ensure cargo areas have not been entered between the time the vehicle is secured and when it is officially received at the processing facility
- Onsite data erasure and/or onsite hard drive and media shredding services for organizations that choose enhanced security through onsite data destruction

Asset security isn't just about physical movement of goods or process controls.

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All our associates pass criminal, professional, and educational background checks prior to employment. They also undergo alcohol/drug testing, and drivers take a motor vehicle record test. Post-hiring, we monitor our employees and conduct additional tests as needed.

Physical security measures are another way to protect assets. Facility security measures include:

- Badge-controlled access
- Walk-through and/or wand metal detectors
- Facility-wide CCTV systems with 24/7 monitoring
- Central security alarm systems

LOOKING AHEAD

As more data-bearing devices continue to be used and circulated and as the importance of data security continues to grow, ITAD services are increasingly important.

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[INSIGHT]

CYBERSECURITY

by Mark Johnson

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Four Steps to Building Cyber-Resiliency

Cyber-exploitation through contractor networks is becoming more prevalent. Cyber-insecure suppliers and contractors provide covert backdoor access to more prominent corporations.

Fifty-six percent of organizations have experienced a cybersecurity breach caused by a third-party supplier, finds the Ponemon Institute. While companies aren't obliged to comply to specific data breach or legal regulations, the reputational damage resulting from an incident is significant. Further, an organization's customers are at increased risk from hackers seeking to exploit the breach.

The NotPetya ransomware cyberattacks in June 2017 prove companies of all sizes are at risk. The weak link in this cyberattack was a supply chain partner—resulting in 50,000 infected endpoint systems and hundreds of infiltrated servers and applications across 600 work sites in 130 countries.

Constant cybersecurity management for both the organization and its supply chain partners is critical. Here are four steps to building cyber-resiliency into supply chains.

1. Determine levels of security based on employee roles. Define reasonable levels of security for vendors, subcontractors, and supply chain partners first by identifying and categorizing contractors who either have direct access

to the internal network or access to critical enterprise data. Separating vendors and contractors according to their functional role can help:

- Determine the type of information these partners have access to and how they are connected to the company's framework.
- Assign specific service level agreements for contractors.
- Enforce cybersecurity standards across the entire supplier ecosystem.
- Understand appropriate data-ownership, data-sharing protocol, and acceptable use of that data.

2. Conduct vendor risk assessment and prequalification. An organization can take every preventive measure to ensure its data and network are secure, but how can it confirm third-party partners do the same? Vendor risk assessment and prequalification allow companies to monitor their partners' security postures and confirm they uphold the cybersecurity obligations outlined in their contracts. Regular supplier audits pinpoint what cybersecurity monitoring and controls a partner might require.

Subcontractor and supplier risk management software offers supplier auditing services and objective supplier

evaluation to provide an accurate view of vendor cybersecurity risks. This software can review supplier policies and procedures to ensure they are adequately codified, certified, and validated. Relevant indicators can tip off organizations to manage risk.

3. Monitor vendor access to network and data. Establishing limited network access for key vendors, contractors, and suppliers can further strengthen security posture. A consistent approach is necessary to control network access for vendors and contractors. Regularly monitor and audit access points to identify areas of weakness and ensure accurate mechanisms of access, management, security, monitoring and auditing are in place.

4. Train every employee. Employees are the last line of defense in cybersecurity and one of the most common threats. Create a culture of cyber-risk awareness to protect your organization and prevent threat events. Engage every employee, especially third-party vendors.

The first two steps in achieving cyber-resilience are drafting clear policies and training employees, contractors, vendors and suppliers. Make cybersecurity a priority for vendors by requiring training before work can start.

Companies need to fully understand the cyber-vulnerabilities within newly forged digital ecosystems, customize control measures, and collaborate with partners to mitigate these risks. ■

HAPPY *Holidays*



This holiday season, Polaris Transportation Group would like to thank all fellow industry members as well as our own drivers, staff and partners, for their unwavering commitment to keeping freight moving. Over the past 20 months, the compassion and support for one another as essential service providers has helped us navigate challenging times together – bringing the shipping community closer than ever.

From our Polaris family, we wish everyone a safe, happy holiday season and a wonderful 2022.



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[INSIGHT]

SCDISRUPTION

by Paul Schoebrechts

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Sideways Ships and Missing Chips: Overcoming E-Bike Blockages

Most businesses were impacted by the pandemic and the e-bike supply chain was no exception.

E-bikes are manufactured across Asia—the frames in China and other crucial parts in Japan—while assembly takes place in Taiwan. When the coronavirus first hit Asia, production lines ceased operations.

Meanwhile in the western world, it was business as usual. Bike orders continued to boom and simultaneously the biggest backlog in e-bike history formed. Demand overtook supply, and the business needed to adapt to manage it.

For us, the answer was tapping into our rich network of suppliers to identify both opportunities and gaps, and pinpoint how to come together to overcome the backlog. The key was understanding the power of the product, and not letting down customers who were ready to experience the benefits of e-bikes.

In one instance, a grocery delivery customer needed bikes urgently and we were simply out of stock. Our response was to contact our competitors and source bikes for that specific customer to show them we were dedicated to their success.

As the adage goes, when it rains it pours. As we were navigating the supply

chain complexities of COVID-19, a new issue arose: a lack of shipping containers.

The global shipping container shortage, first caused by COVID-19 and then exacerbated by the Chinese New Year in February 2021, meant that we, like many other businesses, struggled to get our stock and parts shipped.

BRACE YOURSELF

Adding to this, shipping container costs are up to 500% higher than usual, causing disruption to business momentum. While high shipping costs are unlikely to remain long-term, as a growing business we need to brace ourselves for a tough freight landscape. We see freight costs being passed down across the supply chain to us in the form of a component price increase, which will eventually trickle down to the consumer.

In uncertain times, these kinds of supply chain conundrums can impose tricky risk-rewards, but we were confident that we could ride the trend and work with our customers closely to manage demand and lock in supply as much ahead of time as possible.

By acknowledging the necessary costs and continuing business momentum we were able to remain on time and flexible, two critical components in our business.

The ubiquitous rise of technology has also facilitated the simultaneous and equally ubiquitous rise in microchips. This global demand is causing major headaches.

In early 2021, the average lead time on a microchip stretched to 15 weeks as a result of high demand and low capacity. As e-bikes are literally computing power on wheels, this microchip shortage impacts manufacturing timelines and bike availability.

We can summarize the key to navigating supply chain challenges in one word—planning. We can't control supply scarcity. But we can forecast into the future. For the microchip shortage specifically, this has included committing to our suppliers in advance through early orders to allow them to secure material.

Additionally, we continue to openly discuss back-up plans with our suppliers, such as opting for an alternative component that is more readily available.

The global supply chain can be finicky, but it has allowed us to build resilience, plan for the best and prepare for the worst. ■

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[INSIGHT]

SCRESILIENCY

by Jason Murray

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Early Amazon Story Explains How to Create Resiliency

Early in Amazon's history there is a famous story about a renegotiation of its UPS contract. It is one of the first examples of Amazon realizing its scale and utilizing and leveraging it for growth.

At the time, Amazon used UPS almost exclusively for deliveries. But because UPS was the only carrier we leaned on, they priced accordingly knowing we had little alternative.

As we neared the annual renegotiation talks, we knew that in order to secure better rates, we had to become less dependent upon a single carrier. We had to become more resilient. For several months, the team was directed to rebuild its outbound shipping technology stack to allow for dynamic carrier selection and manual switching, like a figurative train track switch. That technology hadn't previously existed because there was no need for it if only using one carrier.

With the technology built, the story goes that the team was directed on an early December day to switch all shipments to go through our new carrier contract, USPS. UPS was to receive no packages for that date.

UPS was alarmed. Their systems went off, bells buzzed, alerts scaled all the way up the ladder until eventually a UPS executive called and asked if Amazon was

having technical problems. The reply was a simple, "Nope, just using other carriers to handle volumes you believed we couldn't shift away from UPS. See you at the negotiations next week. *click*"

That's a powerful story, but the powerful insight is not in the negotiation theater that played out.

In truth, the real value created through this exercise was greater resiliency added into this specific part of Amazon's supply chain. By reshaping technology to support multiple delivery partners, we ensured a system with fewer late deliveries, better customer experience, and minimal system downtime or bottlenecks. The added resiliency improving performance year-over-year was a bigger reason for Amazon's early growth than the renegotiated UPS rates for that year.

One of the best ways to add resiliency to your supply chain is to diversify optionality. Vendors, sources, contracts, technology components—look up and down your supply chain and identify single points of failure, then think through how to diversify your options.

By reshaping technology to support multiple delivery partners, Amazon ensured a system with fewer late deliveries, better customer experience, and minimal system downtime or bottlenecks.

This isn't necessarily a new or novel idea. The COVID-19 pandemic starting in early 2020 forced every commerce company to re-examine upstream dependencies, like manufacturers or component distributors. I'm still waiting for a new bike I ordered last summer because the manufacturer is delayed getting a certain type of screw from their suppliers.

No, instead the new and novel idea is to understand that diversification and optionality all the way down to eventual order delivery is critical for optimization and margin growth. More importantly, it's critical to customer experiences and expectations.

Take a moment today to think through which downstream parts of your supply chain are not diversified. You might be surprised which junctures are causing bigger problems than you realize. ■



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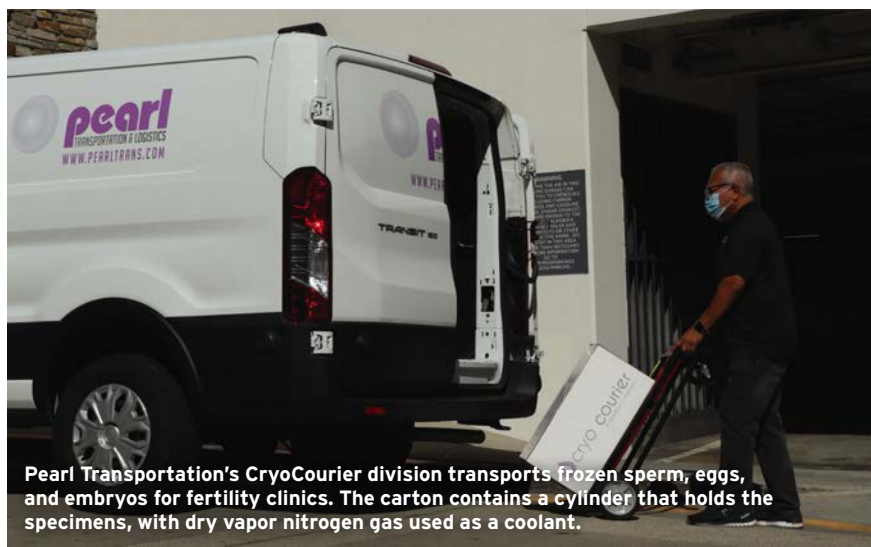
KEEP YOUR COOL

For some products, a few degrees more or less can spell the difference between successful delivery and catastrophic spoilage.

By Merrill Douglas

Items that need to stay cold throughout the supply chain range from the large—say, a containerload of fish—to something as tiny as human sperm. Some commodities travel safely when kept at temperatures you'd find in your kitchen fridge, while others require a deep freeze. Each relies on special technology to maintain the right conditions from door to door.

Let's take a look at how shippers keep the cold chain intact for a few specific kinds of cargo.



Pearl Transportation's CryoCourier division transports frozen sperm, eggs, and embryos for fertility clinics. The carton contains a cylinder that holds the specimens, with dry vapor nitrogen gas used as a coolant.

THE HUMAN FACTOR

When someone is going through in vitro fertilization, and decides to transfer treatment from one fertility clinic to another, they might call on Los Angeles-based Pearl Transportation and Logistics to move frozen sperm, eggs, and/or embryos to the new location.

Pearl Transportation handles many types of human materials—such as blood, urine, and stool samples—bound for diagnostic labs. It launched its CryoCourier subdivision in 2020 to serve the special needs of fertility clinics.

Frozen sperm, eggs, and embryos must maintain a temperature of -165°C , says Lorena Camargo, CEO of Pearl Transportation. When it's time to transport them, a professional at the origin deposits the specimens, housed in special straws, into a tank that uses dry vapor nitrogen as a coolant.

CryoCourier uses the dry vapor form rather than liquid nitrogen to avoid spills if the tank should tip en route. That's not likely to happen. "Our drivers are trained, and there's a certain way to

transport these tanks," Camargo says. But the dry vapor offers an extra level of safety during transport.

"With the tanks that we use, the temperature can be held up to 72 hours," says Camargo. That keeps the human materials safe whether they're bound across town or flying across the country.

"We do weekly shipments to Boston and New York," she says. "Those trips usually take 12 to 18 hours. We try to put them on direct flights to reduce that transit time." But tanks that maintain the deep freeze for 72 hours provide insurance against potential delays.

Each tank comes with a temperature monitoring system that transmits data via Bluetooth to the van driver's phone. CryoCourier accesses this data via a web portal to make sure the temperature remains correct throughout the trip. A GPS tracker maintains a log of the route.

Human specimens for diagnostics don't need the same deep freeze that fertility specimens require, but each one needs to be kept at a specific temperature on its journey to the testing lab.

One recent innovation for that purpose is a three-compartment cooler that lets drivers transport three different types of human specimen. "They could carry up to three different temperatures, because each compartment has its own tracker," Camargo says. In each compartment, the company could put dry ice, gel packs, or anything else required to keep specimens in the right condition.

Human blood used in emergency response also requires special controls.

BLOOD BROTHERS

While Peli BioThermal in Maple Grove, Minnesota, provides temperature-controlled packaging largely for pharmaceuticals, it got its start in the early 2000s with packaging the U.S. military used to deliver blood to Special Forces units in the field. It makes a similar product for emergency medical services to transport blood by ambulance or medical helicopter.

Blood is probably the most temperature-sensitive product transported in Peli BioThermal's packaging, says Adam Tetz, director of worldwide marketing. Blood needs to stay at between -2°C and -8°C . "If it goes out of range, it isn't usable on an injured person," he says.

The company's packaging uses a coolant made of paraffin and other materials, which releases thermal energy as it changes from solid to liquid. Placed in an insulated compartment, this phase change material (PCM) can keep blood or other human products at the optimal temperature for two to three days.

Before they're used, the PCMs in Peli BioThermal's flagship products must be cooled in special refrigerators for several days. But another solution in the company's product line, NanoCool, uses a simpler process.

"Users push a button, which pierces a water bladder inside the cooling engine," Tetz explains. "Then with a thin capillary of tubing, water goes to a desiccant, and that causes an evaporative reaction, which cools the payload space."

Customers use NanoCool mainly to transport medical specimens or blood used in CAR-T cell therapy.



Peli BioThermal's Credo ProMed carry bag can keep medical materials at the required temperature for up to 72 hours.

VACCINES ON ICE

In the race to distribute COVID-19 vaccines, the pharmaceutical industry contends with an extra challenge that would not arise if time were not of the essence: Some of the materials used to maintain the cold chain pose potential safety hazards on aircraft.

One of those materials is dry ice, which expands in volume by 600% as

the carbon dioxide changes from solid to gas. "That gas can displace oxygen," explains Jay Johnson, senior master, Labelmaster Services.

Since that could pose a suffocation hazard in an aircraft's closed environment, regulatory bodies limit the use of dry ice in air cargo.

Shippers can't avert this hazard simply by transporting vaccines and dry ice in

packaging that doesn't let gas escape. "You can't put dry ice in a non-vented container, because it tends to explode," Johnson says.

Labelmaster makes packaging that pharmaceutical companies have used to maintain the cold chain while transporting COVID vaccines, Johnson says. Beyond that, the company has also represented pharma companies before regulatory bodies, successfully arguing that the air industry could safely increase the amount of dry ice allowed on a plane.

Systems that shippers use to monitor the temperature of vaccines in transit also pose a challenge, since many of them use lithium ion batteries, which are considered hazardous goods, forbidden in the belly of a passenger plane.

Some manufacturers are looking to older technology as a workaround. "I had an hour-long conversation with a temperature data logger manufacturer, because they were having problems with lithium batteries," Johnson says. "They've gone back to the smaller-charge alkaline batteries to power some of their devices so they don't get bound up in some of the dangerous goods restrictions."

RUN FOR THE ROSES

The fourth quarter of 2021 left flower importers with many questions about how to bring in product for that crucial day on their calendar: Valentine's Day.

With 90% of flowers imported to the United States—mainly from South America—arriving by air, flower wholesalers and retailers don't face the same anguish as companies that rely on the brutally congested Asia-to-U.S. ocean pipeline. But air cargo space is also tight these days, says Christine Boldt, executive vice president at the Association of Floral Importers in Doral, Florida.

And ocean transport plays a bigger role in the flower trade than it used to, especially in the weeks leading up to Valentine's Day. That's when importers bulk up their inventories, and it gets harder to find temperature-controlled warehouse space. "As refrigerated facilities become less available, it makes the most sense to have the product in a refrigerated environment from the country of origin to the United States," Boldt says.



Cut flowers last a good long time when they're kept cold. Refrigerated ocean containers meet that need. And, as of fall 2021, the main flower ports, Miami and Port Everglades, were congestion-free, Boldt says.

When February comes, will it still be smooth sailing for long-stemmed roses? Will there be enough refrigerated ocean containers to meet demand? Will shippers who rely on air secure the cargo space they need? And once the flowers get to South Florida, will shippers find enough reefer trucks to speed them to market?

Whatever the questions, one thing is certain: Importers will get their flowers to consumers in time for the holiday. "Whether it's chartering extra planes or bringing product in earlier, whatever is necessary, importers will do it," Boldt says.

Refrigeration manufacturer Klinge Corp., in York, Pennsylvania, counts the pharmaceutical industry as one of its major markets. Company president Allan Klinge speculates that in the future, air could play a smaller role in transporting COVID vaccines.

“There will come a point when it will be a more normalized cold chain, where there will need to be deliveries all over the world,” he says.

That includes places that don’t have good facilities for air cargo, or that can’t afford air transportation. Then, ocean transportation using refrigerated containers can provide an alternative.

Some COVID vaccines must be kept at -60°C or even lower. But not all vaccines require extreme cold. For immunizations whose ideal temperature is -7°C, one new product available for maintaining the cold chain is the Vaccine Freezer Monitor (VFM) -7°C from Timestrip in Cambridge, UK.

When preparing to transport a set of frozen vaccine vials, the user starts the VFM temperature indicator by pressing a button on the back. The monitor then goes inside the packaging along with the vaccine vials. If the temperature rises above -7°C at any time, the indicator shows an alert.

CATCH OF THE DAY

Both fresh and frozen seafood require careful temperature control.

“The lifespan of fresh product begins to diminish the moment it’s caught, so it’s important that it move quickly via air or truck and have temperatures maintained at precise levels throughout the journey,” says Alex McKallor, executive vice president and chief operating officer at Lynden Inc., based in Anchorage, Alaska and Seattle. Not only shouldn’t fresh seafood get too warm, but it also shouldn’t get too cold, lest it freeze and no longer command a premium price.

Frozen products require similar management, but since they are less time sensitive, they can move by ship or barge as well as truck or be kept in a

refrigerated warehouse, McKallor says.

As a transportation and logistics company, Lynden serves all segments of the seafood supply chain, using multiple modes. “For example, our Hercules aircraft fly freshly caught seafood from King Salmon, Dillingham, and other areas of western Alaska to Anchorage, and we use barges to transport less time sensitive products,” McKallor says.

Lynden uses refrigerated equipment to transport seafood and also uses ice, gel packs, and insulation blankets to preserve the cold chain. “It’s also important that good pallets are used to help ensure a free flow of air, so the temperature is maintained consistently throughout the entire unit,” McKallor says.

Refrigeration mechanics ride with cargo on barges, in case of a breakdown. The company also uses advanced technologies to keep an eye on seafood moving by air, water, or ground.

“Monitoring capabilities include the ability to receive alert messages should a refrigeration unit fail to maintain the required temperature, enabling corrective action to be taken immediately,” McKallor says.

Lynden can adjust refrigeration temperature remotely, and can download data from refrigerated units to provide a full audit of the seafood’s journey.

Seafood is another market for which Klinge Corp. refrigeration and freezer

equipment is used both for shipping and storing. Some of its solutions are used to transport tuna that has been blast-frozen to -60°C to keep the meat firm and prevent browning.

“Taste tests have shown that you can’t tell the difference between tuna that has been frozen in this way and then thawed, and fresh tuna,” says Klinge. Companies save money when they ship deep-frozen tuna rather than fresh, since they can transport it by ocean in freezer containers rather than by air.

EXTRA PROTECTION

Klinge Corp. offers versions of its 20- and 40-foot deep freeze ocean containers that come with backup generators to provide extra protection in case of mechanical failure. The units also include monitoring systems that record temperature and, optionally, transmit an alarm if something goes wrong.

A monitoring system can be especially helpful when a container is handed off from the vessel to the port. “They’re using a loading and unloading plan, showing which containers need to be plugged in, and their set points,” Klinge says. “All that is transmitted between the two parties.”

But with so many containers moving on or off the vessel, there’s always a risk of error. “It can be very helpful to bring that visibility,” he says. ■



An Alaska Marine Lines barge, part of the Lynden family of companies, sails through Southeast Alaska loaded with refrigerated and dry containers. Lynden uses barges to transport both canned and temperature-controlled seafood, as well as the supplies and equipment needed by fishermen and processing plants.

IMPROVING CX: GOING THE EXTRAMILE



From e-commerce fulfillment strategies to warehouse layout to inventory approaches, here are the supply chain moves that go above and beyond to improve the customer experience.

By Karen Kroll

Like many manufacturers, Comfort Research, a provider of affordable, sustainable furniture under the Big Joe and Big Joe Lux brands, was briefly shut down in 2020. Then production restarted in June 2020. “By July, we couldn’t ship fast enough,” says Tuan Tran, supply chain director. He and his team boosted raw material orders from Asia, but bottlenecks at the ports and rails still meant some arrived later than expected.

Heading into 2021, Tran accelerated his purchasing schedule, estimating Comfort Research would receive its products in August and September. By July, however, limited U.S. rail capacity had produced another bottleneck, with some containers stuck at checkpoints for up to eight weeks.

Tuan worked with third-party logistics provider ODW Logistics to transload—transfer goods from one transportation mode to another en route to their ultimate destination—and ensure products made it to Comfort Research’s facilities in Grand Rapids, Michigan; Lewisburg, Tennessee; and Tremonton, Utah, on time.

“We were willing to pay a premium to ensure we’d have products to ship in the critical fourth quarter,” Tran says.

ODW had already established transloading relationships at many ports, due to its work with an auto company. “If we didn’t have those relationships, we couldn’t have created them so quickly,” says John Weber, vice president of transportation with ODW.

Tran and his team also worked with ODW to direct shipments from Asia to multiple ports, such as Seattle, Washington, and Savannah, Georgia, when possible. This minimized the likelihood they’d get ensnared in the delays at the Port of Los Angeles.

Shifting to Savannah and other Gulf Coast ports increased ocean costs but cut transloading costs for materials headed to the company’s Tennessee and Michigan locations.

These steps paid off. As of late October, Comfort Research had received about 85 of its orders, and expected the rest by mid-November. The company was well positioned to support fourth quarter demand.

SUPPLY CHAIN CHAOS

In late 2020 and early 2021, many supply chain challenges boiled over. “It became sheer and utter chaos,” says Ryan Frederickson, vice president of operations with Ruan, a provider of contract and managed transportation solutions.

A mix of factors was to blame, Frederickson says. Labor shortages, skyrocketing consumer demand, and the shift to e-commerce exacerbated congestion at ports and on the roads.

On top of this were several once-in-a-lifetime events, like the February 2021 freezes in Texas that crippled the power grid and closed roads. About one month later, the container ship *Ever Given* remained stuck in the Suez Canal, blocking traffic in that crucial shipping lane.

A range of strategies help shippers and logistics providers continue to fill customer orders accurately and on time. Many involve purchasing earlier and shifting transportation modes.

Flexibility has become key in managing through supply chain disruptions. Say a company finds out the parts it needs to run its assembly line will arrive late. “We have to adjust and reallocate assets and drivers to another requirement,” says Ron Gabbitas, vice president of operations for CEVA Logistics, a third-party logistics provider.

Most important, partnerships, collaboration, and communication, both internally and with business partners, have proven essential to tackling these challenges. “Collectively, we can come up with better ways to solve problems,” says Valerie Nissan, director of supply chain with HNI Corporation, the company behind office furniture brands like Hon and Allsteel.

MEETING THE HOLIDAY SURGE

Balsam Brands is the company behind Balsam Hill, a leading retailer of artificial Christmas trees and holiday décor. Its products are “like perishable goods,” says Michael Shaughnessy, senior vice president operations, supply chain and emerging markets with the company, which is co-headquartered in Redwood City, California, and Boise, Idaho.

Most customers, not surprisingly, order for the holidays. Along with meeting demand, Balsam Hill wants to minimize the cost of warehousing unsold goods until the next holiday season.

To that end, Balsam shifted from the typical process of moving a container from a ship to a chassis that’s driven to the warehouse and unloaded. Instead, it moves a container to a local facility, unloads it to a tractor/trailer, and then

STEPS TO IMPROVING THE CUSTOMER EXPERIENCE

The following tactics can help supply chain professionals meet customer demand, even when materials are limited and shipments are delayed.

Consider reserving some services, like last-minute shipping, for top customers.

This helps cement these customers' loyalty. It also can encourage less frequent buyers to increase their purchasing, says Juliana Prather, chief marketing officer with EDITED, a provider of market and enterprise data solutions.

Move diligently but quickly to implement technology.

Five to seven years ago, we "had to discuss with customers how automation could bring results," says Bas Van Steenoven, global director of marketing with Sparck Technologies, formerly Packaging by Quadient. Now, however, many understand that a solution can help and are more likely to begin testing. While the shift is a result partly of greater knowledge, it's also a result of tougher market conditions, which make technology investments more critical.

Boost forecast accuracy.

More accurate forecasts help logistics providers secure cargo space at contract rates, says Joe Kronenberger, senior vice president, air product and freight forwarding with GEODIS. Absent proper planning, it's increasingly necessary to pay market rates for immediate delivery, he adds.

Fine tune inventory planning.

Companies now can review, in close to real time and at the SKU level, the products they have in stock and those that are selling, and then determine how their assortment compares to their competitors. They often can gain an advantage by offering a larger or more tailored assortment, Prather says.

Accelerate the promotional calendar.

Launching marketing campaigns before the traditional dates, like Black Friday or Cyber Monday, can help ensure gifts and other items are delivered on time, says Mark Kapczynski, chief marketing officer with Gooten, which offers a solution that allows brands to leverage print-on-demand manufacturing.



Make greater use of regional carriers.

These firms can help alleviate the capacity constraints many major carriers are experiencing, says Patrick Lowe, area vice president of business management with PFS, an e-commerce fulfillment provider.

Consider drivers when optimizing routes.

It's generally most efficient to reduce the number of miles driven when generating transportation routes. However, Ryan Frederickson, vice president of operations with Ruan, points out this tactic won't work if the route is so long no driver wants to take it. Then, it may make sense to create two routes that together are, say, 20% longer than a single route, but can be split among two drivers. "It's about creating good schedules for drivers and finding the freight that complements that," he says.

Factor social media into inventory planning.

Along with sales and other data, social media can inform inventory planning decisions. EPAM Systems, a digital transformation services company, helped a retailer analyze customers' thoughts on various products by looking at social media and other marketplaces. This helped the business effectively allocate inventory and marketing efforts to different regions and demographics.

Consider nearshoring or reshoring for some suppliers.

While completely upending a global supply chain to produce locally may be more than many companies can feasibly do, especially in the short term, adding local or regional suppliers to handle a modest percent of business "gives a contingency," says Glenn Richey, Ph.D., chair of the supply chain management department at Auburn University. What's more, the smaller suppliers likely will be motivated to offer quality products and services so they can gain more business.

moves it to a warehouse. Although this means handling goods twice—generally less efficient than handling them once—it allows shipments to more quickly escape congested ports.

Balsam also has worked hard to communicate with customers. Its website provides information on product availability and shows products that would make similar replacements to those that are out of stock. “We’ve been very upfront with customers,” Shaughnessy says. “We want to make sure expectations are set and met.”

STRATEGY PROVES ITS WORTH

At The Chemours Company, a global chemistry firm, a supply chain strategy put in place in 2019 to enhance customer service “really paid off” during the pandemic, says Sandeep Dalvie, global supply chain director in the titanium technologies business.

For North American customers, Chemours’ dedicated trucking fleets meant that even during the pandemic, the company had an ample supply of trailers, drivers, and other equipment. “On high density routes, we could perform 99% on time,” Dalvie says.

On lower-density routes, Chemours uses non-dedicated carriers, which are more subject to current market reliability. However, if a situation becomes critical, Chemours can request help from its dedicated carriers. And non-contract Chemours customers can access an online portal that provides lead times, market changes, and other data, so they can make informed decisions and adjust operations as needed.

Strong partnerships internally are also key. A SWAT team with members from supply chain, finance, technology, and other functions regularly “meets to analyze and figure out a solution for dynamic or unplanned problems,” Dalvie says.

Say the pandemic forces a supplier to shut down. The team evaluates its production footprint to determine how it can change production plans and move raw material between plants to mitigate disruption. “This collaborative effort has served us very well during these challenging times,” he says.

“WE’VE BEEN VERY UPFRONT WITH CUSTOMERS. WE WANT TO MAKE SURE EXPECTATIONS ARE SET AND MET.”

*-MICHAEL SHAUGHNESSY,
SENIOR VP OPERATIONS, SUPPLY
CHAIN & EMERGING MARKETS,
BALSAM BRANDS*

For example, when access tightened to the temperature-controlled trucks needed to transport a specific raw material in a molten state, the SWAT team worked to shift the material to a flake form, which can be transported in regular trucks. The collaboration and communication helped Chemours “quickly make changes to be successful going forward,” Dalvie says.

BALANCING RESOURCES

Late in 2020 and flowing into 2021, HNI Corporation “hit a wave of demand,” Nissan says. At the same time, along with transportation delays, some raw materials, like those used in foam products, were in short supply.

To minimize the need to extend lead times, HNI began “breaking out all stops,” Nissan says. One step: it has been working even more closely with Ruan, its logistics partner, to forecast volume, taking an increasingly holistic and network view, Nissan says. So, if a distribution center in Georgia is heavy on drivers, they might send one or two to another facility.

HNI also is getting ready to open a new plant in Mexico that will produce chairs; in part, this plant will tap into the labor market there. As HNI moves forward, it’s working with Ruan to develop the inbound logistics network from the plant.

Ruan is also connecting HNI with another Ruan client, Clarios, a creator of advanced battery technologies for vehicles and other products. Clarios has long operated in Mexico. “We can leverage their expertise,” Frederickson notes.

And because HNI’s peak sales period typically runs spring through fall, while

demand for Clarios’ batteries generally jumps in the winter, Ruan is working with both companies to align drivers with demand so all resources can be used most effectively, Frederickson says.

The Ruan Freight Exchange (RFX) helps Ruan employees quickly identify where equipment and/or freight are available and where they’re needed, so they can shift resources where they’ll do the most good.

“It takes a provider like Ruan to have a holistic perspective and not isolate customers,” says Robert McCloskey, director, logistics and distribution with Clarios.

Because Ruan manages its private fleet, Clarios has been insulated from many of the recent increases in transportation costs. “The private fleet has been a godsend,” McCloskey says, allowing Clarios to avoid cost increases of 40% to 50%.

EARLY BIRDS

Early purchases—often, six months or more—of microprocessors, reagents, and other materials helped Anavasi Diagnostics, a diagnostic technology company, cut several months from any delays in the development and production ramp up of printed circuit assemblies and detectors, says Minh Duong, chief engineer and co-founder.

This tactic also saved approximately \$800,000 in expediting fees and broker mark-ups. “Our big learning, though, was to problem solve with our suppliers and contract manufacturers early and often,” Duong says. In doing so, the company could “nip potential issues in the bud before they became crisis situations,” he adds.

While the pandemic has caused challenges, some have been a “boon in disguise,” for supply chains, Dalvie says. They allow companies to differentiate themselves not only through pricing and marketing, but through the effectiveness of their supply chains.

Companies that can reliably meet customers’ needs are able to capture market share from those that can’t. For supply chain professionals, “it’s an opportunity to shine,” he says. ■



Food Logistics: LET'S EAT!

The pandemic and shift to home dining and takeout changed the recipe for the food supply chain. Here's how food companies are devouring new challenges.

By Karen Kroll

The food supply chain, like many others, was constructed to be “efficient, lean, and low cost,” says Barry Bradley, global supply chain lead with Crisp, which provides retail analytics software for food suppliers. Then the pandemic hit, restaurants closed, and almost everyone was cooking and eating at home.

The shift to home dining required redirecting many food supply chains and adjusting the sizes of food product packages—unlike restaurants, few consumers need to purchase, say, 40 pounds of rice in one shot. Many companies had to alter their manufacturing, packaging, and distribution operations.

The changes decimated many restaurants. About 110,000 have either temporarily or permanently closed, the National Restaurant Association reports.

Some food sectors, however, gained. For example, the North American grocery industry jumped by 12% in 2020, rather than its typical 1% or 2%, McKinsey reports.

To thrive in this new environment, supply chain professionals managing food companies must address numerous questions: When and how will demand shift next? How to determine and meet total demand across multiple channels?

Food supply chain also “need to be nimble, flexible, and creative,” says Lowell Randel, senior vice president for government and legal affairs with the Global Cold Chain Alliance, a family of trade associations. To address whatever challenges come next, the professionals running food supply chains will have to develop strong relationships with their partners across the chain and jointly craft contingency plans.

GROCERS BITE INTO E-COMMERCE

A few months into the pandemic, nearly 80% of U.S. consumers said they had shopped online for groceries, about double the pre-pandemic number. Demand for same- or next-day delivery also soared, says Pete Allen, vice president

and general manager of grocery with Berkshire Grey, which provides robotic solutions. Many grocers scrambled to build solutions to meet these shifts.

Now, after a year or so in this new environment, many grocers are saying, “We have a solution, but it’s not the solution we would have dreamed up,” says Dave Charron, senior vice president of operations with Capstone Logistics.

Cub, which operates 80 groceries in Minnesota and Illinois, had engaged a shopping delivery service during the pandemic. While the partnership worked, management wanted to regain control of customer interactions and ensure quality and timely service. The question was “how to create an online platform that represents the Cub brand,” says Chad Bersie, director of e-commerce.

Bersie turned to Capstone Logistics, whose software continually re-routes orders. It can efficiently incorporate a new order into its delivery schedule until minutes before a delivery starts. It also can alert customers and stores when a delivery is on its way.

As important, Capstone interviews and conducts background checks on all its delivery workers. The program is fully branded, so customers order through the Cub website, delivery drivers wear Cub apparel, and totes feature the Cub logo.

The rollout has “gone well,” Bersie says. One reason? Cub and Capstone talk daily to work through any issues.

Management at Ken’s Foods, a producer of more than 60 salad dressings, decided years ago to work with Westfalia Technologies to automate its Massachusetts distribution center through an automated storage and retrieval system. The goal was to “get out ahead of future

growth and labor shortages, have more control over our warehouse, and create a more energy-efficient process,” says Jim Bourne, director of transportation and offsite distribution.

The decision proved fortuitous. “Our distribution centers have not been affected to a high degree by recent supply chain issues,” Bourne says.

Nearly one-third of respondents to a recent *Food Engineering* survey indicated they were changing elements of their supply chain. During the pandemic, as demand surged in certain areas while others were laid low, food processing companies uncovered weaknesses in their supply chains and had to figure out how to work around them, the survey notes.

Robots, for instance, can pick individual grocery items from inventory and pack grocery bags, among other tasks. “The automation allows businesses to operate 24/7,” says Allen.

CATCHING COLD

As more food travels directly to consumers rather than moving on pallets from distribution centers to stores, maintaining the cold chain becomes more complicated and challenging.

One reason is a shortage of technicians who have earned the necessary certifications in these systems, says Dana Krug, vice president and general manager, food and beverage, with Phononic, which provides solid-state cooling and heating technology. Some regulations now restrict passive cooling, like gel packs or dry ice, he adds.

Phononic’s actively cooled totes, introduced in fall 2021, provide on-demand cooling and reduce the need for mammoth, expensive freezers and refrigerators, Krug says. They use water and carbon dioxide as the coolant, eliminating the need for toxic refrigerants. Three of the top 10 grocers and the leading automation partners for micro-fulfillment centers are currently using them, the company reports.

As important as hardware is the software that can provide operational information across channels. Although it

has been in business for only two years, RxSugar's syrups and sugars—all made with allulose, a natural, plant-based sweetener with 90% fewer calories than regular sugar—are available in more than 12,000 stores, across 30-plus e-commerce channels, and in LifeTime Fitness cafes.

To monitor the various channels, founder Steve Hanley turned to Crisp. Its solution aggregates data across all channels, showing which, for instance, needs more inventory. Hanley and his team can accurately gauge demand and use this data to inform production and ordering of raw materials.

RxSugar has gone from next-day ordering to 12-week lead times on materials and packaging. “We live in a supply constrained ecosystem,” Hanley says. “We’re now in a position to be able to forecast and be way ahead with our supply chain.”

TAKEOUT GROWTH CHALLENGES RESTAURANTS

Even the restaurants that remain operating face supply chain challenges. One is the number of ingredients that can go into a single menu item. “The availability of the item is potentially constrained by any component,” says Chris Gaulke, a professor at Cornell University.

One solution is shifting to more flexible and/or smaller menus, Gaulke says. Rather than featuring sauteed green beans, a menu might offer sauteed vegetables of the day.

The accelerated shift to delivery and takeout—it reached \$45 billion in 2020, versus the previous estimate of \$41 billion by 2021, Morgan Stanley notes—means higher food packaging costs and a shift in the menu mix.

While traditional takeout foods, like Asian dishes and pizza, tend to travel relatively well, items like French fries are another story. “After a 30-minute car trip, they can be a soggy, oily mess,” Gaulke says.



Meal kit company Sushify manages supply chain challenges by purchasing months in advance, working with more local suppliers, and keeping customers informed about unavoidable ingredient swaps.

New packaging can help. Peel & Stick squares by SAVRpak, for instance, pull condensation from the air to prevent food from going soggy.

Like retailers, restaurants can avoid some supply chain delays and offer fresher foods by working with local farms and suppliers. The downside? This often requires engaging with a larger number of vendors, which takes more time. And because product uniformity tends to be lower, chefs need to be more skilled in using these items.

The gig economy is poised to become a larger part of the food supply chain, and particularly last-mile deliveries, says Alex Dale, senior retail solution consultant with Dematic, a provider of material handling solutions. While protections for these workers remain a concern, many individuals like the flexibility gig work provides.

“There’s not one black-and-white answer,” Dale adds, but companies and policy makers will need to balance worker protections and flexibility to maintain this pool of workers.

SHORTAGES HIT DTC COMPANIES

Before the current supply chain challenges hit, Sushify, a sushi meal kit experience, could leverage just-in-time inventory management, says founder Kent Scholla. For instance, he could purchase supplies for June in May. Now, however, he’s working several months in advance.

Sushify sources many supplies and fish from Asia and especially Japan. On almost every recent order, an item has been missing, he says.

Scholla’s quest for additional freezers, which would allow him to boost inventory levels, has been hampered by the number on back order. He’s considering the used market, although cautiously, as the equipment is prone to breaking, he says. He’s also working with more local vegetable suppliers.

Even so, Sushify has had to do a few last-minute ingredient swaps, and let customers know. “They’ve

been gracious, about the changes,” he says. The biggest concerns arise when the change is to a shellfish, due to potential allergies.

Along with the food, packaging, cold packs, and other material surrounding it can pose logistical challenges with direct-to-consumer orders, says Paul Chambers, chief executive officer with SUBTA, an association for the subscription trade community. He recommends maintaining a strong roster of backup suppliers for non-food items and using more domestic food sources when it’s possible.

SOURCING, EMPLOYMENT CHANGES ALSO KEY

While technology is key to tackling food supply chain challenges, experts say it’s not the only change needed. More flexible sourcing is another, says Richard Volpe, associate professor of agribusiness, California Polytechnic State University.

By offering produce from local farms, retailers can take advantage of shorter supply chains and support local businesses. The interest in organic and local food also “pushes against the long-term wave in consolidation,” he says. Consolidation is efficient, yet “if anything goes wrong, the supply chain falls apart,” he adds.

“Farmers markets are essentially pop-up grocery stores that aren’t bound to a set of SKUs, don’t rely on long national transportation routes, and don’t have to pass through bottlenecks at ports,” says Katie Myhre, technology research manager with the Farmers

Market Coalition. The presence of multiple farmers and redundant offerings provides resilience in the event of a disruption.

Farmers markets face their own challenges. The farmers tend to be small businesses. To become profitable, many need to diversify into multiple channels, like Community Supported Agriculture shares (CSAs), wholesale, or online sales. Engaging across all these channels can strain resources.

Safety remains an ongoing concern across all food supply chains. In ensuring food safety, microbiology and food science will remain front and center, says Thomas Burke, food safety and quality assurance traceability manager with Chipotle. However, “their methods will be further informed and augmented through digitization,” he says.

Burke anticipates greater uptake in digital traceability to meet regulatory requirements, like proposed section 204 of the Food Safety Modernization Act. This requires the FDA to designate foods for which additional recordkeeping requirements are needed to protect public health, based on the frequency of outbreaks and occurrences of illnesses, the severity of illnesses, and other criteria. This “will also lead to the proliferation of end-to-end traceability,” Burke says.

BUILDING STRONGER CHAINS

Normally, the food supply chain operates with little fanfare. Lately, however, it has captured more attention, including from policymakers. In June 2021, the U.S. Department of Agriculture announced a commitment of more than \$4 billion to rebuild the U.S. food system and to strengthen and diversify supply chains for food production, processing, distribution, aggregation, markets, and consumers.

The focus on the food supply chain offers those involved an opportunity to tell their story—largely a positive one—and to engage policymakers and build more nimble, stronger supply chains.

“I’m optimistic the added attention to supply chains will help us come together and find solutions,” Randel says. ■



VERTICAL FARMING: THE WAVE OF THE FUTURE?

Vertical farms, in which crops are grown in artificial systems such as hydroponics, aquaponics, or other methods of soil-less agriculture, allow farmers to grow plants indoors and year-round by controlling light, temperature, water, and often carbon dioxide levels, the USDA says.

These farms may be one solution to food supply chain challenges. They can be located almost anywhere, including near population centers. “We’re taking unused industrial space and turning it into productive farmland,” says Rachel Alkon, spokesperson with Bowery, which builds smart indoor farms near cities. Many plants within a vertical farm can grow in 25 to 30 days, Alkon adds.


Founded in 2015, Bowery grows fresh, pesticide-free produce in precisely controlled environments, 365 days a year, the company says. Its proprietary BoweryOS integrates software, hardware, sensors, AI, computer vision systems, machine learning models and robotics. Each farm creates less waste and uses a fraction of the water and land when compared to traditional agriculture. Bowery’s dozen-plus leafy greens and herbs are sold in about 850 retail locations.

“I visited a vertical farm for tomatoes and bell peppers,” recalls Richard Volpe, associate professor of agribusiness, California Polytechnic State University. “I couldn’t believe the technical prowess.” That comes at a cost. Bowery, for instance, says it has raised \$472 million from investors.

The heavy start-up costs likely mean widespread investment won’t occur until climate events grow worse, Volpe says. Eventually, however, retailers and food companies will invest in vertical farms, and be able to patent their own cultivars, creating “horizontal differentiation,” he says. “It won’t address the supply chain issues today, but in a generation.”

CULTIVATING SUPPLY CHAIN TALENT



A group of five business professionals are standing in a modern office with large windows. They are silhouetted against a bright, warm light, likely from the sun setting or rising, which creates a strong lens flare effect. The office has a glass railing and a city skyline is visible in the background. In the foreground, there is a desk with papers and a pen.

2021 was notable for labor challenges and shifts in thinking about employee engagement. Here's how to attract supply chain talent and increase job satisfaction.

By Helen Mann

Trident Transport knows the value of employee engagement. The Chattanooga, Tennessee-based freight broker provides extensive employee training peppered between fun company events and community outreach. From intramural team sports and costume contests, to an annual cornhole tournament raising money for the local children's hospital, Trident places a heavy focus on workplace culture.

"On a basic level, we want our employees to enjoy where they work," explains Katelyn Clark, Trident Transport's director of people and culture. "Logistics can be stressful at times. We want to create an environment where employees are happy to come to the office each day."

That commitment pays off. The company is expanding, even as a talent gap stretches across most parts of the supply chain. While Clark agrees that there is currently a worker shortage, she says Trident has mostly managed to avoid it. "Employees left and right refer friends or past co-workers to the company," she says. "We're actively growing."

That hasn't been a universal experience. A 2018 Deloitte study—conducted well before the pandemic began—predicted a 2.4 million worker shortfall by 2028 in manufacturing alone. Today, 90% of CEOs say that a labor shortage is impacting economic growth, finds the U.S. Chamber of Commerce.

The problems plaguing supply chain employment come in a few forms, and many of them are beyond the sector's control.

For one, the economic environment hasn't been kind to employers. The labor force participation rate, a measure of how many people in the United States currently hold a job, is at 61.6%, a record low. And 11 million positions remain unfilled while 7.6 million Americans are out of work, according to the Bureau of Labor Statistics. In this environment, few industries can escape the talent crunch.

At the same time, this employment nadir comes at a moment when demand for supply chain management talent has reached a new high. So what's an executive to do?

LEAN INTO PROFESSIONAL DEVELOPMENT

Fortunately, companies looking to shore up supply chain talent have plenty of options. Data from the Bureau of Labor Statistics shows that, on average, job tenure across sectors is 4.1 years. It shrinks to 2.8 years for workers between the ages of 25 and 34. Emphasizing professional development can mitigate some of the restlessness that drives

employees to leave, according to Dr. David Huff, clinical professor of supply chain management and director of online graduate programs in supply chain management at Penn State Smeal College of Business.

An important step is mapping out career progression. Huff recommends that managers prioritize career path conversations as a means of keeping employees excited about what the future holds.

"People need to have professional development opportunities," says Huff. "They need to know not just what's happening right now, but what the job looks like five years down the road."

That necessitates that employees be given additional responsibilities as they grow in their role.

"Employees need to see that they will be given more responsibility," Huff says. "Making a career path clear isn't helpful if the roadmap reads, 'you're not going to move anywhere.'"

"People need to see that they will get opportunities to get deeper into the big decisions," he adds. "Being relied on and driving important outcomes creates job satisfaction."

Another opportunity for professional growth comes through continuing



One way Trident Transport increases employee happiness and engagement is by providing opportunities to give back to the community through events such as charity runs.

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Employees entering the supply chain field are interested in professional growth. Attending events such as ISM's World Annual Conference provides information on key topics that impact supply chain management today and into the future.

education. It's an approach that Blume Global is familiar with. The San Francisco-based provider of supply chain technology solutions recently launched initiatives through the online learning platform Coursera and the Stanford Graduate School of Business.

"Every one of our employees gets a Coursera membership," says Pervinder Johar, global CEO. "They get the certifications they need for their job, but they can also explore new skills that are relevant to their career goals."

The educational opportunities don't stop once staff members reach a senior position, either. Directors and above at Blume Global attend a week-long management program at the Stanford Graduate School of Business.

"None of us are born a manager," Johar explains. This program gives workers the structure and tools needed to grow in upper management roles.

"The net result is that we end up with a highly innovative culture focused on building something new," he adds. "It opens our minds to new possibilities, which is our end game—continuing to innovate and think outside the box."

RECRUIT WITH A CAUSE

Managing a firm's public image has never been more important than it is in the internet age. Prospective employees increasingly care about their employer's role in human welfare. This

has its upsides. Throughout 2020 and 2021, countless examples illustrate the role of supply chains in day-to-day life. Consumers got a close look at how everything from soup cans to lifesaving COVID supplies make it to their final destination.

Playing up the social impact of supply chain management can help attract new employees.

"The role of the supply chain professional has expanded beyond getting products to individuals," says Abe Eshkenazi of the Association for Supply Chain Management in Chicago. "Now we're concerned about human rights and the environment."

"If an individual wants to have an impact through their job, not only on their company but on people across the globe, I cannot think of a better opportunity than supply chain today," he adds.

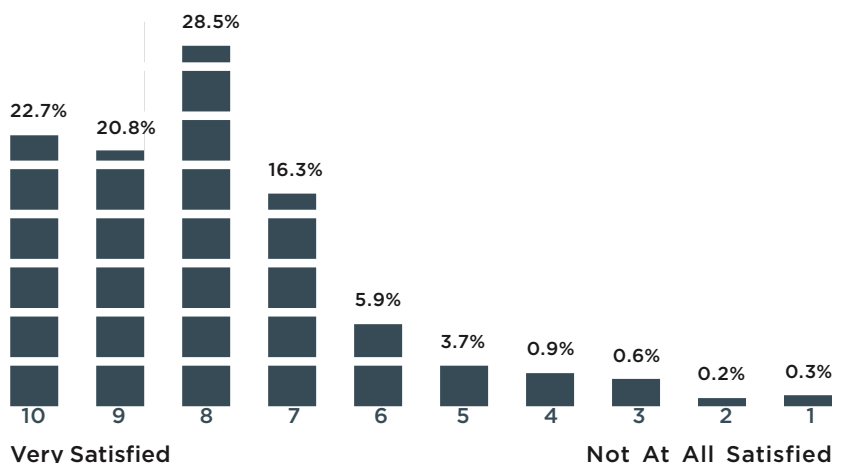
Emphasizing social causes can also test a company's public relations team. Prospective employees care about their employer as a brand, and firms are well advised to be cognizant of their image.

"People are much more concerned about corporate social responsibility," says Tom Martin, solutions director for learning at the Institute for Supply Management in Tempe, Arizona. "They interview the company before they go to work there. Everyone is much more concerned about being affiliated with a brand name that is well represented or highly thought of."

JOB SATISFACTION RUNS HIGH

Despite a stressful year, supply chain professionals continue to report high job satisfaction. On a scale from 1 to 10, 88% have a positive outlook on their careers and would recommend supply chain as a rewarding professional path to others.

SATISFACTION WITH SUPPLY CHAIN FIELD



Source: 2021 Supply Chain Salary and Career Report, Association for Supply Chain Management

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HIGH SALARIES ATTRACT TALENT

A typical starting salary for individuals entering the supply chain field is \$60,000. Salaries increase with years of experience.

MEDIAN SALARY BY NUMBER OF YEARS IN SUPPLY CHAIN



Source: 2021 Supply Chain Salary and Career Report, Association for Supply Chain Management

APPEAL TO YOUNG PROFESSIONALS

Corporate image is particularly important for attracting idealistically minded young employees. According to a recent Council of Supply Chain Management Professionals/Penske survey, 58% of professionals under age 30 who entered the field in 2021 did so because of its beneficial impact. Companies can capitalize on that enthusiasm by offering high-quality internships and focusing on mentorship.

“Companies have to give younger employees regular feedback on performance and show them what their career path looks like,” explains Craig Robins of Robins Consulting, a logistics recruiting firm based in Dallas. “It helps them feel valued and lets them know that they are important to the overall objectives of the company. That’s what younger people are really looking for.”

If making a meaningful contribution is what initially reels in young recruits, job satisfaction is what keeps them

in a role. In the same Penske survey, 99% of young people agree that supply chain management is a quality career choice, and 80% say that their jobs are better than most others. Young professionals are excited about the variety of career opportunities, and the fast-paced, challenging environment that comes with solving complex supply chain problems.

**“IF AN INDIVIDUAL WANTS TO HAVE
AN IMPACT THROUGH THEIR JOB,
NOT ONLY ON THEIR COMPANY BUT ON
PEOPLE ACROSS THE GLOBE, I CANNOT
THINK OF A BETTER OPPORTUNITY
THAN SUPPLY CHAIN TODAY.”**

—ABE ESHKENAZI, ASSOCIATION FOR
SUPPLY CHAIN MANAGEMENT.

“A lot of companies are realizing that the new generation coming up is very different than employees were even 10 or 20 years ago,” says Robins. “Younger employees expect more transparency and teamwork. This is very important.”

A SOLID CAREER CHOICE

The secret to growing company payrolls could be promulgating the upsides of a career in supply chain management. There are plenty of benefits to be had in this field, especially in uncertain times.

On a practical level, there’s compensation and job security. In the past year, median annual salary reached \$86,000, according to the Association of Supply Chain Management’s 2021 Supply Chain Salary and Career Report.

Wages typically start at \$60,000, but could more than double for professionals with longer tenure. In comparison, median earnings for all U.S. workers in the second quarter of 2021 translate to slightly more than \$50,000 per year, shows data from the Bureau of Labor Statistics. At the same time, 87% of supply chain professionals received a bonus in 2020, and only 5% reported getting laid off last year.

Job satisfaction runs high, too—88% of respondents say they would recommend to others supply chain as a profession.

“We have to create better press about ourselves,” says Martin. “Supply chain management jobs are very interesting and provide an opportunity to learn about every aspect of a business. These roles are highly visible, and there’s great opportunity for innovation.”

Mike Coxon, a partner with McKinsey & Company in Cleveland, Ohio, agrees. “There should be tremendous excitement about what’s possible in supply chain management right now,” he notes. “There’s ripe opportunity for people who want to go into a career with technology and analytics.”

“There’s a chance here to reset the mindset about what a supply chain career offers,” he says. “Getting people to recognize how exciting it is could solve some of the talent shortage.” ■

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CASEBOOK

BREA Wine Company Raises a Glass to Logistics

THE CUSTOMER

BREA Wine Co. specializes in site-specific, terroir driven, and sustainably farmed varieties of wine that flow outside the mainstream, while also bringing classic varietals into the fold. BREA wines are accessible in price and quality, and ready to drink, but also suitable for short-term aging.

THE PROVIDER

Elenteny Imports' logistics solutions guarantee all the details between initial order and final sale. The company handles freight forwarding, distribution, and retail services that enable wine, beer, and spirits importers to focus on sourcing and sales.

by Karen Kroll

BREA Wine Company runs on a lean staff—just one full-time employee. Yet since its launch in 2013, sales at the Berkeley, California-based company have grown by a factor of more than 13. The company's founders, Tim Elenteny and Chris Brockway, both are employed full-time elsewhere. Elenteny is co-founder of Elenteny Imports, headquartered in New York; Brockway owns Broc Cellars, a winery based in Berkeley, California.

"BREA Wine was supposed to be a side project," Elenteny says. Like many endeavors, however, it took on a life of its own.

Elenteny credits the company's growth in large part to its partnership with Elenteny Imports, a business-to-business logistics company focused on the alcohol beverage industry. While he might be expected to say that, given his role with Elenteny Imports, by having the company handle many compliance and logistics functions, BREA's leadership team was able to focus on building the business.

Elenteny and his partner have focused on producing sustainably farmed, accessibly priced, quality wines. BREA currently offers cabernet sauvignon, chardonnay, and pinot noir.

While growing the grapes and making the wine are critical to the success of any wine company, a command of logistics and compliance, and an appreciation for the value of time are also essential, Elenteny says. That's particularly true as a company is growing.

"Time is a huge commodity," he says. To succeed, all business owners, no matter how much funding they can access, must use the 24 hours they have each day as effectively as possible.

However, many business owners, and particularly those just starting out, find themselves dedicating an inordinate amount of time and resources to handle the myriad functions—including finance, logistics, and compliance—that are required to launch their businesses. While that's true in any field, it's particularly so for alcohol companies, given the numerous regulations they must comply with.

TIME TO COMPLY

"Compliance for winemakers and small wineries is huge," Elenteny says. Yet few small distributors or wineries can take the time to become proficient at this function.

Elenteny knew BREA didn't have the time and/or resources to obtain licenses for all of the states the company would be selling into. "That was a driver for us to place BREA with Elenteny Imports," he

says. By partnering, BREA could become “super-efficient” on the compliance side, accelerating distribution. The partnership also allowed BREA’s leadership team to “actually do the things that are going to make your brand grow, which are sales and marketing,” Elenteny adds.

STARTING WITH LOGISTICS

Many new winery ventures launch with the vineyard. While this approach is logical, it also means that once the winery produces its first vintage, management has to figure out how to move it to market.

In the United States, that requires navigating the three-tier system for alcohol distribution. Under this system, manufacturers provide alcoholic products to wholesalers, who distribute the products to retailers, who sell to the consumers, as the National Alcohol Beverage Control Association explains.

No one entity can be involved in more than one tier under most state models. Each tier is regulated and licensed separately. In addition, myriad other regulations, many of which vary by state or even municipality, can govern sales of alcohol. The three-tier system is “definitely a unique obstacle in the universal world of selling wine, spirits, and beer,” Elenteny says.

“I reverse engineered it,” he adds, referring to his approach with BREA. He and his partner started BREA with an eye toward the logistics side. That included focusing on the goal of creating a brand or company that small and mid-sized distributors could work with. Many distributors and wholesalers had been struggling to find affordable California wineries. “I saw it as a logistics opportunity for small to mid-sized distributors in the United States,” Elenteny says.

Elenteny Imports has been key to turning this vision into reality. The company was founded with a goal of offering beverage brands and U.S. importers an advantage in business-to-business logistics, along with industry expertise. Its client list includes start-ups, new importers, and established enterprises, all of whom determine which products to source and the markets into which they’ll sell. As they do, Elenteny Imports manages and provides expertise in logistics, distribution, and compliance.

While many distributors and beverage companies, especially startups, want to “hit the ground running, the complexity of the three-tier systems makes it easy to make mistakes,” says co-founder Alexi Cashen.

For example, in alcohol franchise law, a distributor who’s appointed by a brand or supplier has brand rights, Cashen says. So, before a brand or supplier can appoint a new distributor, the prior distributor must have fallen short on contracted sales metrics; if not, they don’t have to give up the brand.

“In states where franchise law can be an issue, Elenteny Import’s solution allows more freedom for brands to enter new states or test a market before committing to a distributor agreement,” Cashen says.

LICENSE TO SELL

Along with helping clients navigate the three-tier distribution system, Elenteny Imports holds licenses that allow it to sell throughout all 50 states. The company also assists clients in managing a range of other functions, including inventory, brand registration, compliance, and logistics.

Cashen and her team also help clients develop cost-effective transportation strategies. For instance, some winery owners and importers assume full

CASEBOOK STUDY

A Good Year

THE CHALLENGE:

BREA Wine Co. wanted to grow its just-launched company, while still effectively managing the compliance and logistics functions.

THE SOLUTION:

Partner with a logistics provider that has developed the compliance and logistics expertise for alcoholic beverage companies, leaving ownership more time to focus on building the company.

THE RESULTS:

Over the past eight years, BREA Wine sales have grown from 800 cases per year to 10,500, with just one full-time employee.

NEXT STEPS:

Add a few more markets and more deeply penetrate existing markets.



Tim Elenteny (left), the libations logistics leader of Elenteny Imports and Chris Brockway (right), a noted California natural winemaker and owner of Broc Cellars, are the masterminds behind BREA Wine Company.



Partnering with a third-party logistics provider to manage compliance, logistics, and other functions allows leadership at BREA Wine Company to focus on product quality and business growth.

container load shipments are the most cost-effective shipping solution. However, shipping less-than-container load, or LCL, and allocating shipments across multiple containers often “allows for staggered product landings, thus spreading out the costs,” Cashen says. Elenteny Imports can offer customers a range of shipping options, she adds.

“We take pride in tailoring our customer service with a deeper understanding of the pipeline,” Cashen says. The Elenteny Imports team understands how the logistics function can impact the effectiveness of a brand’s sales and marketing efforts, and then identifies logistics strategies that can enhance them.

The customer onboarding process typically runs from about three to six months, although some companies can launch in several weeks. The longer time frame typically is needed when developing a more complicated, multi-state strategy.

Elenteny Imports is licensed in all 50 states and manages each state’s unique requirements. “The compliance team removes obstacles from permits and brand registration,” Cashen says.

As a result, as soon as a company decides it’s time to sell into a state, they

generally can be ready to go. Elenteny Imports also handles ongoing tax and other reporting.

As important, due to the experience and expertise of its staff, Elenteny Imports can cut the risk of mistakes while allowing companies to grow. “It’s a trusted entity that can get you closer to the point that you want to be, a lot faster,” because you can maintain a focus on growing the business, Elenteny says.

QUALITY WINE, AFFORDABLE PRICE

Of course, quality wine remains essential to a winery’s success. A review in *The Davis Enterprise* calls the BREA pinot noir “clean, lovely cherry-and-dark-berry, barely a trace of oak, layers of savory herbs, surprises at every sip. And under \$20!”

Elenteny Imports helped BREA grow organically and quickly enter new states, while meeting compliance and licensing requirements. BREA currently can be found in 28 states and one international market. “Relying on the information and the people on staff at Elenteny helped us narrow our errors and speed our path to distribution,” Elenteny notes.

Many states still administer compliance using what’s basically “an abacus style of

management,” Elenteny says. Elenteny Imports takes the information and makes it available through its online platform. BREA has virtual access to all its inventory, knows the states in which it’s approved, and can move quickly when it has new vintages coming out or a new state coming online.

Indeed, BREA has enjoyed impressive growth. While the company didn’t add new markets during much of the pandemic, its current customers increased their demand. In part, Elenteny suggests, it was easier for many distributors to work with a domestic producer and avoid many of the logistics challenges, such as port congestion, that frustrated large numbers of importers.

BREA would like to add a few more states to its list. However, its real focus is going deeper into the markets in which it’s already operating.

As the company grows, it will rely on Elenteny Imports. Dealing with the myriad financial, operational, and other issues that occur daily can sidetrack business owners from their ultimate goals. “If you have a reliable partner that can save you time,” Elenteny says, “it’s worth all the resources that you can put into it.” ■

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WEBINAR



THIRD-PARTY LOGISTICS BENCHMARK REPORT WEBINAR DISCUSSION

Offered by 3PL Central

This annual benchmark report sheds light on supply chain topics including growth opportunities, the labor shortage, technology integration, and trends 3PLs need to know to remain competitive. In this on-demand recording, 3PL Central discusses data it collected from more than 200 3PL warehouses and provides insight on 2022 planning.

bit.ly/3PLCentralNov21Eb

WHITEPAPERS

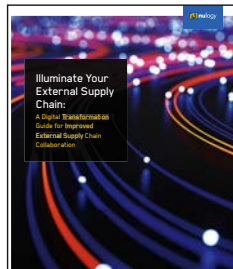


ROBOTIC LIFT TRUCKS CAN CUT OPERATING EXPENSES UP TO 70%

Offered by Yale

The productivity increases associated with robotic lift trucks don't have to come at a steep price. Robotic lift trucks can help warehouses reduce operating expenses by up to 70% and achieve meaningful savings over time. Find out how robotic lift trucks can offer a scalable solution and a quick return on investment.

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ILLUMINATE YOUR EXTERNAL SUPPLY CHAIN

Offered by Nulogy

Consumer packaged goods companies face mounting pressures such as retailer demands, supply shortages, and consumer preference shifts. It's no small feat to juggle these market forces while managing an external network of manufacturers and packagers. This guide outlines the benefits of a successful digital transformation strategy and the obstacles along the way.

bit.ly/NulogyNov21SCI



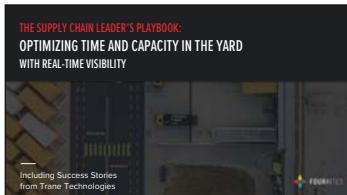
THE DEFINITIVE GUIDE TO HIGH-CAPACITY AUTONOMOUS MOBILE ROBOTS

Offered by Vecna Robotics

Self-driving forklifts and tow tractors are key tools in extending staff and maximizing workflow efficiencies. Considering the current labor shortage, organizations are responding to demand now, while preparing for the future by adopting autonomous equipment at higher rates. Read this free whitepaper to see what the future could hold for your business.

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WHITEPAPERS



OPTIMIZING TIME AND CAPACITY IN THE YARD WITH REAL-TIME VISIBILITY

Offered by FourKites

How can businesses unlock value across their operations, reduce wait times, and improve customer deliveries? With a yard management system, you can reduce detention costs, optimize employee productivity, increase throughput, and implement process improvements. Read this free report to learn how to achieve a full return on investment while alleviating four major challenges in the yard.

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OPTIMUM FACILITY DESIGN: THE DO'S AND DON'TS OF PLANNING

Offered by enVista

Facility design involves more than just warehouse configuration; it also calls for strategic thinking that identifies long-term goals and sales strategies and cooperation among all parties. Read this free whitepaper to learn the right ways—and wrong ways—to proceed with facility design planning, including planning for future needs, identifying resources, documenting current functions, and analyzing distribution center data.

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HOW 5G CELLULAR ENABLES THE DIGITAL SUPPLY CHAIN

Offered by Tive

Although there are many technology options when it comes to building a digital supply chain, one stands out as the most reliable and cost-effective: cellular. Learn about the impact of cellular-based visibility solutions on the modern supply chain, ongoing advances in cellular technology and infrastructure, and the rise of 4G, 5G, and soon 6G cellular technology.

bit.ly/TiveNov21Dialog

PODCAST



COMMUNICATION IS KEY TO COPING WITH THE CAPACITY CRUNCH

Paul Nelson
General Manager
Trinity Logistics

The lingering capacity crunch continues to affect supply chains worldwide. Companies successfully navigating the disruption collaborate with logistics partners who understand how to maintain open lines of communication and find innovative solutions to the most prevalent challenges. Paul Nelson of Trinity Logistics shares his insights from the field.

bit.ly/TrinityOct21Pod

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3PL

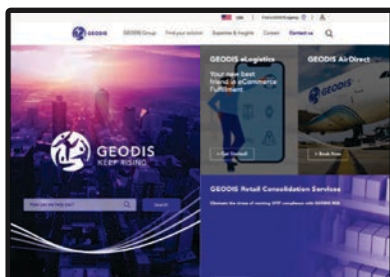
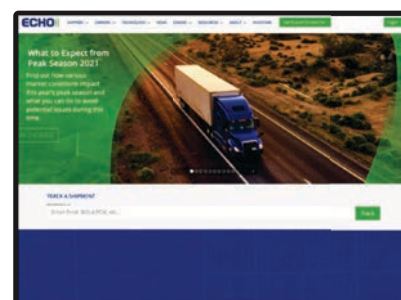


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ECHO GLOBAL LOGISTICS • www.echo.com

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



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

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:

3PL - Food Logistics

3PL

**PENSKE LOGISTICS • www.penskelogistics.com**

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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.



EDUCATION

**IOWA STATE UNIVERSITY • www.ivybusiness.iastate.edu**

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FOOD LOGISTICS

NORTH CAROLINA PORTS • www.ncports.com

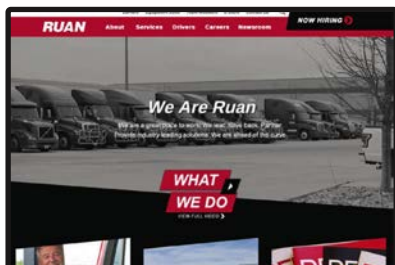
North Carolina Ports offers port locations in Wilmington and Morehead City, along with a rail hub at Charlotte Inland Port. Our customer-focused approach means shippers receive excellent communication and customized service. Our customers experience the fastest turn times on the East Coast. And our expanding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



IN THIS SECTION:

Food Logistics - Rail

FOOD LOGISTICS

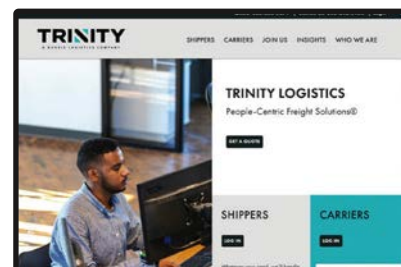


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With Ruan, you can take advantage of door-to-door shipping solutions without the hassles and overhead associated with owning and operating your own fleet of trucks. We have more than 5,200 employees operating, servicing and coordinating some 3,400 power units and 5,600 trailers out of more than 100 locations throughout the continental United States. But you get more than just drivers and equipment — we become an extension of your team, advocating for your bottom line. Find out why the right partner can drive costs out of your supply chain — call 866-RUAN-NOW or visit our website — ruan.com.

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Trinity Logistics is a team member owned leading third-party logistics company specializing in freight arrangement and supply chain solutions. Trinity can help you gain control and visibility of your supply chain, reduce costs, improve performance, and increase efficiency. With 35 years of experience and a relationship-driven team, Trinity is the 3PL company you can rely on.



LOGISTICS IT



TRANSPORTGISTICS • www.transportgistics.com

TransportGistics is a global, multi-product and services company that provides market-leading, simple, incremental solutions for transportation management and logistics functions within the supply chain. Our web-based solutions enable our customers to source, procure, and execute transportation services; enable collaboration; reduce costs; improve processes; identify hidden costs of transportation; improve vendor compliance routing guides; 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.

RAIL

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



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Sustainability - WMS

SUSTAINABILITY

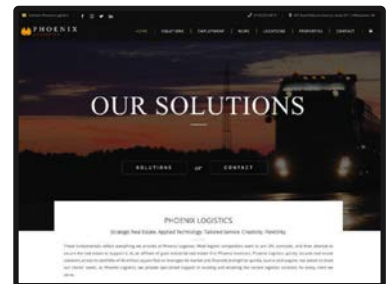
EPA SMARTWAY • www.epa.gov/smartway

In 2004, EPA launched SmartWaySM — an innovative brand that identifies products and services that reduce transportation-related emissions. The brand's impact is much greater as it signifies a partnership among government, business, and consumers to protect the environment, reduce fuel consumption, and improve air quality. All EPA SmartWay transportation programs result in significant, measurable air quality and/or greenhouse gas improvements while maintaining or improving current levels of other emissions and/or pollutants.

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PHOENIX LOGISTICS • www.phoenix3pl.com

Phoenix Logistics listens carefully to your logistics needs and responds with innovative solutions. By implementing technology, materials handling equipment, and specialized personnel in a perfectly matched and ideally located facility, Phoenix provides customized service programs specifically fulfilling the requirements of each client. The company's seasoned management group is trained in handling and distributing various product lines. For more than 30 years, Phoenix has provided comprehensive, cost-effective inventory management and value-added service programs for most consumer product industries.

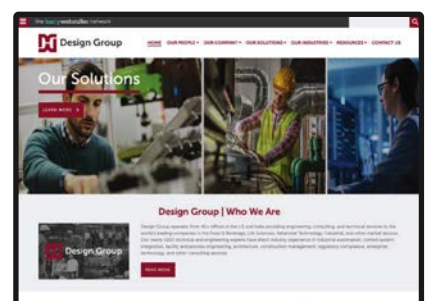
SYFAN LOGISTICS • www.syfanlogistics.com

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

WMS

DESIGN GROUP • www.bwdesigngroup.com

Design Group provides warehouse management solutions to clients of all sizes, across multiple industries. In addition to Infor CloudSuite WMS, we provide end-to-end enterprise and technology solutions including Enterprise Resource Planning, Quality Management, Product Lifecycle Management, Asset Management, and Factory Automation. We also provide a variety of professional services including warehouse evaluation and optimization, WMS software and implementations, integration to your ERP and PLM, operations planning and automated material handling systems.



[IN FOCUS]

INBRIEF

New Services and Solutions

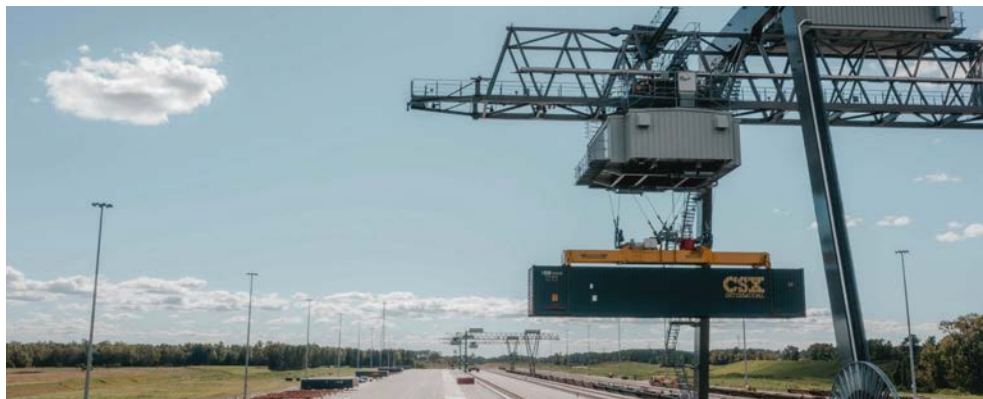
> TECHNOLOGY

> TMS provider **Axele** upgraded its software to include new factoring and loadboard integrations and new dispatch and settlement features. The latest upgrades enable the software to optimize driver schedules with the most profitable loads.

> Shippers of all sizes get access to real-time supply chain data with the latest updates from **Centerboard**. The neutral, shipper-centric transportation management solution's core platform, WIN, by Centerboard, now includes advanced shipment notifications on all order tracking messages and tender response reminders, reducing the need for shippers to contact carriers.

> **TIE Kinetix** received Microsoft Co-Sell Ready status for its supply chain solution, *EDI-2-FLOW for Dynamics 365*. The solution is available on Microsoft AppSource.

> The **PrimeRevenue** SurePay platform streamlines B2B payment services to enable early and on-time payment solutions for the entire supply chain. Customers can consolidate their entire supplier base onto one payments tool.



> **CSX** opened an intermodal terminal northeast of Raleigh, North Carolina, with access to Interstate 95. Located on 330 acres on a CSX mainline, the Carolina Connector (CCX) intermodal terminal—one of the most cutting-edge facilities on the CSX network—features three wide-span, zero-emission electric cranes with a lift capacity of 110,000 containers per year.

> E-invoicing and accounts payable automation provider **Tradeshift** now lets companies doing business in China send and receive electronic purchase orders and invoices with cross-border trade partners. The company bridged its China-hosted platform with its Tradeshift Network.

> The **GoExpedi** online procurement platform now identifies environmentally friendly products and certified veteran, minority, and women-owned businesses to help companies select and track products and suppliers that align with their environmental, social, and governance goals.



> The new PopPick solution from **Geek+** is a goods-to-person picking system that lets businesses handle different types of storage units. Its picking robots transfer pallets or mobile racks to a PopPick station where intelligent robot arms retrieve totes or boxes of ordered goods and give them to the operator at two picking points, boosting throughput capacity.

> Logistics technology providers **Imaginnovate** and **eTrac** teamed up to streamline final-mile shipment delivery. Imaginnovate's *Fleet Enable* software links with eTrac's data integration platform to connect shippers and carriers, delivering carriers' data flows, exception management, and compliance metrics to shippers' transportation management systems.

> Carriers can respond to shipper requests more quickly with an optical character recognition (OCR) feature recently added to **EBE Technologies'** *SHIPSMobile* enterprise solution. The OCR function speeds the billing process, letting carriers review images for accuracy through a web-based verification portal.

> **enVista** unveiled a new shipment experience management solution. The track-and-trace Software as a Service enables shippers to keep customers informed of in-transit shipment status and expected arrival date and time, improving the customer experience.

> SERVICES

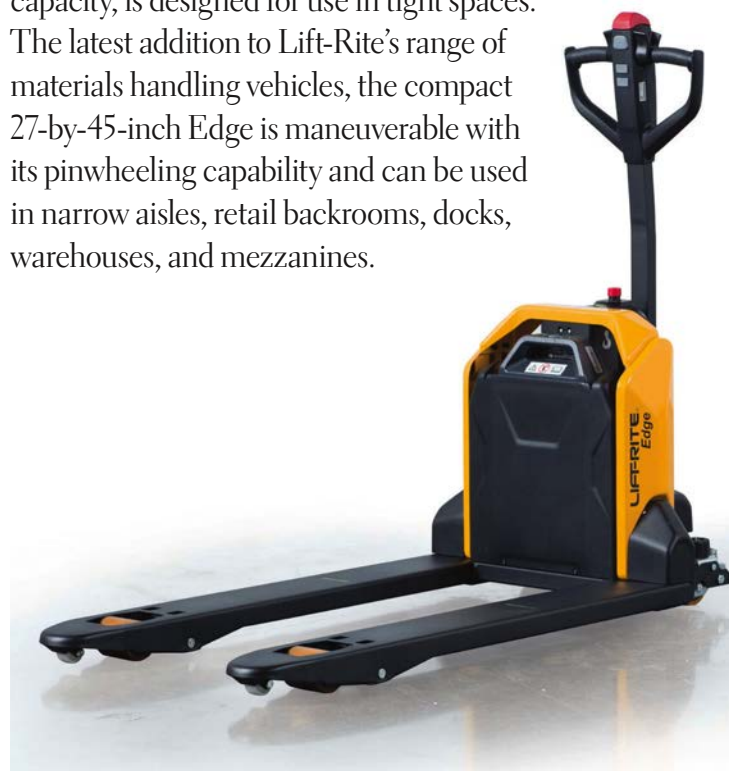
> **Qatar Airways Cargo** is replacing its entire unit load device (ULD) fleet with fire-resistant containers from aircraft equipment maker **Safran**. It took delivery of the first batch in September

2021. Over the next five years, the cargo airline will replace its fleet of more than 10,000 ULDs, aiming to exchange 70% of the units in 2022 to enhance cargo safety and address risks posed by lithium battery shipments.

> **Liquidity Services**, an e-commerce marketplace for retail, industrial, and government surplus, opened a 100,000-square-foot warehouse in northern Pennsylvania for its retail segment. The new location offers customers improved shipping cycles, lower freight costs, and an onsite pickup option.

> Wearable technology provider **Kinetic** announced a new subsidiary, Kinetic Insurance, to offer workers'

> The **Lift-Rite Edge**, a motorized, lithium-ion pallet jack, with a 3,300-pound capacity, is designed for use in tight spaces. The latest addition to Lift-Rite's range of materials handling vehicles, the compact 27-by-45-inch Edge is maneuverable with its pinwheeling capability and can be used in narrow aisles, retail backrooms, docks, warehouses, and mezzanines.



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compensation insurance. The new Kinetic workers' comp offering equips policyholders with wearable technology that is designed to reduce injuries and losses while maximizing a policyholder's safety program and culture.

> **CFI**, an operating company of TFI International, reorganized and expanded into a portfolio of five service categories: three asset-based services (truckload, dedicated, and temp-control) and two non-asset services (Mexico and logistics). To form the dedicated service, Transport America rebranded and integrated into CFI.

> PRODUCTS



> The Oyster Edge from **Digital Matter** is an ultra-rugged, indoor/outdoor battery-powered asset tracking device and Bluetooth Gateway with more than 10 years of battery life. Utilizing cloud-based location solving, it tracks assets when they're on the move and enters sleep mode when stationary to save power.

> The FlexBuffer application cell from **ABB** is a modular unit that can store and sequence items for logistics applications. Consisting of a robot, grippers, a software package, storage racking, and infeed and outfeed conveyors that feed and dispatch goods, the FlexBuffer can handle smaller batch sizes, mixed pallets, and individual orders.

> **Spireon** unveiled updates to its Intelligent Trailer Management suite, including a new FL Flex suite of products and IntelliScan cargo sensor under its FleetLocate product line. Its new volumetric-capable sensor enables trailer managers to see if the trailer is loaded or unloaded with 99% accuracy, as well as the percentage of trailer floor space available for loading.

> **Honeywell's** next-generation Automated Storage and Retrieval System (AS/RS) leverages artificial intelligence and machine learning to help warehouses and distribution centers receive, process, and fill orders faster and more accurately while reducing storage footprint. The solution helps operations manage more than 20,000 SKUs and delivers a 40% increase in throughput over manual picking operations.

> **Timestrip**, a developer of smart indicator technology, introduced a temperature indicator that helps

healthcare professionals avoid vaccine wastage. The Vaccine Freezer Monitor VFM -7°C shows a clear alert if temperatures rise above -7°C or 19.4°F.

> TRANSPORTATION

> **Dachser Mexico's** cross-border trucking and customs clearance service connects customers to Dachser USA's LCL service between China and U.S. West Coast ports. It includes picking up the cargo at either the Port of Long Beach or the Port of Los Angeles.

> **Atlas Air** expanded its partnership with Cainiao Network, the logistics arm of Alibaba Group, and now offers daily Asia-Latin America chartered flights. Atlas added a B747-400F to fly between Hong Kong, China, and Santiago, Chile, bringing the total dedicated fleet that Atlas operates for Cainiao to five aircraft.

> **J.B. Hunt Transport Services** launched a transload service to assist shippers in the New York metro area experiencing congestion. The new service is managed through a recently expanded facility in Jersey City, New Jersey, that provides port drayage, transloading, and inland linehaul solutions.

> **OOCL** strengthened its China to Southeast Asia service network by introducing the China Straits Service 3 (CSS3)



> **DB Schenker** and **Lufthansa Cargo** will extend their weekly CO2-free freighter flights between Frankfurt and Shanghai until March 2022. Telecommunication network provider **Nokia** recently signed up to the initiative, avoiding greenhouse gas emissions by using the freighter flight every week. The service is 100% covered by Sustainable Aviation Fuel, produced from renewable waste, such as used cooking oils.

in December 2021. To supplement CSS1 and CSS2, which were launched in 2020, CSS3 provides direct connections between multiple ports in China with Singapore and Malaysia.

> **American Airlines Cargo** enhanced its transatlantic services with direct service from London Heathrow (LHR) to nine U.S. cities starting in November 2021. The airline operates twice-daily service from LHR to John F. Kennedy International Airport and Dallas/Fort Worth International Airport, and daily service to Boston

Logan International Airport, Seattle-Tacoma International Airport, Los Angeles International Airport, Miami International Airport, Philadelphia International Airport, Chicago O'Hare International Airport, and Charlotte Douglas International Airport.

> **ATRAN Airlines**, a cargo carrier within Volga-Dnepr Group, introduced a freighter call to connect Xi'an, China, and Cologne, Germany. The connection offers dedicated solutions for e-commerce shipments and other types of cargo.



> **UPS Healthcare** is opening a new set of facilities, amidst expansion in the United States, Europe, and the Asia-Pacific region. The company is building or expanding facilities in Australia; Czech Republic; Germany; Netherlands; Poland; and Mira Loma, California, among others. Its Louisville facility is the company's first U.S.-based logistics facility to offer reusable cold chain packaging options.

MORE

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Logistics Events 2022

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



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Manifest

manife.st

Discover the future of logistics technology and the players transforming the industry. Stay ahead of the curve by exploring current topics covering everything from drone delivery to pandemic-proof practices.



**JAN 24-26, 2022
ATLANTA, GA**

JumpStart 2022

smc3jumpstart.com

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

**FEB 7-9, 2022
LAS VEGAS, NV**

RLA Conference & Expo

rla.org

This conference brings together reverse logistics professionals for powerful keynotes, content-driven panel discussions, and networking opportunities. Pre-event activities include an academic roundtable, original equipment manufacturer and retailer roundtable, and a women's luncheon.

**FEB 28-MAR 2, 2022
PALM SPRINGS, CA**

eTail

bit.ly/eTailWest22

This e-commerce retail event is designed to provide actionable strategies that increase business profits. Get practical tips and make connections with

successful retailers, and hear from founders, executives, and those doing the day-to-day work.

**MAR 21-23, 2022
ORLANDO, FL**

TLC Annual Conference

tlcouncil.org

The Transportation and Logistics Council conference offers sessions with experts and experienced practitioners sharing practical information and advice for daily logistics practices. Three full-day seminars cover contracting for transportation services, freight claims in plain English, and transportation and logistics law.

**MAR 28-31, 2022
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Modex 2022

modexshow.com

As the speed of manufacturing, supply chain, and transportation operations accelerates, the future depends on forward-thinking solutions. From illuminating education to next-generation technology and equipment in action, this event will empower your supply chain with more possibilities.

**MAR 29-31, 2022
ROTTERDAM,
THE NETHERLANDS**

LogiChem

bit.ly/LogiChemEU

Network with Europe's leading heads of supply chain, logistics, planning, and customer service as they share practical insight for rolling out a successful sustainability strategy. Learn

how to create a digital network that enables end-to-end visibility and build a successful risk mitigation strategy to address capacity constraints and delays.



**MAY 3-4, 2022
DALLAS, TX**

American Supply Chain Summit

supplychainsummit.com

This platform fosters collaboration on the impact of new technologies for current and future supply chain and operations leaders. Examine key case studies on how to navigate disruptions as well as how top facilities roll out workforce management, advanced analytics, process improvement, and automation.

**MAY 11-12, 2022
ROTTERDAM,
THE NETHERLANDS**

Smart Digital Ports of the Future

bit.ly/SmartPorts22

Exchange ideas with thought leaders and peers on trends in supply chain and port digitization for innovative trade. Key themes include data sharing, digitization and emerging technologies, and port connectivity.

**MAY 16-18, 2022
VANCOUVER, BC**

World Ports Conference 2022

worldportsconference.com

This virtual event assesses the indispensable role of ports in global maritime trade and brings together key industry stakeholders for learning, information sharing, networking and collaboration. Thought leaders explore topics such as climate and energy, data collaboration, risk, and resilience.



**AUG 31-SEPT 1, 2022
PHILADELPHIA, PA**

Home Delivery World

bit.ly/HomeDelivery22

Focused on global last-mile logistics, this event uncovers innovative solutions for retailers, grocers, consumer packaged goods companies, and third-party logistics providers facing challenges across the supply chain. From route optimization and reverse logistics to grocery delivery, parcel spend, and white glove, this is the premier event for the e-commerce retail supply chain.

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

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CRAWLERS CONQUER THE LAST MILE BEFORE TAKEOFF

NASA's pair of crawler-transporters may be earth-bound but they do the heavy lifting for space exploration, hauling rockets and spacecraft to the launch pad at the Kennedy Space Center in Florida. Next up: Mars missions support.



MONSTER MACHINES

Weight: Approximately 6.6 million pounds (or the weight of about 1,000 pickup trucks)

Height: Varies from approximately 20 to 26 feet, based on the position of the jacking, equalization, and leveling cylinders

Load Capacity: Able to transport 18 million pounds (or the weight of more than 20 fully loaded 777 airplanes)

Each larger than the size of a baseball infield and powered by locomotive and electrical power generator engines, the crawler-transporters were built in 1965 to move the massive Saturn V rocket from Kennedy's Vehicle Assembly Building to Launch Complex 39.

CT-2 GEARS UP FOR MARS

NASA upgraded one of its two crawler-transporters to prepare for the Artemis program, which will include exploring the moon and Mars. The Exploration Ground Systems Program modified the crawler-transporter 2 (CT-2) to remain in service for many years into the future.

The CT-2 is 131 feet long and 114 feet wide. The crawler was designed to travel 2 miles per hour unloaded. To date, CT-2 has traveled **2,365** miles.



2022 TAKEOFF

CT-2 will carry NASA's mobile launcher holding the Space Launch System rocket from the Vehicle Assembly Building to Launch Pad 39B for the Artemis I takeoff in early 2022. Several weeks before the actual launch, CT-2 will transport the Artemis I rocket stack for roughly 4 miles to Pad 39B at 1 mph.

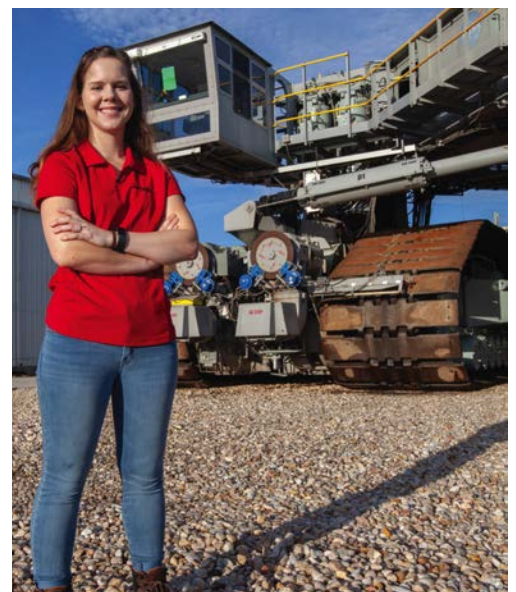
NEXT-GEN DRIVER

Breanne Stichler (pictured below) is the first woman driver of NASA's crawler-transporter. Stichler is part of a younger workforce at Kennedy—the Artemis generation—preparing to expand human exploration to Mars.

A recent University of Central Florida graduate, she received her degree in aerospace engineering. The summer before her senior year, Stichler interned for Jacobs Engineering Group on the Test and Operations Support Contract in the asset management department.

Through this internship, she had the opportunity to work on multiple projects and was introduced to the crawler.

"Driving the crawler is a bit like steering a large ship," says the 24-year-old Stichler. "And when the rocket is onboard, it will be like steering a large ship with a skyscraper on top."



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